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DEPARTMENT OF LINGUISTICS

Developmental Influences Between Academic Language Proficiencies Across Multiple Languages: *Borna, Amharic, and EFL*

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January 2020
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A Thesis Submitted to
The Department of Linguistics
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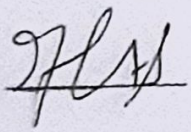
DECLARATION

I hereby declare that this thesis entitled "**Developmental Influences Between Academic Language Proficiencies across Multiple Languages: *Borna, Amharic, and English***" is my own work carried out during the course of my study under the general supervision of Dr. Binyam Sisay. I assert the statements made and conclusions drawn are an outcome of my original and independent research work. I further certify that to the best of my knowledge, this work has not been submitted to and concurrently accepted for award of other higher degree, diploma, or certificate in this university or any other institutions elsewhere. Whenever I have used materials like any text passages quoted directly or paraphrased and figures from books, papers, the Web, or other sources that have been copied or used in any other ways, I have given due credits to them in the text of the report and their details in the references list.

Sign. 

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This is to certify that the thesis prepared by **Habtamu Anbessie Woyila**, entitled: **"Developmental Influences Between Academic Language Proficiencies Across Multiple Languages: *Borna, Amharic, and EFL*"** and submitted to the department of Linguistics in the fulfillment of the requirements for the Degree of Doctor of Philosophy in General Linguistics, complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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ADDIS ABABA UNIVERSITY ★ DEPARTMENT OF LINGUISTICS ★

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Abstract

This study examined the developmental influences between academic language proficiencies across Borna (L_1), Amharic (L_2), and English (L_3) in second cycle primary schools in Bullen and Dibatie Woredas. The aim of the study was to examine the predictive interdependences of academic language skills across languages (Borna, Amharic, and English). Specifically, this study focused on (a) the correlations between academic language proficiencies across the languages, (b) predictive interdependence between literacy skills across Borna, Amharic, and English languages, (c) whether Borna language skills showed statistically significantly different predictive power towards the corresponding skills of Amharic and English, and (d) whether the developmental influences of Borna language skills were moderated by other variables such as gender, initial grades language of instruction, and knowledge of more L_2s. Tests were used as main tools of data collection, and the data was collected from 1280 participants across different grade levels- from 5^{th} to 8^{th} grades. Statistical techniques such as Pearson correlation, linear regression, hierarchical regression, t-test, and factorial ANOVA were used to analyze the data. The findings indicated that there were statistically significant positive correlations and predictive interdependences between academic language skills across the three languages: Borna, Amharic, and English. Besides, Borna language skills showed statistically significantly different predictive powers towards Amharic and English skills. Similarly, the developmental influences, i.e. the facilitation effects of Borna language literacy skills on the development of literacy skills in the Amharic language and English as a foreign language were different for different groups of gender, more linguistics repertoire, and the type of initial language-in-education program. Based on the findings, some recommendations, such as pedagogical implications and future research directions are suggested.

Acknowledgements

After an intensive period of five years, today is the day: writing this note of thanks is the finishing touch on my dissertation. It has been a period of intense learning for me, not only in the scientific arena, but also on a personal level. Writing this dissertation has had a big impact on me. I would like to reflect on the people who have supported and helped me so much throughout this period.

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Habtamu Anbessie Woyila

Addis Ababa University, January 2020

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List of Acronyms

CALP: Cognitive/Academic Language Proficiency

CUP: Common Underlying Proficiency

EFL: English as a Foreign Language

ELLs: English Language Learners

FDRE MoE: the Federal Democratic Republic of Ethiopia Ministry of Education

L1: First Language

L2: Second Language

L3: Third language

LIH: Linguistic Interdependent Hypothesis

LPGMoI: Lower Primary Grades Medium of Instruction or initial language of instruction

MoI: Medium of Instruction

SUP: Separate Underlying Proficiency

UNESCO: United Nations Educational, Scientific, and Cultural Organization

Chapter One

1. Background of The Study

1.1. Introduction

Ethiopia is a multinational and multilingual state where about eighty-five languages are spoken by about one hundred million people of different ethnic groups residing in nine regions and in two federal administrative cities. Of these regions, Benishangul Gumuz is one of the most heterogeneous regions consisting of different linguistic groups: Gumuz, Berta, Shinasha, Mao, Komo, Awigni, Amhara, Oromo, Arab, Hadyia, and Kembata. Based on the 2007 Census conducted by the Central Statistical Agency of Ethiopia (CSA), the Benishangul-Gumuz Region has a total population of 784,345, consisting of 398,655 men and 385,690 women. The ethnic groups include Berta (25.41%), Amhara (21.69%), Gumuz (20.88%), Oromo (13.55%), Shinasha (7.73%), and Agaw-Awi (4.22%). Main languages are Berta (25.15%), Amharic (22.46%), Gumuz (20.59%), Oromo (17.69%), Shinasha (4.58%) and Awngi (4.01%).

Following the downfall of the Dergue regime in 1991, the current ruling party made policy changes in education, especially at the primary school levels and since then, mother tongue education has been in effect in Ethiopia. The educational changes brought by the Constitution and the language-in-education policy have resulted in the emergence of local languages as media of instruction. Currently, around fifty-one local languages are being used as languages of instruction, and this has brought new trends in which linguistic minority groups have the opportunity to learn school subjects in their respective mother tongues. While the number of local languages used as media of instruction varies from

region to region, in the Benishangul Gumuz region alone, for instance, three local languages of instruction have been in use at the primary schools. One of these languages is Borna, which is being used as medium of instructions in schooling the Boro children from 2007/8 onwards. Since then, the Boro ethnic children have been learning three languages- Borna, Amharic, and English as a foreign language (EFL) - for the first four primary school grades while Borna is used as a school language and taught as a subject. On the other hand, English is used as a school language and taught as a subject from grade five onwards while both Borna and Amharic are taught as subjects respectively.

Defined as one's first language, home language, and heritage language, mother tongue is considered as a language one knows best and opts for use in beginning education (Jessica, 2011). Mother tongue education has preoccupied applied linguistics and educational studies in the last fifty years. The principle that children should be educated in their first language received prominence through the 1953 UNESCO Declaration. The declaration states that on educational grounds, pupils should begin their schooling through the medium of their mother tongue because beginning school life in a familiar language would facilitate smooth transition between home and school.

Research demonstrated that maintaining first language abilities and enhancing them through the developments of literacy skills, content knowledge, and academic language competencies in L1 actually leads to positive cognitive growth, easier literacy skills acquisition, better metalinguistic awareness and academic outcomes in additional language learning, and better achievements in school in general (Cummins, 2000; Palmer et.al., 2007; Lindholm-Leary and Borsato, 2006). Hence, Learning through and developing literacy skills

in a child's mother tongue do not limit his/her capacity to develop skills in a second or a majority language (Cummins, 1981, 2000; Jessica, 2011).

In maintaining a claim that children develop new knowledge and skills based on what they have already known from their community and culture, primary school curricula that began instructions in children's mother tongue are believed to help students to develop early literacy skills more quickly as well as transfer key skills and strategies to a second or additional language learning contexts (Malone, 2004; Dekker and Young, 2007).

Cummins (2000a, 2000b), asserts that children with a solid literacy foundation in their mother tongue develop strong literacy skills in the school language. This in turn enable them to go from familiar language to the unfamiliar one by using what they have learned about reading and writing skills and strategies in their first language and their knowledge of oral skills in their second language to bridge their reading and writing skills in the second language.

Based on the Linguistic Interdependence Hypothesis, Lanuzae and Snow (1989) state that transfer of academic language proficiency from L1 to L2 can account for success in L2 academic language proficiency development. In other words, a well-developed state of L1 academic language proficiency could be transferred to L2 tasks at early stages of L2 acquisition, thereby providing a "*shortcut*" to L2 performance (p. 324). These studies underline the important contribution that L1 literacy abilities can make to L2 literacy development in bilingual students.

Besides, a certain minimum level of general language proficiency in first and second languages is undoubtedly necessary for the development of literacy skills in both

languages, the relationship of L3 literacy development with L1 and L2 appears to be more complex than the relationship between L1 and L2 literacy skills. Because the development of second language literacy skills often draws on knowledge and experiences linked to a child's first language, third language literacy development is likely to draw on a different role of the L1 and L2 literacy skills and strategies, according to the hypothesis that languages are interdependent.

In other words, the contribution that first language competencies make to third language literacy development may be composed of specific aspects of second language proficiency, which works in a complementary fashion with first language proficiency and vice-versa. The point here is the extent to which third language literacy development is influenced by common underlying language-related abilities that virtually apply to any languages and language-specific abilities that emanate from the first and the second languages and vice-versa.

Hence, the differential influences that L1 and L2 literacy skills might play in relation to L3 literacy development and vice versa could help to define more clearly an important construct that are related to the constructs of developmental interdependence and common underlying proficiency model in relation to cross-linguistic influence between literacy skills in multiple language learning school contexts.

Thus, the purpose of this study is to explore the developmental interdependence of literacy skills, particularly the reading and writing skills across three languages: Borna, Amharic, and English (hereafter, L1, L2, and L3 respectively) in multilingual primary schools in Bullen and Debati Woredas.

1.2. Statement of the Problem

Cummins' (1980) the Linguistic Interdependence Hypothesis original definition is

> …. to the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (in either school or environment) and adequate motivation to learn Ly… (p. 122).

In this hypothesis, Cummins (1981, 2000) has postulated that acquisition of first and second languages is developmentally interdependent; that is, development of the first language can influence and, in particular, facilitate development of the second language, when students have developed certain threshold level that is required for the transfer of skills to happen across languages.

However, this hypothesis views language interdependence as independent of contexts. As such, only the first language influences and facilitates the development of the second language without any interference from the immediate context in which the children are exposed to those languages and without any influence from the lately being acquired language(s). For example, there is a situation where children have only a limited amount of exposure to a certain language in school whereas other children have much exposure to that language both in school and in environment. This is apparent in Ethiopian schools where language acquisition involves a number of variables, such as the varying language-in-education programs or different initial language of instructions used to teach the same linguistic groups, the socio-linguistic variable, and other demographic variables that have

differential roles, especially when it comes to literacy skills acquisition in multiple languages.

Although much research has been done on bilingualism and the effects a native language can have on a second language (Cook, 2003; Hummel, 2013), there is no research that has been done on the bidirectional influences between Borna, Amharic, and English regarding cross-linguistic influences of common underlying literacy-related abilities that essentially apply to substantiate the developmental interdependence of academic language skills in a multilingual language learning contexts. Besides, there is virtually no research so far that examines the interaction of other moderating factors with Borna language skills in the developmental influences of Borna literacy skills on the developments of the corresponding skills of Amharic and English. Therefore, it is worthwhile to explore cross-language developmental influences between literacy skills across Borna, Amharic, and English in multilingual learning school contexts.

1.3. Research Questions

The main objective of this study was to examine the developmental influence of literacy skills across Borna, Amharic, and English. Based on the problem stated above and the main objective of the study, the following research questions were formulated.

1. Are there statistically significant correlations between language and literacy skills across Borna, Amharic, and EFL?
2. Are there statistically significant predictive interdependence between literacy skills (reading and writing) across Borna, Amharic, and EFL?

3. Do Borna literacy skills have statistically significantly different predictive power towards the corresponding literacy skills of Amharic and EFL?
4. Are the effects of Borna literacy skills on Amharic and EFL literacy skills contingent on gender, knowledge of more L_{2s}, and initial language of instructions, respectively?

1.4. Purpose of the study

The purpose of this study is to find out empirical evidence for the linguistic interdependence hypothesis to address gaps in our understanding of multilingual learners' academic literacy skills developmental influences across multiple languages along with their interaction effects with other moderating variable on the acquisition of academic language proficiencies in multiple languages in second cycle primary school levels.

1.5. Scope and Limitation of the Study

This study is delineated to the cross-linguistic influences between children's literacy skills within the trilingual language learning primary school context, as measured by reading comprehension and sentence writing tests. Moreover, a specific type of reading skill and/or writing skill disability (dyslexia) would have likely affected the test scores of a student. However, reading comprehension and writing performance tests are the common types of tasks that are being practiced in language classes within the school context and that reflect a student's academic performance in school achievement tests. Hence, it was not the scope of this study to identify whether a student has reading skill and/or writing skill difficulties as it was and is beyond the researcher's expertise.

Another limitation of this study is that it did not consider a learner's attitude towards the languages under investigation as a contributing variable that may affect his or her level of

proficiency in the three languages. The reason is that every schoolchild is required to learn these languages because of official requirements and for the purpose of a child's overall academic achievement in schools. Hence, his/her attitude towards and motivation to learn any or all of the three languages may have affected his/her test scores in one way or another.

1.6. Significance of the Research

This study has both theoretical and practical values. It is significant in that it may shed light on the interdependence of trilingual academic language proficiency, particularly the relationship between academic reading and writing skills across multiple languages: Borna, Amharic, and English. It may also help us to see the dynamic developmental interplay of literacy skills in learning three languages with a mutual influence on each other in multilingual context, where additional language learning may be influenced by the variety of factors, such as the type/context of language learning, learners' linguistic background, gender, and initial grades language of instruction and status factor. Further, the empirical findings from this study may also contribute to for instructional decision- and policy-making purpose. Finally, this study may serve as a springboard for interested researchers to conduct further studies in this area in a rather different way.

Chapter Two

2. Review of Related Literatures

2.1. Introduction

This chapter begins with a review of the conceptual framework: the interdependence hypothesis and the common underlying proficiency model of bilingual proficiency (Cummins, 1980, 2005). The review of the conceptual foundations is followed by a detailed review of previous research focusing on native language and second language literacy developments. Then, a review of third or additional language acquisition in general is followed by a detailed review of research on the effects of bilingualism on additional language learning or acquisition.

2.2. Conceptual Framework of the Study

The conceptual framework of this study consists of Cummins' (1980, 2005) the interdependence hypothesis along with the common underlying proficiency model of bilingual proficiency.

2.2.1. The interdependence hypothesis

This hypothesis, also referred to as the developmental interdependence hypothesis or the linguistic interdependence hypothesis in the literature posits the level of L2 competence which a bilingual child attains is partially a function of the type of competence the child has developed in L1 at the time when intensive exposure to L2 begins" (Cummins, 1979, p. 33). That is, strong L1 literacy skills make it possible to transfer existing knowledge to a second language/additional language-learning context.

Cummins (2005) described five types of transfer: transfer of conceptual elements, transfer of metacognitive/metalinguistic elements, transfer of pragmatic aspects of language use, transfer of specific linguistic elements, and transfer of phonological awareness. Linguistic distance between L1 and L2 is a strong determinant of the type of transfer that will occur. The interdependence hypothesis is often utilized to explain significant correlations between L1 and L2 reading comprehension.

2.2.2. The threshold hypotheses

The interdependence hypothesis was put forward along with another, much debated hypothesis. The threshold hypothesis (Cummins, 1979), states transfer between L1 and L2 occurs if a child has achieved a minimum level of proficiency in the target language. In other words, those aspects of bilingualism that might positively influence cognitive growth are unlikely to come into effect until the child has attained a certain minimum or threshold level of competence in a second language. Taken out of context, this hypothesis was likened to Clarke's (1980) short-circuit hypothesis, according to which limited L2 knowledge "short-circuits" a good reader's understanding when reading in an L2, and as a consequence the reader returns to poor reader strategies.

After reviewing both the threshold and the short-circuit hypotheses, Alderson (1984) posed the question whether L2 reading difficulties were a reading problem or a language problem. He concluded that "foreign language readers will not be able to read as well in the foreign language as in their first language until they have reached a threshold level of competence in that foreign language" (p. 19). Using this reduced form of the threshold hypothesis of bilingual cognitive competence to a theoretical threshold of L2 proficiency is

needed to successful transfer of L1 skills to L2 reading, many researchers have attempted to answer Alderson's question (e.g. Bernhardt & Kamil, 1995; Brisbois, 1995; Jiang, 2011; Lee & Schallert, 1997, Park, 2013). The intention of the threshold hypothesis, however, was not to send researchers to look for the minimal level of L2 knowledge necessary to understand L2 texts. Rather, it focused on the (a) minimum linguistic competence in *both* languages necessary for cognitive growth and (b) proficiency in *both* languages needed to enjoy the cognitive benefits of bilingualism. Cummins (2000) himself believed that the threshold hypothesis was "speculative" and not as relevant to education as the interdependence hypothesis. Although the findings of studies that highly concerned over the L2 proficiency threshold level may be conflicting, they are also valuable because they confirmed the importance of both L1 literacy and L2 knowledge in L2 literacy development.

2.2.3. The common underlying proficiency model

Transfer between L1 and L2 occurs because, despite the differences in superficial language features that differentiate the learner's L1 from L2, underneath the superficial language features, there is a common underlying proficiency (CUP), defined as "the cognitive/academic knowledge and abilities that underlie academic performance in both languages" (Cummins, 2005, p. 4.). Because the CUP model is built on the interdependence hypothesis, it allows for knowledge acquired in one language to facilitate and increase knowledge in the other language. In contrast, the separate underlying proficiency model implies that language abilities in the two languages are separate. Cummins (2005)

provided a visual representation of the difference between the SUP and CUP models in the following Figure.

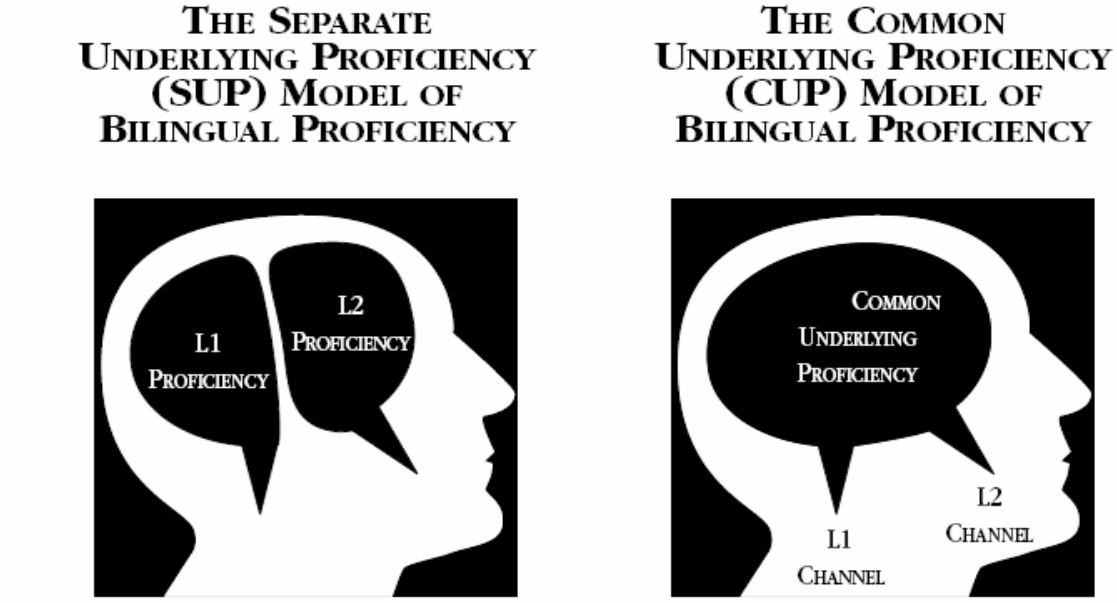


Figure 1: The difference between the SUP (left) and the CUP (right) models of bilingual proficiency (Cummins, 2005)

In the SUP model, acquiring knowledge in one language would not result in growth in the other language, resulting in approaches such as target language only instruction with zero tolerance to L1 use in the classroom. On the other hand, the utilization of CUP model empowers instructors to allow students for the constructive use of the L1 in an L2 classroom and vice versa.

In the Figure below, bilingual proficiency is represented by means of a "dual iceberg" in which common cross-lingual proficiencies underlie the obviously different surface manifestations of each language.

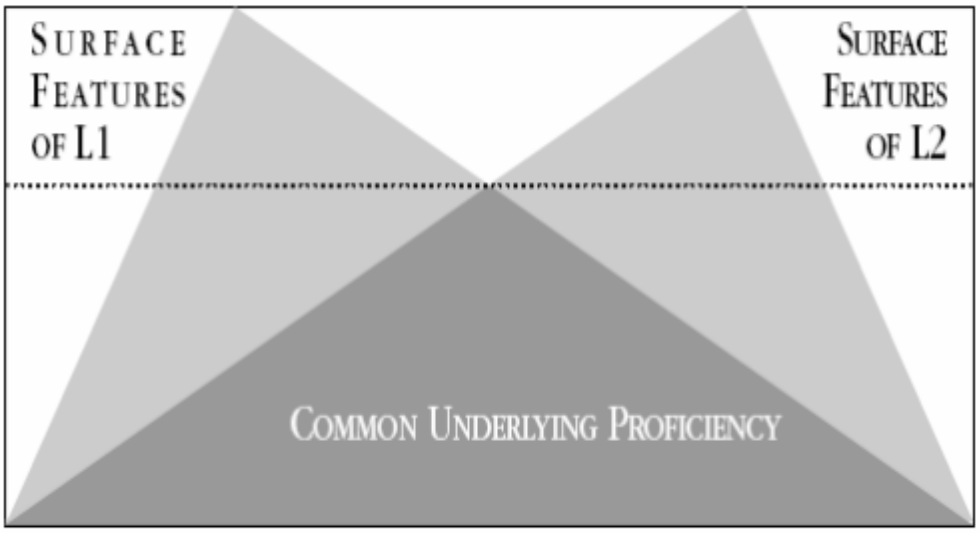


Figure 2: "Dual iceberg" representation of bilingual proficiency (Cummins, 2005)

The figures above represent visual metaphors. As such, they are illustrative rather than definitive. They provide only a general sense of what aspects of languages are interdependent. Empirical research, however, can provide much more information that is specific. For example, Cummins et al. (1984) found that grammatical knowledge showed minimal relationship across English and Japanese, but significant relationships were observed for both literacy-related knowledge (e.g., reading comprehension and vocabulary) and pragmatic dimensions of oral language (communicative style). As noted above, there is also increasing evidence that phonological awareness transfers across languages (e.g., Durgunoglu & Verhoeven, 1998; Geva, 2000; Lambert & Tucker, 1972).

2.3. Construct of Cross-language Transfer

Cross-language transfer is broadly used as a cover term for "types of influence or application of knowledge, skills, and/or strategies, from languages other than the target language" (Odlin, 2010, p. 435). The term transfer is often used interchangeably with cross-

linguistic influence, referring to "the influence of a person's knowledge of [skills in] one language on that person's knowledge or performance in another language" (Jarvis & Pavlenko, 2008, p.1). Language transfer is presumed potentially to affect all linguistic subsystems of the language user, "including pragmatics and rhetoric, semantics, syntax, morphology, phonology, phonetics, and orthography" (Odlin, 2010, p. 437) as well as the language acquisition process, language use, and other linguistic, psychological, cognitive, and cultural processes (Jarvis & Pavlenko, 2008). Cook (1992) embraces transfer as "a source of both code-breaking and decoding" (p. 581).

According to Cook, code breaking in language learning is the "creation of knowledge in the mind" while decoding refers to the "use of existing knowledge for a purpose, that is, to understand input or produce output." Thus, Cook defines transfer as both a synchronic and diachronic phenomenon involving the inclusion of nonnative languages in addition to the native language.· Concerning directionality of cross-language transfer, Cook (2013) suggests that transfer can also take place in the reverse direction from second language to the first. Similarly, current theoretical perspectives in the field of multilingualism maintain that, a comprehensive theory of transfer must encompass the activation of prior knowledge of any language other than the target language, which is presumed to be influenced by factors, such as psycho-typology (i.e., perceived linguistic distance between languages), use of the language, the level of proficiency in the target language, the foreign language effect (i.e. the tendency in language learners to activate an earlier L2 in L3 performance), and the learner's perception of correctness of a target word (De Angelis,2007; Jessner,2008c)

Several researchers question the scope of the term 'language transfer.' Sharwood Smith Kellerman (1986) argues that transfer should be restricted to processes leading to the incorporation of linguistic features from one language to another. Herdina and Jessner (2002) argue that the term "should be restricted to a basically predictable static or monotonous phenomenon of the transfer of [the same] structures of L1 to L2" (p.29), and that transfer is more likely to occur between language systems that are essentially unbalanced, i.e., as opposed to interference, which occurs between systems that are more balanced. They further suggest the use of the term 'cross linguistic interaction,' which they conceptualize to include transfer as well as variants of transfer phenomena, such as interference and code switching.

Despite differences in points of view, all of the previous definitions imply the inclusion of both L1 and subsequent languages as a potential source of cross-linguistic influence. Moreover, language transfer, traditionally conceptualized as transfer from L1 to L2 forms, has been broadened to encompass various transfer possibilities, including from L2 or L3 back to L1 (Jarvis & Pavlenko 2008). Transfer is conceptualized to include not only linguistic elements but also conversational styles, rules of pragmatic use, conceptual knowledge, and metacognitive and metalinguistic strategies (Cummins, 2008). The definitions, thus far suggest that transfer occurs in proportion to the number of languages known to the individual.

In this study, the term cross-linguistic transfer/cross-linguistic influence was used to refer to the interdependence of academic language proficiency across triple languages and modalities in either direction.

2.4. Construct of Academic Language Proficiency

The construct of academic language proficiency is broadly conceived as the specialized language knowledge and skills required to perform successfully in academic contexts (Cummins, 2000a; Valdes, 2004). Researchers investigating the construct presume that it includes the following interrelated components of knowledge: “Literacy component skills - that are mainly reading and writing skills; Linguistic knowledge- that is syntax, morphology, and lexicon; Metalinguistic knowledge- that is the ability to think about and reflect the nature and functions of the language" (Baker, 2006, p. 122); and academic/cognitive skills- for example, working memory, concept formation, rule discovery, allocation of new strategies for specific tasks, verbal originality, divergent, and creative thinking (e.g., Abu-Rabia, 2001; Bialystok, 2001; Carson, 2004; Geva, 1999; Koda, 2005; Schoonenet al., 2011; Verhoeven, 1994).

An influential contemporary conceptualization of academic language proficiency is the construct of Cognitive Academic Language Proficiency (CALP) proposed by Cummins (1980) initially defined as "aspects of language proficiency which are closely related to the development of literacy skills in L1 and L2" (p.177), and as “the ability to manipulate and interpret language in cognitively demanding, context-reduced texts” (Cummins, 1984, p.137). Later on, CALP was modified to “reflect the academic registers of language that children acquire in schools and that they need to use effectively in order to progress successfully through the school" (Cummins, 2000a, p.59). An important aspect of academic language proficiency is the notion of register, which refers to the linguistic realization of social and cultural dimensions, such as authority, power, politeness, and intimacy (Ravid,

2004: p.347-350). Register is also considered to be "a language variety associated with particular situational contexts or purposes" (Biber, 1995; p. 1), hence implying a relationship between text and context.

Halliday (1994) suggests that the relationship between text and context differs according to field, the type of social action, or what the text is about; tenor, the role relationships of participants and mode, the symbolic organization of the discourse, that is, whether it is spoken or written, and how information is structured. Several researchers suggest that the expression of how field, tenor, and mode are configured in texts is embodied in the concept of genre, which refers to text types that share the same socially recognized purpose as well as similar rhetorical and structural elements to achieve this purpose (Hyland, 2002). The register used in academic settings is conceived to be highly specialized in terms of vocabulary load, syntactic features, and discourse conventions (Cummins, 2000b; Mohan, 2011).

2.5. Development of Literacy Components

The studies reviewed in this section are diverse in their focus and approaches, but are considered together because all look at specific components of reading and writing. At issue is the extent to which L2 literacy development is influenced by common underlying language-related abilities that apply to virtually any language, as in studies dealing with phonological awareness or, conversely, by language-specific abilities that emanate from the L1 or the L2, as in studies dealing with spelling or cognate vocabulary.

2.5.1. Phonological Awareness

Research on L1 reading has established that phonological awareness is a significant correlate of successful beginning reading development (Adams, 1990). The causal relationship between reading and phonological awareness has been shown to be bi-directional, with certain aspects of phonological awareness playing a fundamental role in facilitating early reading acquisition while reading acquisition itself facilitates the emergence of yet other, more sophisticated, aspects of phonological awareness (Adams, 1990, Snow, Burns & Griffin, 1998). The causal role of phonological awareness in reading acquisition is supported by intervention studies that show that children with difficulty learning to read their native language exhibit statistically significant gains in reading ability following training in phonological awareness (Torgesen, Alexander, Wagner, Rashotte, Voeller, & Conway, 2001) and also by research that shows that poor and good native language readers differ significantly from one another on tasks that tap phonological awareness, suggesting that phonological awareness is a decisive factor (Wagner & Torgesen, 1987).

The research reviewed in this section examines phonological awareness in L1 and L2 and its relationship to L2 reading. A critical question at point is whether phonological awareness and its relationship to reading acquisition is tied to a particular language or whether it is a meta- or common underlying linguistic ability that has cross-linguistic repercussions, as noted by Durgunoglu, Nagy and Hancin-Bhatt (1993): “the ability to hear small components of spoken language may be highly correlated between languages (p. 454).”

Although few in number and diverse in focus, the studies reviewed here all point towards the same general conclusion; namely, that phonological awareness is a common underlying ability that is linked to oral language development and is shared cross-linguistically; that is to say, phonological awareness in one language (e.g., L1) supports phonological awareness in an additional language (i.e., L2) and, in turn, reading acquisition in that language. The results from instructional studies also suggest that phonological awareness in the L2 can be developed through direct intervention, even if L2 oral development is by itself somewhat limited – adding further evidences that phonological awareness is a metalinguistic or common underlying proficiency.

That L2 phonological awareness is significantly related to L2 reading development, as L1 phonological awareness is linked to L1 reading development, is evidenced in research by Carlisle, Beeman, Davis, and Sparim (1999). They found that English L2 phonological awareness contributed to English L2 reading comprehension. Durgunoglu, Nagy, and Hancin-Bhatt (1993) point to phonological awareness as fundamentally a cross-linguistic skill in nature based on their finding that Spanish L1 phonological awareness was a significant predictor of English L2 word recognition. The cross-linguistic interdependence of phonological awareness is supported further in a study by Roberts and Corbett (1997) that showed that instruction in English L2 phonological awareness significantly improved Hmong L1 phonological awareness. Evidence for the trainability of L2 phonological awareness comes from Roberts and Corbett (1997) and Terrasi (2000) who found that direct instruction in phonological awareness in L2 English significantly enhanced phonological awareness in that language. That phonological awareness can be promoted independently of general oral L2 proficiency is supported by Durgunoglu et al. (1993) who

found that L1 phonological awareness was a more significant predictor of L2 word reading ability than was either L1 or L2 oral proficiency.

2.5.2. Orthographic Knowledge

While the findings from studies of phonological awareness argue for cross-linguistic influences that are common in learning any language, studies that have examined sound-letter correspondences and spelling report evidence for both language-specific and common developmental influences. Thus, on the one hand, it appears that L2 spelling is subject to contrastive L1-L2 effects in line with a contrastive analysis perspective – that is to say, differences in sound-letter correspondence in the L1 and L2 can result in negative transfer from the L1. On the other hand, ELLs' English spelling patterns have been shown to reflect developmental processes that are also exhibited by native English speakers.

Evidence of negative transfer in spelling comes from studies by Fashola, Drum, Mayer, & Kang (1996) and Zutell & Allen (1988) who found that Hispanic ELLs erroneously applied Spanish L1 phonological and orthographic rules when asked to write selected words with contrastive English/Spanish spelling patterns. In a descriptive analysis of writing samples, Cronnell (1985) also identified L1 influences in L2 errors. In contrast, Tompkins, Abramson & Pritchard (1999) failed to find such negative transfer when they examined naturally occurring spelling errors in the writing journals of ELLs from different language backgrounds and English L1 children, and suggested that the ELLs may have avoided using words with contrastive patterns in order to avoid errors. The only errors differentiating the ELLs and English L1 students in the Tompkins et al. study were those involving inflectional endings, a finding also reported by Cronnell (1985). The students exhibited

largely developmental patterns in their English spelling, patterns that were also exhibited by native English speakers. Such target-like error patterns argue for developmental language learning processes that characterize both native speakers and L2 language learners of the same language.

Research by Hsia (1992) which used both phonological and spelling measures to examine L1 transfer effects on L2 development suggests that such effects may be more likely in the early or beginning stages of development when learners lack knowledge of more appropriate, target-like features of the new language. More specifically, Hsia examined the influence of Chinese-background ELLs' knowledge of L1 Mandarin syllable segmentation patterns on their phoneme and syllable segmentation abilities in English, and found that, although there was an initial Mandarin L1 effect, English native-like phonological constraints were acquired subsequently and quickly.

2.5.3. Cognate Vocabulary

Research on ELLs' recognition and use of the cognate relationship between L1 and L2 vocabulary has shown that ELLs can make use of L1 vocabulary knowledge to determine the meaning of cognate vocabulary in L2 text. All of the research on this issue has examined ELLs of Hispanic background. More specifically, Nagy, Garcia, Durgunoglu, and Hancin-Bhatt (1993) and Jimenez, Garcia, and Pearson (1996) found that more successful L2 readers were better able than less successful L2 readers to explicitly recognize Spanish-English cognates and to make use of their knowledge of cognates during reading. These researchers, as well as Hancin-Bhatt and Nagy (1994), also found that the ability to translate cognates from L2 to L1 was linked to individual students' preference to speak

Spanish and their level of bilingualism and, in particular, their knowledge of Spanish vocabulary, arguing, once again, that ELLs' L1 need not be a distracting but rather a facilitating factor in L2 literacy development. Finally, Nagy, Garcia, Durgunoglu, and Hancin-Bhatt (1993) and Hancin-Bhatt and Nagy (1994) have found that Spanish L1 ELLs are better able to make use of spelling than morphological similarities to recognize cognates, although use of morphological similarities increased with grade level. Thus, instruction in specific morphological similarities between cognates might contribute to the L2 literacy development of ELLs by enhancing their knowledge of these otherwise underused cognate relationships.

2.6. Cross-linguistic Influences of Literacy Development

Research on the effects of L1 literacy on L2 literacy development is the issue in this review of cross-linguistic/cross-modal relationships. Although the 'time on task' view of L2 development might oppose promotion of L1 literacy on the grounds that it reduces time that ELLs have to devote to L2 literacy development or more directly as a source of interference or confusion, research such as that by Nguyen and Shin (2001) supports the view that competence in L1 literacy does not retard L2 literacy development. Much of the evidence concerning the effects of L1 literacy development on L2 literacy development comes from research on program comparisons, initial language of instruction, and various instructional strategies. These types of studies examine this relationship in relatively general terms by comparing students' general levels of reading and writing achievement in both languages. What remains to be discussed in this section are more specific developmental relationships between the two literacies, that is, the specific ways in which

L2 literacy develops in bilingual contexts. This is done by examining specific aspects of literacy and specific types of learners – e.g., successful and unsuccessful ELL readers/writers.

2.6.1. L1 and L2 Literacy Strategies

Research that has examined the strategies used by ELLs during L2 literacy tasks provides further insight into the nature of the additive relationship between L1 and L2 literacy. Research in this corpus has examined this issue in two ways: by comparing the strategies used by ELLs during both L1 and L2 literacy tasks; and by comparing the strategies used by ELLs during L2 English reading tasks with those used by native English speakers.

Research that has compared the strategies used by ELLs during L1 and L2 literacy tasks has found that successful and "unsuccessful" ELL readers/writers employ different strategies (Calero-Breckheimer & Goetz, 1993; Edelsky & Jilbert, 1985; Jimenez, 2000; Jimenez et al., 1996; Langer et al., 1990, Miramontes, 1987). More specifically, but perhaps not surprising, successful ELL readers/writers employ a number of effective strategies, such as using context and inference, monitoring comprehension, and invoking prior knowledge, whereas unsuccessful ELL readers employ a variety of ineffective or less sophisticated strategies (Padron & Waxman, 1988). They fail to draw or adjust inferences; they often invoke irrelevant prior knowledge; and they view completion as more important than comprehension (Jimenez et al., 1996).

Of perhaps more interest, this research also found that successful readers/writers demonstrate use of the same strategies during both L1 and L2 literacy tasks, and they view reading in the L1 and L2 as similar activities or processes with language specific

differences. Jimenez et al. (1996) reported that successful ELL readers/writers were able to deploy a variety of effective 'bilingual' strategies, such as searching for cognates, judicious translation, or use of prior knowledge developed in the L1. In contrast, the less successful ELLs viewed reading in the L1 and the L2 as separate abilities and saw the L1 as a source of confusion. That the unsuccessful ELL readers/writers viewed L1 and L2 reading in these ways suggests that they had not developed an understanding of the commonalities in L1 and L2 literacy and, as a result, were unable to draw on similarities and connections between their two languages in the facility of L2 reading and writing. Jimenez (2000) suggested that unsuccessful ELL readers may need opportunities to learn about similarities between the writing systems of their two languages and to become more aware of bilingual strategies that would encourage them to draw on knowledge resources in the L1 to enhance their literacy abilities and development in the L2 (cf. Langer et al., 1990).

At the same time, research that has compared L2 English (i.e., Spanish ELL) with L1 English readers/writers has found that their strategies differ. More specifically, L1 English readers have been shown to use significantly more and different strategies than L2 English readers use in general (Padron, Knight & Waxman, 1986; Knight, Padron & Waxman, 1985). Bean, Levine & Graham (1982) and Miramontes (1987, 1990) found that ELLs pay closer attention to textual features than L1 English readers do. For example, Miramontes (1987, 1990) found that good Spanish readers paid significantly more attention to textual features such as graphic representation and grammatical structure in both L1 and L2 reading than good English readers did. Although these studies report no apparent loss in comprehension by ELLs, these researchers suggest that the strategies used by ELLs in their English reading are inappropriate because they are not the same as those employed by successful L1

English readers. However, the reading performance of the ELLs as reported in this study does not back up the claim. Rather, the pattern of strategies employed by successful ELL readers and writers may be more appropriately construed as an equally effective but different path to literacy development in comparison to that exhibited by L1 readers and writers.

An explanation of the differences between successful ELL and L1 readers can be offered in terms of the former's having access to a bilingual reservoir of literacy skills and strategies in contrast to the latter's monolingual pool of resources. Langer et al. (1990) and Jimenez et al. (1996) add support to this possibility by providing evidence that successful ELL readers maximize what they know by using their L1 to translate, elaborate, and hypothesize when making sense of English text. Edelsky and Jilbert (1985) have made a similar claim: "children's bilingualism increases their options for making meaning" (p. 69). Such a notion sees reading in an L2 as part of a larger, *bilingual* process. Such a process is also supported by the research discussed earlier with respect to L1 spelling patterns and cognate vocabulary in L2 literacy (cf. Nagy, McClure & Mir, 1997, for evidence concerning L1 syntactic that influences on determining unfamiliar word meanings in L2 reading). It follows that attempts to get ELLs to adopt strategies that are similar to those of monolingual English readers may be misguided because they fail to acknowledge and draw on the full capacities of bilingual learners, which necessarily encompass contributions and knowledge from two languages.

2.7. Third Language Acquisition (TLA)

As it usually happens in new areas of research, the boundaries of terminologies and areas of study surrounding the recent topic initially happen to be fuzzy and not well defined. Normally scholars apply previous investigations of related fields that can be adapted to the new one that might successfully equate into it, but in most cases, it might lead to overlap of concepts. Thus, the aim of the following sections is to point out some of the most recurring difficulties that scholars face in the literature of TLA field.

2.7.1. Towards a definition of Third Language Acquisition

The first problem that scholars detect when reviewing the literature on TLA is that there appears not to be a clear definition of TLA term. In addition, as Garcia-Mayo (2012) points out there has been some controversy in using L3 acquisition as a field of study. That is to say, that TLA was not even considered an area of study until a few years ago.

This is supported by the fact that TLA has historically been embraced by the second language acquisition phenomenon. Hence, for several decades there has not been a serious attempt to place third language acquisition as a separate area of study.

Due to the increasing attention on TLA, the need for a much more accurate term is required, though there seems to be no general agreement on most definitions of TLA and its area of study. As Cenoz (2003) states "[…] third language acquisition refers to the acquisition of a nonnative language by learners who have previously acquired or are acquiring two other languages. The acquisition of the first two languages can be simultaneous (as in early bilingualism) or consecutive" (Cenoz, 2003 cited in Garcia-Mayo,

2012:130). This means that an individual might have sequentially acquired two languages (the native language firstly, and then a second and third nonnative languages) or he/she might have learnt two languages at the same time as bilingual speakers, and later on an L3. Alternatively, De Angelis (2007: 11) proposes the term "*third or additional language acquisition* which refers to all languages beyond the L2 without giving preference to any particular language."

The whole field of language acquisition is young enough that researchers have not reached a convention that everyone adheres to in terms of labeling the languages being studied. First, mother, or native language (or languages if learned simultaneously from birth) are referred to as L1, the subsequent language (or languages if learned concurrently) as L2, and the following or target language(s) as L3 (regardless of how many languages may actually follow the second language learned). The term "heritage language" distinguishes itself from the first, mother, or native language as it is applied to the individual whose speaker community and educational institution is a majority language but who is in constant contact with a minority language (usually spoken in the home). Heritage speakers have varied levels of proficiency in the minority language.

Another interesting factor gleaned from the studies found in this review is that researchers evaluate different kinds of multilinguals. Cenoz's (2000) research identified four types of multilingualism in terms of order of acquisition: (1) the three language systems are acquired consecutively; or (2), the third language system is acquired after the simultaneous acquisition of the first two; or (3), the first language system is already acquired before the simultaneous acquisition of two other languages; or (4), there is simultaneous contact with

three language systems (Cenoz, 2000, p. 40-41). It may also be difficult to categorize certain multilinguals because it is difficult to determine when someone has stopped learning a language and because many multilinguals are still learning their second language while learning their third.

Finally, the most suitable notion of TLA seems to be the one by Hammarberg (2010), who suggests that the terms L1, L2, L3, L*n* are often taken as a chronological, non-interrupted acquisition, which does not essentially embody most realities, since multilingual acquisition may be simultaneous and intermittent, involving various language skills and proficiency levels. A *first language (L1)* is any language acquired during infancy (period from one month to twelve months of life), and a *second language (L2)*, any language encountered and acquired after infancy. "The term *third language (L3)* will be used for a nonnative language which is currently being used or acquired in a situation where the person already has knowledge of one or more L2s besides one or more L1s. An L3 is thus a special case of the wider category of L2, and not necessarily language number three in order of acquisition" (Hammarberg 2001 cited in Bardel and Falk 2010: 187).

2.7.2. Cross-linguistic Influence (CLI) in Third or Additional Language Acquisition

Cross-linguistic influence (CLI) is a term that was first coined in the mid-eighties by Sharwood-Smith and Kellerman (1986) so as to include all concepts concerning the phenomena of language influence "'transfer', 'interference', 'avoidance', 'borrowing' and L2 related aspects of language loss (Sharwood-Smith and Kellerman, 1986: 1)".

Nevertheless, CLI is barely a new area of investigation, and in many regards, it is still in its infancy (Cenoz, 2001). Historically, CLI research has focused mainly on second language acquisition- how the native language influences the second language, so the equation is L1→L2. Yet, when studying the acquisition of an L3 the equations can be multiplied, since it could not only be L1→L3, but also the variant L2→L3. The acquisition of an L3 can take as a source language the L1 or L2; by source language or language supplier, it is understood that a learner activates one of the previously acquired language systems he/she has access to and passes this knowledge to the language he/she is currently acquiring. This is why TLA is such an appealing topic of research for linguists and for CLI, which sees TLA as a potential source of data in order to advance in the study of language acquisition. Besides, some scholars (Van Hell and Dijkstra, 2002) have also discussed the possibilities of mutual influence between the L1←→L3 and L2←→L3.

Finally, CLI study has two kinds of impact on the target language: Positive and negative transfer. The first one occurs when some of the previous languages act positively in the target language, for instance, a person whose L1 is Spanish and is learning Italian will find that Italian as well as Spanish allows null subjects, so this learner will not have to learn this parameter, since he/she has already acquired it. Yet, CLI can also be dressed with negative transfer, for instance, Spanish and French are both Romance languages, so a Spanish learner might at first stage drop the subject when learning French, since Spanish is a null subject language, but French is not.

2.7.3. Multilingualism and Metalinguistic Awareness

Many linguists attribute multi-competence and multilingualism to metalinguistic awareness (Cook, 1995; Herdina & Jessner, 2002; McLaughlin & Nayak, 1989). Metalinguistic awareness is a subfield of metacognition and is concerned with activities of reflection on language and its use and a person's ability to intentionally monitor and plan her/his own method of linguistic processing in comprehension and production of any aspect of language. It is what one actually knows, or thinks s/he knows, about a language (Gass & Selinker, 2001). According to Cook (1995), multi-competence encompasses the different linguistic knowledge and different mindset that multilinguals have compared to monolinguals.

Several studies have reached the conclusion that proficiency in two or more languages can lead to higher levels of metalinguistic awareness, which aids the process of language acquisition (Ringbom, 1987; Cenoz & Valencia, 1994; Lasagabaster, 1998). According to McLaughlin and Nayak (1989), this is precisely what makes the difference between an expert and a novice learner. Bilingualism adds to a child's awareness of the languages she is learning to speak, and that is what makes her an "expert", or experienced learner, compared to a "novice" or monolingual learner. Following this path, it is logical to believe that learning a third language requires less effort for experts than novices because they have access to more strategies and techniques.

Bilingual and multilingual individuals also present a different type of linguistic competence as compared to that of monolinguals (Grosjean, 1989; Cook, 1995; Jessner, 1999). Much of the current research suggests that learning a third language is not the same as learning a

second language (Jessner, 1999; Cooke, 1995). Herdina and Jessner (2002) propose that the acquisition of more than two language systems leads to the development of new skills such as learning how to learn; it also facilitates subsequent additional language acquisition as learners use metalinguistic awareness to explore the cognitive and linguistic mechanisms underlying language.

2.8. Researches Conducted in Multilingual Learning Contexts

As noted above, in recent years some studies have examined the application of Cummins's hypotheses to trilingual learning contexts. A considerable number of these studies address the question of the: (I) impact of bilingualism on third language acquisition, (II) relationships between dimensions of academic language proficiency in bilinguals two languages, (III) effects of bilingualism on cross-linguistic transfer of academic language aspects, and (IV) factors that influences cross-language transfer. Findings from these works are presented here below.

2.8.1. The Effects of Bilingualism on Additional Language Acquisition

Research carried out in the Basque country that focused on the learning of English as L3 within various models of Basque-Spanish bilingual programs indicates that bilingualism has a positive effect on third language acquisition despite the typological distance between Basque (L1) and Spanish (L2) (e.g. Cenoz, 2003, 2009; Cenoz & Gorter, 2011; Cenoz & Valencia, 1994; Errasti, 2003; Lasagabaster, 1998, 2000; Mufioz, 2000; Sagasta, 2003). Specifically, these studies show that students enrolled in bilingual and immersion programs develop additive bilingualism through schooling, and those students who

develop a high level of competence in two languages are the ones who most benefit from their bilingualism.

The advantage of bilingual learners in acquiring aL3 has been attributed primarily to the higher degree of metalinguistic awareness they develop compared to those who study only two languages (Cenoz, 2003). For instance, Errasti (2003) investigated the influence of bilingualism on proficiency in the writing of English as an L3aswellasthe relationship across Basque, Spanish, and English writing skills. The study participants were155 secondary students aged 12-16 enrolled in a Basque state school. The participants completed a writing task in Basque (L1), Spanish (L2), and English (L3). The results indicated that these students made use of the skills developed through instruction in Basque when writing in Spanish and that writing ability in the three languages was interrelated.

Furthermore, those students who developed the highest degree of bilingual competence in Basque and Spanish also achieved the best scores in English. Further evidence for cross lingual transfer in this context has recently been reported by Cenoz and Gorter (2011), who investigated the development of writing skills in Basque, Spanish, and English among 165 secondary school students. The results indicated significant correlations across languages with respect to most of the evaluation dimensions used by the researchers (content, structure, vocabulary, grammar, and mechanics) as well as cross-lingual transfer in multiple directions (e.g., not only from L1 to L2).

Similar results concerning the positive edge of bilingualism have been reported in a number of Canadian educational contexts. For instance, Mady (2014) investigated whether

proficiency in previously known languages will have an impact on 164 Canadian students' proficiency level in French, taking into account societal and educational factors. The author compared the results of a four-skill proficiency test in French among three groups of sixth graders in English-dominant Canada: monolingual English-speaking students, bilingual students, and immigrant bilingual students. Results showed that immigrant bilingual students scored relatively higher on all tests of proficiency. Similarly, Berube and Marinova-Todd (2012) examined the extent to which the development of L2 and L3 literacy skills varied primarily as a function of orthographic similarities with the L1among 90 fourth graders enrolled in an early immersion program. The results indicated that students who was literate in an alphabetic L 1demonstratedadvantages in L2 and L3 reading comprehension, thus supporting evidence from two earlier studies conducted in Canada that will have indicated that the development of literacy in L1will have a positive influence on additional language learning (Bild & Swain, 1989; Swain et al., 1990).

The positive impact of prior linguistic knowledge on additional language acquisition is further demonstrated in research in other educational frameworks. For instance, Otwinowsky-Kastelanic (2011) compared awareness of cognate vocabulary among three groups of bilingual Polish learners of English with different levels of proficiency: elementary (n =95), intermediate (n =134), advanced (n =200), and one group of multilingual students (n = 83) at an advanced level. Quantitative and qualitative analyses of the results of the questionnaire completed by the participants showed a positive relationship between level of English and awareness of cognates. Moreover, of the four groups examined, only multilingual students demonstrated awareness of cognates and consciously made use of them as a learning strategy.

Similarly, Modirkhamene (2006) examined the effects of bilingualism (Turkish-Persian) on learning English (L3), focusing on reading comprehension proficiency achievement. The study involved a comparison of 56 Turkish-Persian bilingual" university students with their 42Persian monolingual peers in terms of their performance on the First Certificate of English tests of reading comprehension. Independent t-tests indicated that the bilinguals performed significantly better than monolinguals.

Similar results was also obtained by Schwartz et al. (2008) who compared the influence of biliterate (Russian and Hebrew) bilingualism versus monoliterate (Hebrew) bilingualism on the development of literary skills in English as L3. Hauptman, Mansur, and Tal (2008) examined the impact of a trilingual teaching model where identical strategies of reading comprehension and writing skills was taught simultaneously to 10th grade Bedouin students by the Arabic (L1), Hebrew (L2), and English (L3) teachers. The results showed that the program will have significantly contributed to improving the overall level of achievement by the students in all three languages (e.g., by an average of 15.32% in Arabic, 6.95% in Hebrew, and 10.36% in English). The results also indicated an improvement in the specific skills tested in the areas of reading comprehension and writing composition in the respective languages.

2.9. Summary

Clearly, the researches reviewed so far support an additive effect of L1 literacy on L2 literacy development, yet it shows an existing research gap whether such additive effect is apparent in tri/multilingual literacy learning and development; hence, it provides the basis and impetus for future research in this area, especially one that investigates learners'

parallel abilities and development in the three languages to support the construct of the linguistic interdependence and common underlying proficiency.

However, most works thus so far has primarily addressed the influence of bilingualism on general proficiency in third language. A very limited number of researches are available on literacy-related dimensions of academic language proficiency. Besides, there is virtually scanty works done on the bidirectional developmental interplays between literacy skills across three languages, particularly in educational contexts involving linguistic minority students who are being taught three languages: a mother tongue, a regional/federal working language, and a foreign/third language.

Therefore, it is this notable gap, which motivates the researcher to conduct this study in an effort to narrow the gap and to contribute to the body of literature on both multilingual language learning and literacy acquisition of Boro/Shinasha ethnic children in particular and on the conceptual framework of this study in general.

Chapter Three

3. Research Methodology

3.1. Introduction

This chapter deals with the methodology used in this study. It includes the research design and approach, the context where the study was undertaken, description of the respondents of the study selected by the researcher, tools and methods of data collection, variables studied, pilot study and the statistical techniques used for analysis and interpretation of the data.

3.2. Approach to the Study

This study adopted a descriptive research design along with a quantitative approach to obtain and analyze data, for such research design "is concerned with current trends and practices, and attempts to describe the status of the phenomenon under investigation" (Sharma, 2000: p.149). According to Sharma (2000) in a descriptive research design, "we are concerned with the conditions or relationships that exist, practices that prevail, beliefs, points of view or attitudes that are held, processes that are ongoing, influences that are being felt, and trends that are developing" (p. 147). Therefore, it was an apt research design by which this study had examined the cross-linguistics interdependence of academic reading and writing skills across the three languages in Bullen and Dibate Woredas, Metekel Zone.

3.3. The study Design

This study aimed to investigate whether students' Borna (L1) literacy skills could significantly predict the corresponding literacy skills across their Amharic (L2) and EFL (L3), and vice versa. Besides, it also looks into whether the developmental influences of the first language on the second and foreign languages could significantly be contingent on other variables such as amount of exposure, sex, and linguistic repertoire designated as initial language of instructions, gender, knowledge of more L2s. The rationale behind this is that first, learning through and in a first language is more advantageous than learning in a second language; second, language acquisition differs across genders; and third, as Nagy and Hancin-Bhatt (1993) say the ability to hear components of spoken language may be highly correlated between languages. Therefore, a regression design was employed using students' L2 and L3 literacy skills as dependent variables and students' L1 literacy skills as independent variables and the other way around.

3.4. Context of the Research

The present study was carried out in four primary schools of Bullen and Debate Woredas, Metekel Zone, Benishangul-Gumuz National Regional State, Ethiopia. The majority of students in this district are naturally bilinguals and/or multilinguals; that is, besides Borna, they can speak either one or more of these languages: Amharic, Affan Oromo, Gumuz and/or Awingi. The district provides mother tongue based and second language based lower primary education for students whose first language is Borna. In other words, the district has two types of lower primary school programs for Boro/Shinasha children:

Borna-based program and Amharic-based program. This variation is due to sociolinguistic conditions of the community and sociopolitical decisions.

In the former program, the students are taught through their mother tongue (i.e. through Borna) until grade four. English, which is typically a foreign language in Ethiopia, is introduced as a subject starting from grade one while starting from grade three, Amharic, which is the working language of the federal and some regional governments and a lingua franca for interethnic communications, is taught as a subject. Starting from grade five, the students are taught through English while their mother tongue (Borna) and their second language (Amharic) are taught as a subject respectively. In the later program, the students with the same ethnic background are taught through their second language (i.e. Amharic) until grade four. Borna and English are taught as subjects starting from grade one.

Furthermore, unlike Borna and English, students in the former school program are introduced to Amharic from grade three while those students in the latter school program have the advantage of learning another second language- Gumuz language, especially when the school is proximate to villages of Boro and Gumuz community. Eventually from fifth grade onward, children from these schools are taught through English, which is a foreign language for both the students and the teachers.

In sum, the district was chosen because of its relatively recent experiences of running such educational program and of easier access to heterogeneous students who are with various language backgrounds and who had been enrolled in two forms of language-in-education programs.

3.5. Target Population of the Study

The target population of this study was Borna-speaking primary school children who are taught through two different medium of instruction: Borna-based medium of instruction through the course of students' lower primary school grades and Amharic-based medium of instruction through the course of their lower primary school grades in Bullen and Debate Woredas, Metekel Zone, Benishangul Gumuz National Regional State. This was important to further to compare the students' acquisition of academic language abilities in different school context; where their mother tongue is used as school language and as a subject respectively while they were from the same ethnic and linguistic background.

3.6. Sample Size and Sampling Techniques

3.6.1. Sample Schools

Four primary schools were selected in Bullen and Debati Woredas. In other words, the first two primary school (Schools A & C) where Borna is used as medium of instruction in lower primary grades and the second two schools (Schools B and D) where Amharic is used as medium of instruction in lower primary grades were selected through purposive sampling method because these were the schools where two different lower primary school language-in-education programs are being used in educating the Boro children. Hence, the researcher had access to two groups of student participants from these schools.

3.6.2. Sample Student Participants

The total number of the population was 2436; from which 1182 students were females, and 1248 students were males; The total population in each school was about 610 students

from each school, which was around 150 students were in each grades, from fifth to eighth grades. From this population, one thousand two hundred eighty second cycle primary school students were selected through simple random sampling method. As such, a total of 1400 sample size was sought but 1280 participants were maintained while 120 participants were excluded from the study, because those participants had submitted either incomplete tests or the participant's scores on the tests were outliers- very low scores or very high scores- so did not fit in the range of scores of the majority participants. This was done in order to assure the precision of the data analysis.

These participant-students were selected via simple random sampling techniques, for using such sampling method would give equal chance for the subjects to be selected, and in terms of achievement and other backgrounds, it would provide as heterogeneous participants for this study as possible. The reason to determine the sample size of student-participants is that the findings from this study would be generalized to the wider population.

3.7. Data Collection Methods

3.7.1. Survey Questionnaire

A survey questionnaire that solicited participants' personal information such as age, gender, and linguistic repertoire was designed and administered to the participants. This was attached with the test booklet, particularly the questionnaire items appear on the very first pages of the tests

3.7.2. Academic Language Proficiency Tests

3.7.2.1. Reading Comprehension and Sentence Writing Skill Tests

Sample participants were given reading comprehension and sentence writing skills tests in Borna, Amharic, and English. The tests in each of the languages had a parallel version of contents of one another. The reading comprehension tests were used to explore a learner's general reading comprehension skills. In the reading comprehension part, students read a passage and then answer questions about the passage, with the passages varying in length. The tests have ten multiple-choice questions each followed by four alternatives from which a correct answer has to be chosen. In parallel vain, the sentence writing skill tests were used to examine learner's ability to sequence the order of a story from jumbled sentences and ability to write simple sentences and to conform to writing conventions such as capitalization, agreement, spelling, and punctuations that are used as scoring rubrics.

3.7.2.2. Knowledge of Grammar and Vocabulary Tests

As contributing variables, students were given grammar and vocabulary tests. The grammar tests aimed at assessing students' knowledge of grammar. Each test consisted of ten sentences followed by four alternatives from which students have to choose the correct answer. The vocabulary test was intended to test for meaning. Similarly, each test consisted of ten sentences with italicized, bold, and/or underlined words followed by four alternatives from which students have to choose the correct answer based upon the context of the sentences. The following section provides information about the steps and process of test developments in general.

3.8. Test Development Procedures

The purpose of this study was not to place students in different levels of language proficiencies- beginner, intermediate, or advanced. Instead, it was to assess the relationships between literacy skills through what students have learned when it comes to acquiring literacy skills in three different languages. To do so, the researcher had used teacher-developed tests, as there are neither standardized tests nor testing agencies in Ethiopia that design and develop standardized tests from which the researcher would have used one. Instead, the FDRE MoE has delegated the responsibility of designing, developing, and administrating primary school examinations to regional education bureaus. Due to this, the researcher preferred to use teacher-made tests based on the purpose of this research and in line with Benishangul-Gumuz Regional Education Bureau's student assessment and evaluation guidelines and expected competence of a learner in a given grade level.

3.9. Design and Development of the Tests

In this inquiry, quantitative method was used, and both validity and reliability had to be established. The survey form was adapted from a language survey that was designed by authorities of regional education bureau for the purposes of assisting researchers in collecting data from schools for a language policy assignment. The survey questionnaires for students and/or teachers could be adapted from various language use and behavior sources (Cohen, 1975; Foley, 1981; Cummins, 1984).

The form consisted of two items that asked for information from the research participants about personal backgrounds, such as gender and additional second languages the

participants know. The main purpose of the tests was to measure the children's academic language and literacy skills in the three languages: Borna, Amharic, and EFL. As any other tests, language proficiency tests had to be validated in terms of their content and construct. Borna, Amharic, and EFL language assessment and examination experts who were working in the Region's education bureau with the researcher, too, overlook the development of the tests when experienced language teachers of the respective languages (subjects) were writing the test items for each skill based on each grade syllabus and expected competences at a given grade level. After the test writers completed the task of writing the items, the tests were presented to the testing experts in the Department of Regional Assessment and Examination. The responsibility of this team was to examine whether the items contained in each tests were appropriate and representative. Based on the recommendations, some modifications were made, such as clarity of instructions and length of a question and its choices (alternatives) were reworded.

Moreover, the answer keys for all test items were prepared, and a student's answer to each of the items in each of the tests was scored against the keys. As such, whether a student has gotten an item correctly or not was determined by whether he/she had given an answer or had chosen the correct alternative that is the same as the answer or letter designated in the answer keys of that particular test.

Finally, during the pilot testing, the psychometric properties of the instruments, such as Cronbach's reliability statistics, item difficulty index, and item discrimination index were conducted to maintain the validity and reliability of the instruments. All of the results had shown the appropriateness of the instruments for the study. In other words, the Cronbach's

reliability scale that is the coefficient alpha was ≥ .8, which meant the test items were reliable and internally consistent. The P-values for the item difficulty indices (DI) were also between 0.45 and 0.61 that is the test items had the p-values that ranged between 0.4 (40%) and 0.6 (60%) (not too easy nor too difficult, but moderate difficulty level), and the point biserial values for discrimination indexes (D) were between +0.48 and +0.73. This tells us the D values were all positive, which meant more students who did well on the test overall also answered the item correctly. The higher the D value, the better the item discriminated between the higher and lower achievers.

According to Brown (1996), ideal items of a norm-referenced language test should have an average IF (Item Facility or Item Difficulty) of 0.50, and be in the range of 0.3 to 0.7 to be considered acceptable. Ebel's guidelines (1979) for item discrimination consider an ID of greater than 0.2 to be satisfactory. These are the criteria that the researcher generally abide to when piloting the tests items first confirming that these items are devoid of redundancy.

3.10. Data Collection Procedures

In this inquiry, questionnaire and tests were used to collect data. The initial stages of data collection were to orient teachers and students on the main purpose of the study and gather the participant's personal information. Questionnaires were distributed to student participants as soon as they had volunteered to participate in the research project. The objective of using the survey questionnaire was to give the researcher information and knowledge about personal backgrounds like gender and additional second languages the

participants know. Then, Borna tests were administrated followed by Amharic and EFL tests and all the materials were retained with the help of the teachers.

3.11. Data Analysis Methods

The Statistical Package for the Social Sciences (SPSS) was used to conduct the Pearson Product Moment Correlations, simple linear regressions, hierarchical multiple regression, independent t-test, and GLM Univariate ANOVAs. First, the reading tests were scored according to the answer key whereas scores from the writing tests were graded according to the scoring rubrics. The raw scores were multiplied by ten points possible to obtain a percentage. After the percentages were determined, the Pearson's r was calculated to determine the strength of the bidirectional relationships between reading and writing skills across the three languages. Then, a simple linear regression analysis was performed to determine the predictive relationship between a response variable (L1, L2, and L3 reading and writing skills respectively) and an independent variable (L1, L2, and L3 reading and writing skills respectively) that was used to predict the developmental influence between literacy skills on the corresponding skills in each of the languages respectively. Hence, the explanatory variables in one language that were used to predict the response variables would be used as the response variables and the other way around.

Besides, random factors (grammar and vocabulary tests scores of each language, gender, knowledge of additional indigenous second language, and lower grades MoI) were added where appropriate, moving the analysis from simple linear regression to hierarchical regression and Analyses of Variance (ANOVA). The hierarchical regression analysis was employed to find out variations that were not accounted or explained by the variables in

the simple linear regression model (reading and writing skills) but that might be accounted by other variables, like grammar and vocabulary skills. Independent t-test was used to see whether Borna skills show statistically significantly different predictive power between Amharic and EFL skills. ANOVA, on the other hand, was used to find out the interaction effects of gender, knowledge of additional indigenous second language, and lower grades MoI with Borna language on the developmental interdependence of literacy skills across the Amharic and English languages. As show above, the linear regression equation used in this study had been laid out and the variables that were considered had been discussed.

To summarize, the data was analyzed by statistical means. First, descriptive statistics such as mean, standard deviations, and percentages were used to summarize the data. Second, a Pearson's product moment correlation coefficient test was used to determine the strength of the relationship between literacy skills across the languages. Third, simple regression and hierarchical multiple linear regression analyses were employed to determine which factors from Borna reading and writing skills (Literacy skills) and Grammar and vocabulary (Language components) better predicted the reading and writing skills of Amharic and EFL respectively. Finally, two-way Univariate Analyses of Variance (ANOVA) was employed to determine the main and/or interaction effects between the factors.

This explains the data analysis methods that were used in the quantitative examination of the extent to which different language and background variables contributed in explaining the developmental influences of the acquisitions of academic/cognitive language proficiencies across the three languages.

However, prior to conducting the regression analysis, the following procedures were conducted to check for whether assumptions were met and to identify collinearity (i.e. whether two independent variables were correlated so highly that they were likely measures of the same effect, which the rule of thumb is r > .8) among independent variables. The data was also checked for outliers- extreme values that would be influential, so 120 participants' scores- lower extreme values below 40 and higher extreme values above 80- were removed from the initial stage of data screening in order for the data to meet hierarchical multiple regression analysis assumptions and for the precision of the data analysis outputs.

3.12. Ethical considerations

Through the process of conducting this research and collecting data, the following basic ethical principles were followed.

1. **Consent**- Before collecting the data the purpose of the project has been explained to the respective principals, teachers, and students. The students had also been informed that he/she might withdraw his/her consents and discontinue his/her participation at any time for any reason. Hence, each participant was aware of that his/her participation in this project was of his/her own accord.
2. **Confidentiality**- The participants were assured that the information taken from them were used for the research purpose and would not be disclosed to anyone apart from the researcher and his supervisor unless required by the prospective board of examiners at AAU.

Chapter Four

4. Data Analysis and Results Presentation

4.1. Introduction

This study examines in detail the developmental interdependence of academic reading and writing Skills across Borna, Amharic, and EFL- that are in-primary-school-contact situation in Bullen and Debate Woredas of Metekel Zone. This chapter devoted to setting out the results of the statistical analysis under the three themes: (i) the correlation between reading and writing skills across Borna, Amharic, and EFL, (ii) the predictive relationships between reading skill and writing skill across those languages, and (iii) the effect of demography and linguistics variables on the cross-language interdependence of literacy skills. The data was analyzed using SPSS version 20 to provide statistical results, which help to explain the relationships between the variables examined in this study. It should be noted at the outset of this study that the research participants of 1280 can be considered sufficiently large for the responses to have statistical meaning and validity under the analysis carried out in this chapter in order for the researcher to "… generalize the findings to the larger population" (Malhorta, 2009; Saunders et al, 2009).

Besides, since the reading and writing skills tests might result in either known and unknown types of errors, triangulation might be important in order for the researcher to obtain valid and reliable data, by using grammar and vocabulary-in-context tests and other factors in combination with the two measurements (reading comprehension and writing performance tests). In other words, the researcher made an effort to include more independent variables in the analysis to explain variances in the dependent variable that

the other independent variable might not be able to do. Hence, it was assumed that all the independent variables included in the analysis, in combination, would predict the dependent variable better than any one of the independent variables alone. Finally, the data analysis presented here involves various statistical analyses outputs: frequencies, descriptive, Pearson's correlations, simple linear regression, and hierarchical multiple regressions along with analysis of variance accordingly. In this chapter, the results of the analyses were presented in terms of the research questions and their corresponding hypotheses. Then findings from this study will be discussed in the next chapter.

4.2. Correlations across Borna, Amharic, and EFL Skills

Q1. Is there correlation between language and literacy skills across Borna, Amharic, and EFL?

4.2.1. Correlations across Borna, Amharic, and EFL

Table 1. Correlations between Borna and Amharic Literacy Skills

		AMHARIC_ READING_ TEST_SCORES	AMHARIC_ GRAMMAR_ TEST_SCORES	AMHARIC_ VOCABULARY _TEST_SCORES	AMHARIC_ WRITING_ TEST_SCORES
BORNA_READING_TEST_SCORES	Pearson Correlation	.669**	.320**	.176**	.563**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
BORNA_GRAMMAR_ TEST_SCORES	Pearson Correlation	.507**	.087**	.057*	.531**
	Sig. (2-tailed)	.000	.002	.041	.000
	N	1280	1280	1280	1280
BORNA_VOCABULARY_TEST_SCORES	Pearson Correlation	.573**	.222**	.133**	.388**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
BORNA_WRITING_TEST_SCORES	Pearson Correlation	.640**	.133**	.193**	.420**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280

A Pearson product-moment correlation coefficient was performed to examine the association between Borna and Amharic language and literacy skills. The results showed positive correlations among the variables. First, there was a positive correlation between Borna reading skill and Amharic reading, grammar, vocabulary, and writing skills, r = .669, p = .000, n = 1280;r = .320, p = .000, n = 1280; r = .176, p = .000, n = 1280; and r = .563, p = .000, n = 1280 respectively. There was also a positive correlation between Borna grammar skill and Amharic reading, grammar, vocabulary, and writing skills, r = .507, p = .000, n = 1280; r = .087, p = .002, n = 1280; r = .057, p = .041, n = 1280; and r = .531, p = .000, n = 1280 respectively.

Similarly, there was a positive correlation between Borna vocabulary skill and Amharic reading, grammar, vocabulary, and writing skills, r = .573, p = .000, n = 1280; r = .222, p = .000, n = 1280; r = .133, p = .000, n = 1280; and r = .388, p = .000, n = 1280 respectively. Furthermore, a positive correlation was observed between Borna writing skill and Amharic reading, grammar, vocabulary, and writing skills, r = .640, p = .000, n = 1280; r = .133, p = .000, n = 1280; r = .193, p = .000, n = 1280; and r = .420, p = .000, n = 1280 respectively.

Table 2. Correlations between Borna and EFL Literacy Skills

		EFL_READING_TEST_SCORES	EFL_GRAMMAR_TEST_SCORES	EFL_VOCABULARY_TEST_SCORES	EFL_WRITING_TEST_SCORES
BORNA_READING_TEST_SCORES	Pearson Correlation	.720**	.952**	.807**	.653**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
BORNA_GRAMMAR_TEST_SCORES	Pearson Correlation	.528**	.752**	.857**	.647**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
BORNA_VOCABULARY_TEST_SCORES	Pearson Correlation	.509**	.775**	.722**	.841**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
BORNA_WRITING_TEST_SCORES	Pearson Correlation	.873**	.588**	.586**	.432**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280

A Pearson product-moment correlation coefficient was computed to assess the association between Borna and EFL language and literacy skills. The result showed positive correlations among the variables. First, there was a positive correlation between Borna reading skill and EFL reading, grammar, vocabulary, and writing skills, r = .720, p = .000, n = 1280; r = .952, p = .000, n = 1280; r = .807, p = .000, n = 1280; and r = .653, p = .000, n = 1280 respectively. There was also a positive correlation between Borna grammar skill and EFL reading, grammar, vocabulary, and writing skills, r = .528, p = .000, n = 1280; r = .752, p = .002, n = 1280; r = .857, p = .041, n = 1280; and r = .647, p = .000, n = 1280 respectively.

Similarly, there was a positive correlation between Borna vocabulary skill and EFL reading, grammar, vocabulary, and writing skills, r = .873, p = .000, n = 1280; r = .588, p = .000, n = 1280; r = .722, p = .000, n = 1280; and r = .841, p = .000, n = 1280 respectively. Furthermore, a positive correlation was observed between Borna writing skill and EFL reading, grammar, vocabulary, and writing skills, r = .509, p = .000, n = 1280; r = .772, p = .000, n = 1280; r = .586, p = .000, n = 1280; and r = .432, p = .000, n = 1280 respectively.

Table 3. Correlations Between Amharic and EFL Literacy Skills

		EFL_READING_TEST_SCORES	EFL_GRAMMAR_TEST_SCORES	EFL_VOCABULARY_TEST_SCORES	EFL_WRITING_TEST_SCORES
AMHARIC_READING_TEST_SCORES	Pearson Correlation	.681**	.712**	.599**	.419**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
AMHARIC_GRAMMAR_TEST_SCORES	Pearson Correlation	.266**	.269**	.145**	.146**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
AMHARIC_VOCABULARY_TEST_SCORES	Pearson Correlation	.189**	.181**	.107**	.099**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280
AMHARIC_WRITING_TEST_SCORES	Pearson Correlation	.415**	.581**	.551**	.389**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	1280	1280	1280	1280

A Pearson product-moment correlation coefficient was run to calculate the association between Amharic and EFL language and literacy skills. The result showed positive correlations among the variables. First, there was a positive correlation between Amharic reading skill and EFL reading, grammar, vocabulary, and writing skills, r = .681, p = .000, n = 1280; r = .712, p = .000, n = 1280; r = .599, p = .000, n = 1280; and r = .419, p = .000, n = 1280 respectively. There was also a positive correlation between Amharic grammar skill and EFL reading, grammar, vocabulary, and writing skills, r = .266, p = .000, n = 1280; r = .269, p = .002, n = 1280; r = .145, p = .041, n = 1280; and r = .146, p = .000, n = 1280 respectively.

Similarly, there was a positive correlation between Amharic vocabulary skill and EFL reading, grammar, vocabulary, and writing skills, r = .189, p = .000, n = 1280; r = .181, p = .000, n = 1280; r = .107, p = .000, n = 1280; and r = .099, p = .000, n = 1280 respectively. Furthermore, a positive correlation was observed between Amharic writing skill and EFL reading, grammar, vocabulary, and writing skills, r = .415, p = .000, n = 1280; r = .581, p = .000, n = 1280; r = .551, p = .000, n = 1280; and r = .389, p = .000, n = 1280 respectively.

4.3. Predictive Interdependence across Borna, Amharic, and EFL Literacy Skills

Q2. Is there predictive relationship between literacy skills (reading and writing) across Borna, Amharic, and EFL?

4.3.1. Predictive Relationships across Borna, Amharic, and EFL Literacy Skills

4.3.1.1. Borna Reading Predicting Amharic Reading Skills

A simple linear regression analysis was performed to determine whether students' performance on mother tongue academic reading skill test (i.e. independent variable) could predict their performance on second language academic reading skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 4. Borna Reading Predicting Amharic Reading Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.669[a]	0.448	0.447	9.997

a. Predictors: (Constant), BORNA_READING_TEST_SCORES

b. Dependent Variable: AMHARIC_READING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta	t		Lower Bound	Upper Bound
1	(Constant)	19.612	1.281		15.31	.000	17.1	22.13
	BORNA_READING_TEST_SCORES	0.671	0.021	0.669	32.17	.000	0.630	0.712

a. Dependent Variable: AMHARIC_READING_TEST_SCORES

The outcomes pointed out that a considerably large proportion of the total variation in Amharic reading skill test scores was associated with variation in Borna reading skill test score, r = .669. This means that students' scores on their mother tongue academic reading skill test was a good predictor of their performance on second language academic reading

skill test, r^2 = .448, F(1,035.173, df = 1, 1278), p < .001. In fact, the variation accounted by native language reading skill was fair enough (i.e. 44.8%), and the Pearson correlation (r = .669) showed that there was a strong, positive association between Borna reading skill and Amharic reading skill.

Further, the analysis showed the following results: (a). the unstandardized slope, (*b = .671*) and the standardized slope, (Beta = .699) were statistically significantly different from zero, (t = 32.174, df = 1278, p < .001). Hence, for each point increase in native language academic reading skill test performance, second language academic reading skill test score increased approximately by .7 point; (b) the confidence intervals for the unstandardized slope did not have a value of zero, (LCI = .630, UCI = .712), which further implied that Borna academic reading skill was statistically significant predictor of Amharic academic reading skill; (c) the intercept- the average Amharic academic reading test score when Borna academic reading skill test score equaled to zero- was (a = 19.612); and (d) the multiple R, (r^2 = .448) explained that 44.8% of students' performance on Amharic academic reading skill test was predicted by their performance on Borna academic reading skill test.

4.3.1.2. Borna Writing Predicting and Amharic Writing Skills

A simple linear regression analysis was performed to determine whether students' performance on mother tongue academic writing skill test (i.e. independent variable) could predict their performance on second language academic writing skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 5. Borna Writing Predicting and Amharic Writing Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.420[a]	.176	.176	12.068

a. Predictors: (Constant), BORNA_WRITING_TEST_SCORES
b. Dependent Variable: AMHARIC_WRITING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	33.642	1.534		21.937	.000	30.634	36.651
	BORNA_WRITING_TEST_SCORES	.416	.025	.420	16.548	.000	.367	.466

a. Dependent Variable: AMHARIC_WRITING_TEST_SCORES

The analysis indicated that a medium share of the total variation in Amharic academic writing skill test scores was linked to variation in Borna academic writing skill test score, r = .420. Moreover, students' scores on their mother tongue academic writing skill test was a predictor of their performance on second language academic writing skill test scores, r^2 = .176, F(273.83, df = 1, 278), p < .001. However, the effect was so small (i.e. 17.6%), yet the Pearson correlation (r = .420) indicated that there was a positive moderate correlation between the predictor and outcome variables.

Overall, the analysis pointed out the following outcomes: (a). the unstandardized slope, (*b = .42*) and the standardized slope, (Beta = .420) were statistically significantly different from zero, (t = 16.55, df = 1278, p < .001). Therefore, for each point increase in native language

academic writing test performance, second language academic writing skill test score increased nearly by .42 point10; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .367, UCI = .466), which further suggested that Borna academic writing skill was statistically significant predictor of Amharic academic writing skill; (c) the intercept- the average Amharic academic writing test score when Borna academic writing skill test score equaled to zero- was (a = 33.64); and (d) the multiple R, (r^2 = .176) explained that approximately 18% of students' performance on Amharic academic writing skill test was predicted by their performance on Borna academic writing skill test.

4.3.1.3. Borna Reading Predicting and EFL Reading Skills

A simple linear regression analysis was performed to determine whether students' performance on mother tongue academic reading skill test (i.e. independent variable) could predict their performance on foreign language academic reading skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 6. Borna Reading Predicting and EFL Reading Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.720[a]	.518	.518	9.358

a. Predictors: (Constant), BORNA_READING_TEST_SCORES
b. Dependent Variable: EFL_READING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	16.269	1.199		13.570	.000	13.917	18.622
	BORNA_READING_TEST_SCORES	.724	.020	.720	37.088	.000	.686	.763

a. Dependent Variable: EFL_READING_TEST_SCORES

The statistical assessment above pointed out that a significantly larger proportion of the total variation in EFL academic reading skill test scores was associated with variation in Borna academic reading skill test score, r= .724. Moreover, students' scores on their mother tongue academic reading skill test was a good predictor of their performance on foreign language academic reading skill test scores, r^2 = .518, F(1, 375.53, df = 1, 278), p < .001. The influence here was large (i.e. 51.8%), and the Pearson correlation (r = .720) showed that there was a strong positive correlation between the predictor and outcome variables.

Specifically, the analysis revealed the following findings: (a). the unstandardized slope, (*b = .724*) and the standardized slope, (Beta = .720) were statistically significantly different from zero, (t = 37.09, df = 1, 278, p < .001). Therefore, for each point increase in native language academic reading skill test scores, foreign language academic reading skill test scores increased almost by a point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .686, UCI = .763), which further indicated that Borna academic reading skill was statistically significant predictor of English academic reading skill; (c) the intercept- the average English academic reading test score when Borna academic reading skill test score equaled to zero- was (a = 16.3); and (d) the

multiple R, (r^2 = .518) explained that nearly 52% of students' performance on EFL academic reading skill test was predicted by their performance on Borna academic reading skill test.

4.3.1.4. Borna Writing Predicting and EFL Writing Skills

A simple linear regression analysis was conducted to determine whether students' performance on mother tongue academic writing skill test (i.e. independent variable) could predict their performance on foreign language academic writing skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 7. Borna Writing Predicting and EFL Writing Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.432[a]	.187	.186	11.918

a. Predictors: (Constant), BORNA_WRITING_TEST_SCORES

b. Dependent Variable: EFL_WRITING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	34.356	1.514		22.686	.000	31.385	37.327
	BORNA_WRITING_TEST_SCORES	.425	.025	.432	17.120	.000	.377	.474

a. Dependent Variable: EFL_WRITING_TEST_SCORES

The outcomes pointed out that a medium proportion of the total variation in EFL academic writing skill test scores was associated with variation in Borna academic writing skill test score, r= .432. Additionally, students' scores on their mother tongue academic writing skill test was a predictor of their performance on foreign language academic writing skill test, r^2 = .187, F(293.103, df = 1, 1278), p < .001. The influence was small (i.e. 18.7%), and the Pearson correlation (r = .432) showed a moderate positive correlation between the predictor and outcome variables.

In summary, the result displayed the following findings: (a). the unstandardized slope, (*b = .425*) and the standardized slope, (Beta = .432) were statistically significantly different from zero, (t = 17.12, df = 1278, p < .001). Accordingly, for each point increase in native language academic writing skill test performance, foreign language academic writing skill test score increased by .43 point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .377, UCI = .474), so Borna academic writing skill was statistically significant predictor of EFL academic writing skill; (c) the intercept- the average EFL academic writing test score when Borna academic writing skill test score equaled to zero- was (a = 34.36); and (d) the multiple R, (r^2 = .187) explained that nearly 19% of students' performance on EFL academic writing skill test was predicted by their performance on Borna academic writing skill test.

4.3.1.5. Amharic Reading Predicting and Borna Reading Skills

A simple linear regression analysis was implemented to determine whether students' performance on second language academic reading skill test (i.e. independent variable) could predict their performance on native language academic reading skill test (i.e.

dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 8. Amharic Reading Predicting and Borna Reading Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.669[a]	.448	.447	9.960

a. Predictors: (Constant), AMHARIC_READING_TEST_SCORES
b. Dependent Variable: BORNA_READING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	20.021	1.270		15.761	.000	17.529	22.513
	AMHARIC_READING_TEST_SCORES	.667	.021	.669	32.174	.000	.626	.707

a. Dependent Variable: BORNA_READING_TEST_SCORES

The analysis showed that a considerably large proportion of the total variation in Borna academic reading skill test scores was associated with variation in Amharic academic reading skill test score, r= .669. Further, students' scores on their second language academic reading skill test was a predictor of their performance on first language academic reading skill test, r^2 = .448, F(1035.173, df = 1, 1278), p < .001. In fact, the effect was medium (i.e. 44.8%), and the Pearson correlation (r = .669) revealed that there was a positive strong correlation between the predictor and outcome variables.

In brief, the outputs above pointed to the following findings: (a). the unstandardized slope, (*b = .667*) and the standardized slope, (Beta = .669) were statistically significantly different from zero, (t = 32.174, df = 1, 1278, p < .001). Therefore, for each point increase in second

language academic reading skill test performance, vernacular language academic reading skill test score increased approximately by a point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .626, UCI = .707), which was evident that Amharic academic reading skill was statistically significant predictor of Borna academic reading skill; (c) the intercept- the average Borna academic reading test score when Amharic academic reading skill test score equaled to zero- was (a = 20.021); and (d) the multiple R, (r^2 = .448) explained that almost 45% of students' performance on Borna academic reading skill test was predicted by their performance on Amharic academic reading skill test.

4.3.1.6. Amharic Writing Predicting Borna Writing Skills

A simple linear regression analysis was run to determine whether students' performance on second language academic writing skill test (i.e. independent variable) could predict their performance on first language academic writing skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 9. Amharic Writing Predicting Borna Writing Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.420[a]	.176	.176	12.175

a. Predictors: (Constant), AMHARIC_WRITING_TEST_SCORES
b. Dependent Variable: BORNA_WRITING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	34.706	1.534		22.628	.000	31.697	37.715
	AMHARIC_WRITING_TEST_SCORES	.424	.026	.420	16.548	.000	.374	.474

a. Dependent Variable: BORNA_WRITING_TEST_SCORES

The analysis above revealed that a medium share of the total variation in Borna academic writing skill test scores was associated with variation in Amharic academic writing skill test score, r= .420. Moreover, students' scores on their second language academic writing skill test could predict their performance on native language academic writing skill test, r^2 = .176, F(273.831, df = 1, 1, 278), p < .001. Although the effect was small (i.e. 17.6%), the Pearson correlation (r = .420) showed a moderate positive correlation between the predictor and outcome variables.

To summarize, the result revealed the following findings: (a). the unstandardized slope, (*b = .424*) and the standardized slope, (Beta = .420) were statistically significantly different from zero, (t = 16.548, df = 1278, p < .001). Hence, for each point increase in second language academic writing skill test performance, native language academic writing skill test score increased approximately by half a point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .374, UCI = .474), which further suggested that Amharic academic writing skill was statistically significant predictor of Borna academic writing skill; (c) the intercept- the average Borna academic writing test score when Amharic academic writing skill test score equaled to zero- was (a = 34.706); and (d) the multiple R, (r^2 = .176) explained that nearly 18% of students' performance on

Borna academic writing skill test was predicted by their performance on Amharic academic reading skill test.

4.3.1.7. Amharic Reading Predicting EFL Reading Skills

A simple linear regression analysis was performed to determine whether students' performance on second language academic reading skill test (i.e. independent variable) could predict their performance on foreign language academic reading skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 10. Amharic Reading Predicting EFL Reading Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.681[a]	.464	.464	9.869

a. Predictors: (Constant), AMHARIC_READING_TEST_SCORES
b. Dependent Variable: EFL_READING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	18.791	1.259		14.930	.000	16.321	21.260
	AMHARIC_READING_TEST_SCORES	.683	.021	.681	33.284	.000	.643	.723

a. Dependent Variable: EFL_READING_TEST_SCORES

The outcomes above pointed out that a considerable proportion of the total variation in EFL academic reading skill test scores was associated with variation in Amharic academic reading skill test score, r= 681. Students' scores on their second language academic reading skill test was a good predictor of their performance on foreign language academic reading

skill test, r^2 = .464, F(1107.851, df = 1, 1278), p < .001. In fact, the effect was moderate (i.e. 33.3%), and the Pearson correlation (r = .681) showed a strong positive correlation between the predictor and outcome variables.

Overall, the analysis showed the following findings: (a). the unstandardized slope, (*b = .683*) and the standardized slope, (Beta = .681) were statistically significantly different from zero, (t = 33.284, df = 1, 278, p < .001). Therefore, for each point increase in second language academic reading skill test performance, foreign language academic reading skill test score increased approximately by a point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .643, UCI = .723), which was evident that Amharic academic reading skill was statistically significant predictor of EFL academic reading skill; (c) the intercept- the average EFL academic reading test score when Amharic academic reading skill test score equaled to zero- was (a = 18.791); and (d) the multiple R, (r^2 = .464) explained that 46.4% of students' performance on EFL academic reading skill test was predicted by their performance on Amharic academic reading skill test.

4.3.1.8. Amharic Writing Predicting EFL Writing Skills

A simple linear regression analysis was performed to determine whether students' performance on second language academic writing skill test (i.e. independent variable) could predict their performance on foreign language academic writing skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was different from zero, which was $b \neq 0$.

Table 11. Amharic Writing Predicting EFL Writing Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.388[a]	.150	.150	12.180

a. Predictors: (Constant), AMHARIC_WRITING_TEST_SCORES
b. Dependent Variable: EFL_WRITING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	37.149	1.534		24.211	.000	34.139	40.159
	AMHARIC_WRITING_TEST_SCORES	.385	.026	.388	15.038	.000	.335	.436

a. Dependent Variable: EFL_WRITING_TEST_SCORES

The outcomes pointed out that a rather medium proportion of the total variation in EFL academic writing skill test scores was associated with variation in Amharic academic writing skill test score, r= .388. In addition, students' scores on their second langauge academic writing skill test was fairly a predictor of their performance on foreign language academic writing skill test, $r^2 = .150$, $F(226.152, df = 1, 1278)$, $p < .001$. Indeed, the effect was the smallest (i.e. 15%), but the Pearson correlation (r = .388) showed that there was a medium positive correlation between the predictor and outcome variables.

In the main, the result showed the following findings: (a). the unstandardized slope, (*b = .385*) and the standardized slope, (Beta = .388) were statistically significantly different from zero, (t = 15.038, df = 1, 278, p < .001). As a result, for each point increase in second language academic writing skill test performance, foreign language academic writing skill test score increased approximately by .4 point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .335, UCI = .436), which further

pointed out that Amharic academic writing skill was statistically significant predictor of EFL academic writing skill; (c) the intercept- the average EFL academic writing test score when Amharic academic writing skill test score equaled to zero- was (a = 37.149); and (d) the multiple R, (r^2 = .150) explained that 15% of students' performance on EFL academic writing skill test was predicted by their performance on Amharic academic writing skill test.

4.3.1.9. EFL Reading Predicting Borna Reading Skills

A simple linear regression analysis was performed to examine whether students' performance on foreign language academic reading skill test (i.e. independent variable) could predict their performance on native language academic reading skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 12. EFL Reading Predicting Borna Reading Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.720[a]	.518	.518	9.300

a. Predictors: (Constant), EFL_READING_TEST_SCORES
b. Dependent Variable: BORNA_READING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	17.207	1.180		14.582	.000	14.892	19.522
	EFL_READING_TEST_SCORES	.716	.019	.720	37.088	.000	.678	.753

a. Dependent Variable: BORNA_READING_TEST_SCORES

The analysis pointed out that a significantly larger proportion of the total variation in Borna academic reading skill test scores was associated with variation in EFL academic reading skill test score, r= .720. Besides, students' scores on their foreign language academic reading skill test was a good predictor of their performance on native language academic reading skill test, r^2 = .518, F(1375.527, df = 1, 1278), p < .001. Actually, the effect was large (i.e. 51.8%), and the Pearson correlation (r = .720) showed that there was a strong positive correlation between the predictor and outcome variables.

The analysis generally pointed to the following findings: (a). the unstandardized slope, (*b = .716*) and the standardized slope, (Beta = .720) were statistically significantly different from zero, (t = 37.088, df = 1, 278, p < .001). Hence, for each point increase in foreign language academic reading skill test performance, native language academic reading skill test score increased approximately by a point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .678, UCI = .753), which also indicated that EFL academic reading skill was statistically significant predictor of Borna academic reading skill; (c) the intercept- the average Borna academic reading test score when EFL academic reading skill test score equaled to zero- was (a = 17.207); and (d) the multiple R, (r^2 = .518) explained that nearly 52% of students' performance on EFL academic reading skill test predicted their performance on Borna academic reading skill test.

4.3.1.10. EFL Writing Predicting Borna Writing Skills

A simple linear regression analysis was performed to examine whether students' performance on foreign language academic writing skill test (i.e. independent variable)

could predict their performance on native language academic writing skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 13. EFL Writing Predicting Borna Writing Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.432[a]	.187	.186	12.100

a. Predictors: (Constant), EFL_WRITING_TEST_SCORES
b. Dependent Variable: BORNA_WRITING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	33.296	1.565		21.277	.000	30.226	36.366
	EFL_WRITING_TEST_SCORES	.439	.026	.432	17.120	.000	.388	.489

a. Dependent Variable: BORNA_WRITING_TEST_SCORES

The outcomes above pointed out that a medium proportion of the total variation in Borna academic writing skill test scores was associated with variation in EFL academic writing skill test score, r= .432. Further, students' scores on their foreign language academic writing skill test was a predictor of their performance on first language academic writing skill test, r^2 = .187, F(293.103, df = 1, 1278), p < .001. Due to this, the effect was medium (i.e. 33.3%), and the Pearson correlation (r = .432) revealed that there was also a medium positive relationship between the predictor and outcome variables.

Briefly, the result displayed the following findings: (a). the unstandardized slope, (*b = .439*) and the standardized slope, (Beta = .432) were statistically significantly different from zero, (t = 17.120, df = 1, 278, p < .001). Thus, for each point increase in foreign language

academic writing skill test performance, native language academic writing skill test score increased approximately by .44 point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .388, UCI = .489), which further indicated that EFL academic writing skill was statistically significant predictor of Borna academic writing skill; (c) the intercept- the average Borna academic writing test score when EFL academic writing skill test score equaled to zero- was (a = 33.296); and (d) the multiple R, (r^2 = .187) explained that around 19% of students' performance on EFL academic writing skill test predicted their performance on Borna academic writing skill performance.

4.3.1.11. EFL Reading Predicting Amharic Reading Skills

A simple linear regression analysis was performed to examine whether students' performance on foreign language academic reading skill test (i.e. independent variable) could predict their performance on second language academic reading skill test (i.e. dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 14. EFL Reading Predicting Amharic Reading Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.681[a]	.464	.464	9.843

a. Predictors: (Constant), EFL_READING_TEST_SCORES
b. Dependent Variable: AMHARIC_READING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	19.276	1.249		15.433	.000	16.826	21.726
	EFL_READING_TEST_SCORES	.680	.020	.681	33.284	.000	.640	.720

a. Dependent Variable: AMHARIC_READING_TEST_SCORES

The outcomes above pointed out that a large proportion of the total variation in EFL academic reading skill test scores was associated with variation in Amharic academic reading skill test score, r= .681. More to this, students' scores on their foreign language academic reading skill test was a good predictor of their performance on second language academic reading skill test, r^2 = .464, F(1107.851, df = 1, 1278), p < .001. Of course, the effect was medium (i.e. 46.4%), and the Pearson correlation (r = .681) showed that there was a strong positive correlation between the predictor and outcome variables.

In conclusion, the result indicated the following findings: (a). the unstandardized slope, (*b = .680*) and the standardized slope, (Beta = .681) were statistically significantly different from zero, (t = 33.284, df = 1, 278, p < .001). Thus, for each point increase in foreign language academic reading skill test performance, second language academic reading skill test score increased approximately by .68 point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .640, UCI = .720), which was a proof that EFL academic reading skill was statistically significant predictor of Amharic academic reading skill; (c) the intercept- the average Amharic academic reading test score when EFL academic reading skill test score equaled to zero- was (a = 19.276); and (d) the multiple R, (r^2 = .464) explained that 46.4% of students' performance on EFL academic reading skill test predicted their performance on Amharic academic reading skill test.

4.3.1.12. EFL Writing Predicting Amharic Writing Skills

A simple linear regression analysis was conducted to assess whether students' performance on foreign language academic writing skill test (i.e. independent variable) could predict their performance on second language academic writing skill test (i.e.

dependent variable). The hypothesis tested was that the regression coefficient – the slope for the predictor variable – was equal to or different from zero, which was *b = or ≠ 0*.

Table 15. EFL Writing Predicting Amharic Writing Skills

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.388[a]	.150	.150	12.258

a. Predictors: (Constant), EFL_WRITING_TEST_SCORES
b. Dependent Variable: AMHARIC_WRITING_TEST_SCORES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	35.121	1.585		22.154	.000	32.011	38.231
	EFL_WRITING_TEST_SCORES	.390	.026	.388	15.038	.000	.339	.441

a. Dependent Variable: AMHARIC_WRITING_TEST_SCORES

The analysis indicated that a rather medium proportion of the total variation in Amharic academic writing skill test scores was associated with variation in EFL academic writing skill test score, r= .388. What is more, students' scores on their foreign language academic writing skill test was a predictor of their performance on second language academic writing skill test, r^2 = .150, F(226.152, df = 1, 1278), p < .001. In fact, the effect was the smallest one (i.e. 15%), and the Pearson correlation (r = .388) showed that there was a medium positive correlation between the predictor and outcome variables.

In other words, the analysis showed the following findings: (a). the unstandardized slope, (*b = .390*) and the standardized slope, (Beta = .388) were statistically significantly different from zero, (t = 15.038, df = 1, 278, p < .001). As a result, for each point increase in foreign language academic writing skill test performance, second language academic writing skill

test score increased approximately by .40 point; (b) the confidence intervals for the unstandardized slope did not have the value of zero, (LCI = .339, UCI = .441), which further proved that EFL academic writing skill was statistically significant predictor of Amharic academic writing skill; (c) the intercept- the average Amharic academic writing test score when EFL academic reading skill test score equaled to zero- was (a = 35.121); and (d) the multiple R, (r^2 = .150) explained that 15% of students' performance on EFL academic writing skill test predicted their performance on Amharic academic writing skill test.

4.4. Borna Literacy Skills Predictive Power

Q3. Do Borna language and literacy skills show statistically significantly different predictive power towards the literacy skills (reading and writing) of Amharic and EFL?

4.4.1. Borna Predictive Power across Amharic and EFL Literacy Skills

Prior to conducing a hierarchical multiple regression, the relevant assumptions of this statistical analysis were tested. Firstly, a sample size of 1280 was deemed adequate given four independent variables to be included in the analysis (Tabachnick & Fidell, 2001). The assumption of singularity was also met, as each of the independent variables (Borna reading scores, Borna writing scores, Borna grammar scores, and Borna vocabulary scores) was not a combination of the other independent variables. An examination of correlations revealed that the independent variables were not highly correlated.

As the collinearity statistics between the independent variables were all within accepted limits, the assumption of multicollinearity was deemed to have been met (i.e., Tolerance- above .10 and VIF- below 10) (Coakes, 2005; Hair et al., 1998). Extreme univariate outliers

identified in initial data screening were removed for precision of the results. An examination of histogram, normal p-p plot, and scatterplot between standardized residuals and predicted values indicated the assumptions of normality, linearity, and homoscedasticity were all satisfied.

4.4.1.1. Borna Language Predicting Amharic and EFL Reading and Writing Skills

A four stage hierarchical multiple regression was conducted with Amharic reading scores as the dependent variable. Borna reading score was entered at stage one of the regression. Borna writing score was entered at stage two, Borna grammar scores at stage three and Borna vocabulary scores at stage four. The Relationship variables were entered in this order, as it seemed chronologically plausible given reading and writing skills are related to literacy skills- receptive and productive skills, whereas Borna grammar score and Borna vocabulary score are language knowledge that have independent roles in each of the language skills.

Table 16. Borna Language Predicting Amharic Reading

Summary of Hierarchical Regression Analysis for Borna Language Variables predicting Amharic reading scores

										Collinearity Statistics	
Variables	***B***	**T**	**Std. Error**	**R**	**R Square**	**R Square Change**	**Std. Er.Est**	**F**	**Sig. F Change**	**Tolerance**	**VIF**
Step 1				**.669[a]**	**0.447**	**0.447**	**10.000**	**1033.629**	**.000**		
Borna Reading Scores	**.672**	**32.150*** **	**.021**							**1.000**	**1.000**
Step 2				**.735[b]**	**.539**	**.092**	**9.130**	**748.026**	**.000**		
Borna Reading Scores	**.448**	**18.968*** **	**.024**							**.651**	**1.535**
Borna Writing Scores	**.378**	**16.003*** **	**.024**							**.651**	**1.535**
Step 3				**.735[c]**	**.541**	**.002**	**9.121**	**500.977**	**.054**		
Borna Reading Scores	**.485**	**15.976*** **	**.030**							**.394**	**2.539**
Borna Writing Scores	**.386**	**16.116*** **	**.024**							**.633**	**1.580**
Borna Grammar Scores	**-.056**	**-1.926**	**.029**							**.435**	**2.298**
Step 4				**.744[d]**	**.554**	**.013**	**8.995**	**395.501**	**.000**		
Borna Reading Scores	**.388**	**11.418*** **	**.034**							**.306**	**3.266**
Borna Writing Scores	**.380**	**16.107*** **	**.024**							**.632**	**1.582**
Borna Grammar Scores	**-.087**	**-2.991****	**.029**							**.422**	**2.372**
Borna Vocabulary Scores	**.172**	**6.070*** **	**.028**							**.453**	**2.207**

Dependent: Amharic Reading Test Scores

Note. N = 1280; *p < .05, **p < .01, ***p< .001

The hierarchical multiple regression analysis revealed that at Stage one Borna reading scores contributed significantly to the regression model, F (1033.629,df=1,1278),p<.001 and accounted for 44.7% of the variation in Amharic reading scores. Introducing the writing scores in stage two explained an additional 9.2% of variation in Amharic reading scores and this change in R^2 was significant, F (748.026, df = 2, 1277), p < .001. Adding Borna grammar scores to the regression model explained an additional 0.2% of the variation in Amharic reading scores but this change in R^2 was not significant. Finally, the addition of Borna vocabulary scores to the regression model explained an additional 1.3%

of the variation in Amharic reading scores and this change in R^2 was also significant, F (395.501, df = 4, 1275)p < .001. When all of the independent variables were included in stage four of the regression model, they were significant predictors of Amharic reading scores. The most important predictor of Amharic reading scores was Borna vocabulary scores, which uniquely explained 1.3% of the variation in Amharic reading scores. Together the four Borna language independent variables accounted for 55.4% of the variance in Amharic reading scores.

Table 17. Borna Language Predicting Amharic Writing Skill

Summary of Hierarchical Regression Analysis for Borna Language Variables predicting Amharic writing scores

										collinearity Statistics	
Variables	***B***	**T**	**Std. Error**	**R**	**R Square**	**R Square Change**	**Std. Er.Est**	**F**	**Sig. F Change**	**Tolerance**	**VIF**
Step 1				**.563[a]**	**.317**	**.317**	**10.992**	**592.180**	**.000**		
Borna Reading Scores	**.559**	**24.335*** **	**.023**							**1.000**	**1.000**
Step 2				**.573[b]**	**.329**	**.012**	**10.900**	**312.372**	**.000**		
Borna Reading Scores	**.480**	**16.999*** **	**.028**							**.651**	**1.535**
Borna Writing Scores	**.134**	**4.751*** **	**.028**							**.651**	**1.535**
Step 3				**.593[c]**	**.352**	**.023**	**10.714**	**230.781**	**.000**		
Borna Reading Scores	**.328**	**9.196*** **	**.036**							**.394**	**2.539**
Borna Writing Scores	**.102**	**3.629*** **	**.028**							**.633**	**1.580**
Borna Grammar Scores	**.231**	**6.762*** **	**.034**							**.435**	**2.298**
Step 4				**.597[d]**	**.357**	**.005**	**10.681**	**176.426**	**.003**		
Borna Reading Scores	**.385**	**9.550*** **	**.040**							**.306**	**3.266**
Borna Writing Scores	**.105**	**3.748*** **	**.028**							**.632**	**1.582**
Borna Grammar Scores	**.249**	**7.206*** **	**.035**							**.422**	**2.372**
Borna Vocabulary Scores	**-.101**	**-3.002** **	**.034**							**.453**	**2.207**

Dependent: Amharic Writing Test Scores

Note. N = 1280; *p < .05, **p < .01, ***p< .001

The hierarchical multiple regression analysis showed that at Stage one Borna reading scores contributed significantly to the regression model, F (592.180, df=1,1278), p<.001 and accounted for 31.7% of the variation in Amharic reading scores. Introducing the writing scores in stage two explained an additional 1.2% of variation in Amharic reading scores and this change in R^2 was significant, F (321.372, df = 2, 1277), p < .001. Adding Borna grammar scores to the regression model explained an additional 2.3% of the variation in Amharic reading scores and this change in R^2 was significant, F(230.781, df = 3, 1276), p <.001. Finally, the addition of Borna vocabulary scores to the regression model explained an additional 0.5% of the variation in Amharic reading scores and this change in R^2 was also significant, F (176.426, df = 4, 1275)p < .01. When all of the independent variables were included in stage four of the regression model, they were significant predictors of Amharic reading scores. The most important predictor of Amharic reading scores was again Borna grammar scores, which distinctively explained 2.3% of the variation in Amharic reading scores. Together the four Borna language independent variables accounted for 36% of the variance in Amharic reading scores.

Table 18. Borna Language Predicting EFL Reading Skill

Summary of Hierarchical Regression Analysis for Borna Language Variables predicting EFL reading scores

									Collinearity Statistics	
Variables	***B***	**T**	**Std. Error**	**R**	**R Square**	**R Square Change**	**Std. Er.Est**	**F**	**Sig. F Change**	**Tolerance**	**VIF**
Step 1				**.720[a]**	**.518**	**.518**	**9.356**	**1371.761**	**.000**		
Borna Reading Scores	**.724**	**37.037*** **	**.020**							**1.000**	**1.000**
Step 2				**.909[b]**	**.826**	**.308**	**5.622**	**3030.652**	**.000**		
Borna Reading Scores	**.315**	**21.655*** **	**.015**							**.651**	**1.535**
Borna Writing Scores	**.691**	**47.564*** **	**.015**							**.651**	**1.535**
Step 3				**.915[c]**	**.837**	**.011**	**5.442**	**2185.334**	**.000**		
Borna Reading Scores	**.421**	**23.258*** **	**.018**							**.394**	**2.539**
Borna Writing Scores	**.714**	**50.006*** **	**.014**							**.633**	**1.580**
Borna Grammar Scores	**-.162**	**-9.323*** **	**.017**							**.435**	**2.298**
Step 4				**.916[d]**	**.839**	**.002**	**5.416**	**1658.133**	**.000**		
Borna Reading Scores	**.457**	**22.326*** **	**.020**							**.306**	**3.266**
Borna Writing Scores	**.716**	**50.346*** **	**.014**							**.632**	**1.582**
Borna Grammar Scores	**-.151**	**-8.578*** **	**.018**							**.422**	**2.372**
Borna Vocabulary Scores	**-.062**	**-3.648*** **	**.017**							**.453**	**2.207**

Dependent: EFL Reading Test Scores

Note. N = 1280; *p < .05, **p < .01, ***p< .001

The hierarchical multiple regression analysis presented that at Stage one Borna reading scores contributed significantly to the regression model, F (1371.761, df 1, 1278), p < .001 and accounted for 51.8% of the variation in EFL reading scores. Introducing the writing scores in stage two explained an additional 30.8% of variation in EFL reading scores and this change in R^2 was significant, F (3030.652, df 2, 1277), p < .001. Adding Borna grammar

scores to the regression model explained an additional 1.1% of the variation in EFL reading scores and this change in $R^2$was significant, F (2188.334, df = 3, 1276), p < .001. Finally, the addition of Borna vocabulary scores to the regression model explained an additional 0.2% of the variation in EFL reading scores and this change in R^2 was also significant, F (1658.133, df = 4, 1275), p < .001. When all of the independent variables were included in stage four of the regression model, they were significant predictors of EFL reading scores. The most important predictor of EFL reading scores was Borna grammar scores, which uniquely explained 1.1% of the variation in EFL reading scores. Together the four independent variables accounted for 84% of the variance in EFL reading scores.

Table 19. Borna Language Predicting EFL Writing Skill

Summary of Hierarchical Regression Analysis for Borna Language Variables predicting EFL writing scores

										collinearity Statistics	
Variables	***B***	**T**	**Std. Error**	**R**	**R Square**	**R Square Change**	**Std. Er.Est**	**F**	**Sig. F Change**	**Tolerance**	**VIF**
Step 1				**.653[a]**	**.427**	**.427**	**10.000**	**950.540**	**.000**		
Borna Reading Scores	**.644**	**30.831*** **	**.021**							**1.000**	**1.000**
Step 2				**.656[b]**	**.430**	**.003**	**9.974**	**481.378**	**.006**		
Borna Reading Scores	**.603**	**23.334*** **	**.026**							**.651**	**1.535**
Borna Writing Scores	**.070**	**2.726** **	**.026**							**.651**	**1.535**
Step 3				**.697[c]**	**.485**	**.055**	**9.481**	**401.004**	**.000**		
Borna Reading Scores	**.370**	**11.719*** **	**.032**							**.394**	**2.539**
Borna Writing Scores	**.021**	**.858**	**.025**							**.633**	**1.580**
Borna Grammar Scores	**.355**	**11.722*** **	**.030**							**.435**	**2.298**
Step 4				**.856[d]**	**.732**	**.247**	**6.838**	**872.598**	**.000**		
Borna Reading Scores	**-.048**	**-1.868**	**.026**							**.306**	**3.266**
Borna Writing Scores	**-.001**	**-.071**	**.018**							**.632**	**1.582**

Borna Grammar Scores	**.221**	**9.951*** **	**.022**		**.422**	**2.372**
Borna Vocabulary Scores	**.740**	**34.320*** **	**.022**		**.453**	**2.207**

Dependent: EFL Writing Test Scores

Note. N = 1280; *p < .05, **p < .01, ***p< .001

The hierarchical multiple regression analysis produced that at Stage one Borna reading scores contributed significantly to the regression model, *F* (950.560, df 1, 1278), p < .001 and accounted for 42.7% of the variation in EFL writing scores. Introducing the writing scores in stage two explained an additional 0.3% of variation in EFL writing scores and this change in R^2 was significant, *F* (481.378, df 2, 1277), p < .001. Adding Borna grammar scores to the regression model explained an additional 5.5% of the variation in EFL writing scores and this change in $R^2$was significant, *F* (401.004, df = 3, 1276), p < .001. Finally, the addition of Borna vocabulary scores to the regression model explained an additional 24.7% of the variation in EFL writing scores and this change in R^2 was also significant, *F* (1658.133, df = 4, 1275), p < .001. When all of the independent variables were included in stage four of the regression model, they were significant predictors of EFL writing scores. The most important predictor of EFL writing scores was Borna vocabulary scores, which uniquely explained 25% of the variation in EFL writing scores. Together the four independent variables accounted for 73% of the variance in EFL writing scores.

Overall, an independent samples t-test was conducted to compare whether Borna language predictive power toward Amharic and EFL was equal. From the outputs below, there was a significant difference in the predicted value between the two languages, t(2) = -2.94, p < .05, two-tailed with EFL Skills (M = 78.60, SD = 14.00) showing higher value than Amharic Skills (M = 45.50, SD = 7.64). The magnitude of the differences in the means (mean

difference = -33.1, 95% CI: -81.62 to -15.42) was large at alpha significance value .05. Besides, this difference might also apply to both Amharic and EFL skills predictive powers toward each other and toward the corresponding skills of Borna language.

Table 20. Borna language predictive power towards Amharic and EFL Literacy Skills

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Borna_ Predictive_ Power	Equal variances assumed	3.32	.120	-2.935	2	.012	-33.10000	11.27697	-81.62088	15.42088
	Equal variances not assumed			-2.935	1.547	.133	-33.10000	11.27697	-98.15633	31.95633

4.5. Interaction Effects Between Borna and Other Variables

Q4. Are the effects of Borna literacy skills on the corresponding literacy skills of Amharic and EFL contingent on different levels of gender, knowledge of more L2s, and initial language of instructions, respectively?

4.5.1. Interaction Effect of Borna Literacy Skills and Gender on Amharic and EFL Literacy Skills

4.5.1.1. The Effects of Borna Literacy Skills and Gender on Amharic Literacy Skills

A factorial ANOVA was conducted to determine the interaction effect of Borna language literacy skills and gender on Amharic language literacy skills.

A. Borna Reading and Gender Effect on Amharic Reading

A two-way analysis of variance was conducted on the influence of two independent variables (Borna Reading Comprehension Test Scores and Gender) on the scores of Amharic Reading Comprehension Test). Borna reading test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and gender consisted of two levels (Male and Female). All effects were statistically significant at the alpha .05 significance level except for the gender factor. The simple main effect for native language reading comprehension skill yielded an F ratio of $F(4, 1270) = 264.158$, $p < .001$, indicating a significant difference between Beginner (M= 48.00, SD= 13.11), Upper-Beginner (M= 52.78, SD= 8.71), Intermediate (M= 58.28, SD= 7.85), Upper-Intermediate (M= 66.92, SD= 8.81), and Advanced (M= 74.20, SD= 11.23). The simple main effect for gender yielded an F ratio of $F(1, 1270) = .720$, $p > .05$, indicating that the effect for gender was not statistically significant, male (M= 59.80, SD= 9.84) and female (M= 60.27, SD= 9.72). The interaction effect was significant, $F(4, 1270) = 177.361$, $p < .001$, indicating that the effects of first language reading skill on second language reading skill was

dependent on the condition of the gender factor. Besides, the combination of the two factors explained 76.3% of the variation in the response variable, Adjusted R^2 = .763.

Tables 21. Interaction effect between Borna reading and gender on Amharic reading

Tests of Between-Subjects Effects
Dependent Variable: AMHARIC_READING_TEST_SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	107899.268[a]	9	11988.808	123.523	.000	.767	1.000
Intercept	4461539.964	1	4461539.964	45968.048	.000	.973	1.000
READING_1	102553.810	4	25638.452	264.158	.000	.454	1.000
GENDER	69.910	1	69.910	.720	.396	.001	.136
READING_1 * GENDER	**2857.777**	**4**	**714.444**	**177.361**	**.000**	**.230**	**.997**
Error	123262.919	1270	97.057				
Total	4812800.000	1280					
Corrected Total	231162.188	1279					

a. R Squared = .767 (Adjusted R Squared = .763)
b. Computed using alpha = .05

Pairwise Comparisons
Dependent Variable: AMHARIC_READING_TEST_SCORES

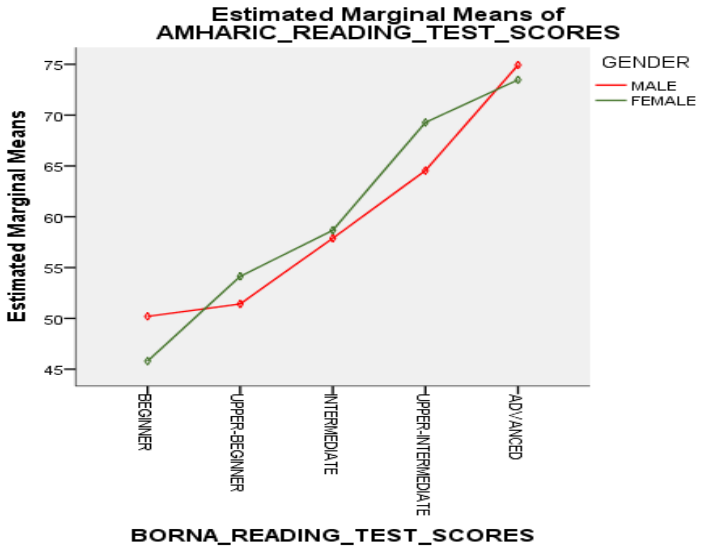
BORNA_READING_TEST_SCORES	(I) GENDER	(J) GENDER	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 MALE	1 FEMALE	4.402*	1.363	.001	1.727	7.076
	1 FEMALE	0 MALE	-4.402*	1.363	.001	-7.076	-1.727
50 UPPER-BEGINNER	0 MALE	1 FEMALE	-2.715*	1.156	.019	-4.982	-.448
	1 FEMALE	0 MALE	2.715*	1.156	.019	.448	4.982
60 INTERMEDIATE	0 MALE	1 FEMALE	-.783	1.116	.483	-2.972	1.405
	1 FEMALE	0 MALE	.783	1.116	.483	-1.405	2.972
70 UPPER-INTERMEDIATE	0 MALE	1 FEMALE	-4.734*	1.295	.000	-7.274	-2.194
	1 FEMALE	0 MALE	4.734*	1.295	.000	2.194	7.274
80 ADVANCED	0 MALE	1 FEMALE	1.454	1.313	.269	-1.123	4.030
	1 FEMALE	0 MALE	-1.454	1.313	.269	-4.030	1.123

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there

is interaction effect between the first language reading skill and gender on the development of second language reading skill.

Figure 3. Interactions between L1 reading and Gender effect on L2 reading



B. Borna Writing and Gender Effect on Amharic Writing

A two-way analysis of variance was conducted on the influence of two independent variables (Borna writing performance Test Scores and Gender) on the scores of Amharic writing Performance Test). Borna writing performance test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and gender consisted of two levels (Female and Male). All effects were statistically significant at the alpha .05 significance level except for the gender factor. The simple main effect for native language writing performance skill yielded an F ratio of $F(4, 1270) = 67.257$, $p < .001$, indicating a significant difference between Beginner (M= 50.78, SD= 13.77), Upper-Beginner (M= 54.40, SD= 10.66), Intermediate (M= 58.38, SD= 9.21), Upper-

Intermediate (M= 61.95, SD= 11.63), and Advanced (M= 67.71, SD= 15.44). The main effect for gender yielded an F ratio of F(1, 1270) = .056, p > .05, indicating that the effect for gender was not statistically significant, male (M= 58.56, SD= 12.44) and female (M= 58.72, SD= 11.85). The interaction effect was also significant, F(4, 1270) = 22.010, p < .05, showing that the effects of the first factor on the response variable was dependent on the condition of the other factor.

Tables 22. Interaction effect between Borna writing and gender on Amharic writing

Tests of Between-Subjects Effects
Dependent Variable: AMHARIC_WRITING_TEST_SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	41572.544[a]	9	4619.172	31.817	.000	.584	1.000
Intercept	4276887.926	1	4276887.926	29459.591	.000	.959	1.000
WRITING_1	39057.059	4	9764.265	67.257	.000	.475	1.000
GENDER	8.096	1	8.096	.056	.813	.000	.056
WRITING_1 * GENDER	**1283.174**	**4**	**320.793**	**22.010**	**.046**	**.007**	**.653**
Error	184376.206	1270	145.178				
Total	4592400.000	1280					
Corrected Total	225948.750	1279					

a. R Squared = .584 (Adjusted R Squared = .578)
b. Computed using alpha = .05

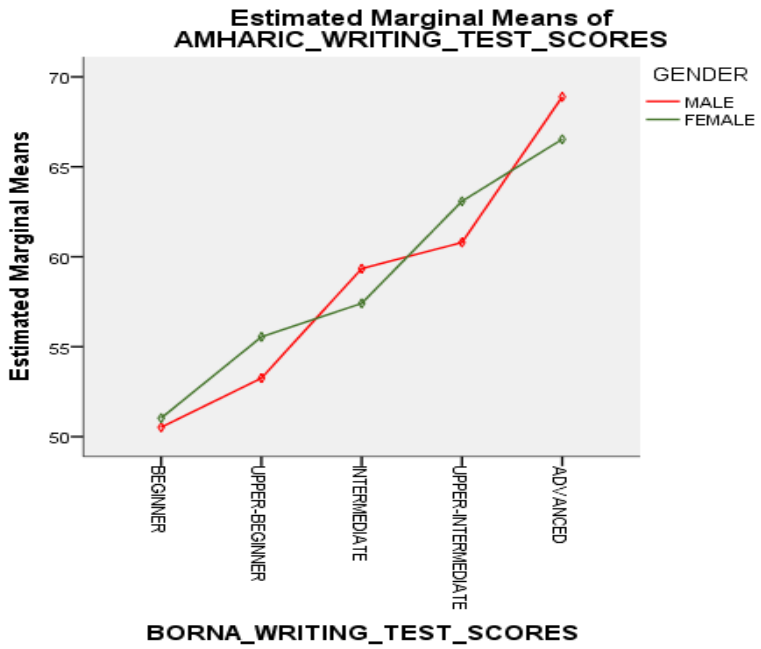
Pairwise Comparisons
Dependent Variable: AMHARIC_WRITING_TEST_SCORES

BORNA_WRITING_TEST_SCORES	(I) GENDER	(J) GENDER	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 MALE	1 FEMALE	-.511	1.632	.754	-3.713	2.691
	1 FEMALE	0 MALE	.511	1.632	.754	-2.691	3.713
50 UPPER-BEGINNER	0 MALE	1 FEMALE	-2.294*	1.391	.049	-5.023	.434
	1 FEMALE	0 MALE	2.294*	1.391	.049	-.434	5.023
60 INTERMEDIATE	0 MALE	1 FEMALE	1.932*	1.414	.017	-.842	4.706
	1 FEMALE	0 MALE	-1.932*	1.414	.017	-4.706	.842
70 UPPER-INTERMEDIATE	0 MALE	1 FEMALE	-2.292*	1.534	.013	-5.301	.717
	1 FEMALE	0 MALE	2.292*	1.534	.013	-.717	5.301
80 ADVANCED	0 MALE	1 FEMALE	2.358*	1.650	.015	-.879	5.595
	1 FEMALE	0 MALE	-2.358*	1.650	.015	-5.595	.879

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there is interaction effect between the first language writing skill and gender on the development of second language writing skill.

Figure 4. Interactions between L1 writing and Gender effect on L2 writing



4.5.1.2. The Effects of Borna Literacy Skills and Gender on EFL Literacy Skills

A factorial ANOVA was conducted to determine the interaction effect of Borna language literacy skills and gender on English as a foreign language literacy skills.

A. Borna Reading and Gender Effect on EFL Reading

A two-way analysis of variance was conducted on the influence of two independent variables (Borna Reading Comprehension Test Scores and Gender) on the scores of EFL Reading Comprehension Test). Borna reading test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and gender consisted of two levels (Female and Male). All effects were statistically significant at the alpha .05 significance level except for the gender factor. The simple main effect for native language reading comprehension skill yielded an F ratio of $F(4, 1270) = 353.288$, $p < .001$, signifying a significant difference between Beginner (M= 46.80, SD= 12.19), Upper-Beginner (M= 52.15, SD= 7.81), Intermediate (M= 58.41, SD= 6.54), Upper-Intermediate (M= 66.80, SD= 8.58), and Advanced (M= 75.49, SD= 10.31). The simple main effect for gender yielded an F ratio of $F(1, 1270) = .494$, $p > .05$, indicating that the effect for gender was not statistically significant, male (M= 59.74, SD= 9.24) and female (M= 60.11, SD= 8.93). The interaction effect was significant, $F(4, 1270) = 281.012$, $p < .001$, indicating that the effects of first language reading skill factor on the EFL reading skill variable was dependent on the condition of the gender factor.

Tables 23. Interaction effect between Borna reading and gender on EFL reading

Tests of Between-Subjects Effects

Dependent Variable: EFL_READING_TEST_SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	124389.169[a]	9	13821.019	163.160	.000	.536	1.000
Intercept	4445827.807	1	4445827.807	52483.988	.000	.976	1.000
READING_1	119705.730	4	29926.432	353.288	.000	.527	1.000
GENDER	41.837	1	41.837	.494	.482	.000	.108
READING_1 * GENDER	**2748.689**	**4**	**687.172**	**281.012**	**.000**	**.025**	**.998**
Error	107579.503	1270	84.708				
Total	4790900.000	1280					
Corrected Total	231968.672	1279					

a. R Squared = .536 (Adjusted R Squared = .533)
b. Computed using alpha = .05

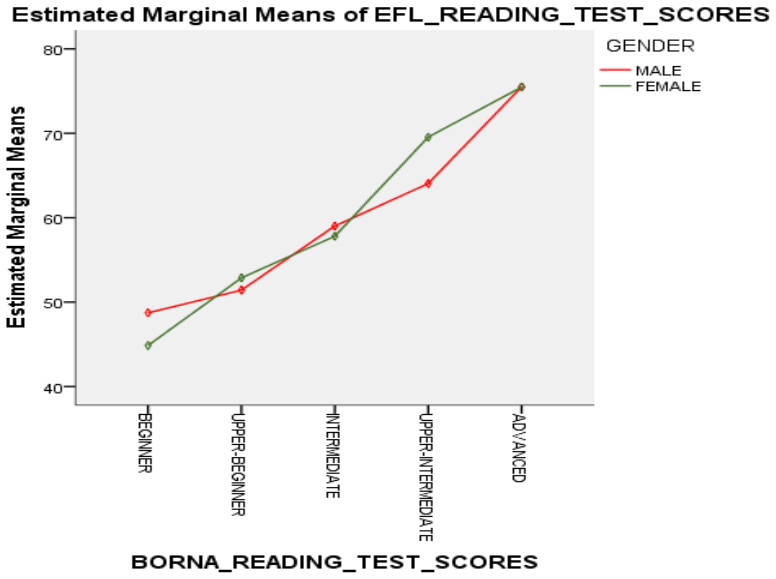
Pairwise Comparisons
Dependent Variable: EFL_READING_TEST_SCORES

BORNA_READING_TEST_SCORES	(I) GENDER	(J) GENDER	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 MALE	1 FEMALE	3.866*	1.274	.002	1.367	6.364
	1 FEMALE	0 MALE	-3.866*	1.274	.002	-6.364	-1.367
50 UPPER-BEGINNER	0 MALE	1 FEMALE	-1.448	1.080	.180	-3.566	.670
	1 FEMALE	0 MALE	1.448	1.080	.180	-.670	3.566
60 INTERMEDIATE	0 MALE	1 FEMALE	1.211	1.042	.246	-.834	3.255
	1 FEMALE	0 MALE	-1.211	1.042	.246	-3.255	.834
70 UPPER-INTERMEDIATE	0 MALE	1 FEMALE	-5.500*	1.210	.000	-7.873	-3.127
	1 FEMALE	0 MALE	5.500*	1.210	.000	3.127	7.873
80 ADVANCED	0 MALE	1 FEMALE	.034	1.227	.978	-2.374	2.441
	1 FEMALE	0 MALE	-.034	1.227	.978	-2.441	2.374

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there is interaction effect between the first language reading skill and gender on the development of foreign language reading skill.

Figure 5. Interaction effect between Borna reading and gender on EFL reading



B. Borna Writing and Gender Effect on EFL Writing

A two-way analysis of variance was conducted on the influence of two independent variables (Borna writing performance Test Scores and Gender) on the scores of EFL writing Performance Test). Borna writing performance test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and gender consisted of two levels (Female and Male). All effects were statistically significant at the alpha .05 significance level except for the gender factor. The simple main effect for native language writing performance skill yielded an F ratio of F(4, 1270) = 72.655, $p < .001$, indicating a significant difference between Beginner (M= 51.93, SD= 13.21), Upper-Beginner (M= 55.95, SD= 10.84), Intermediate (M= 58.78, SD= 9.11), Upper-Intermediate (M= 63.36, SD= 12.60), and Advanced (M= 69.41, SD= 14.13). The main effect for gender yielded an F ratio of F(1, 1270) = .128, $p > .05$, indicating that the effect for gender condition was not statistically significant, male (M= 60.00, SD= 12.71) and female (M= 59.76, SD= 11.25). The interaction effect was also significant, F(4, 1270) = 61.878, $p < .05$, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor.

Tables 24. Interaction effect between Borna writing and gender on EFL writing

Tests of Between-Subjects Effects
Dependent Variable: EFL_WRITING_TEST_SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	43499.786[a]	9	4833.310	34.228	.000	.795	1.000
Intercept	4459896.586	1	4459896.586	31583.750	.000	.961	1.000
WRITING_1	41037.815	4	10259.454	72.655	.000	.186	1.000
GENDER	18.066	1	18.066	.128	.721	.000	.065
WRITING_1 * GENDER	**1060.784**	**4**	**265.196**	**61.878**	**.012**	**.060**	**.572**
Error	179334.901	1270	141.209				
Total	4775800.000	1280					
Corrected Total	222834.687	1279					

a. R Squared = .795 (Adjusted R Squared = .790)
b. Computed using alpha = .05

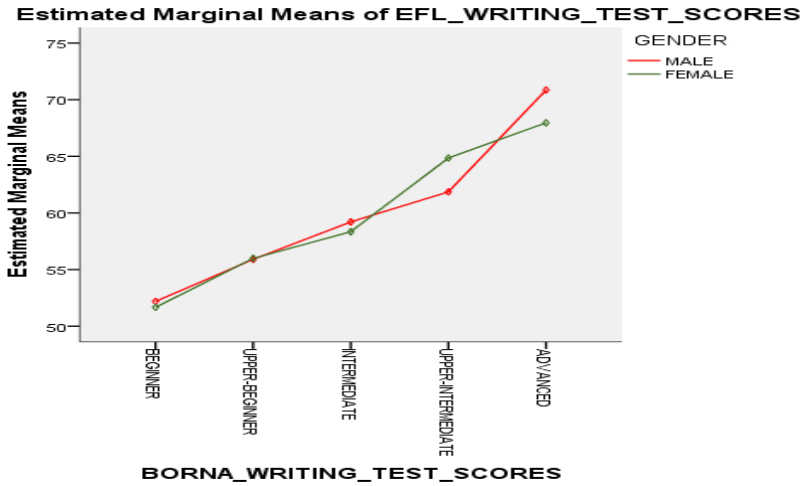
Pairwise Comparisons
Dependent Variable: EFL_WRITING_TEST_SCORES

BORNA_WRITING_TEST_SCORES	(I) GENDER	(J) GENDER	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 MALE	1 FEMALE	.521	1.610	.746	-2.637	3.679
	1 FEMALE	0 MALE	-.521	1.610	.746	-3.679	2.637
50 UPPER-BEGINNER	0 MALE	1 FEMALE	-.082	1.372	.952	-2.773	2.609
	1 FEMALE	0 MALE	.082	1.372	.952	-2.609	2.773
60 INTERMEDIATE	0 MALE	1 FEMALE	.865*	1.395*	.035	-1.871	3.601
	1 FEMALE	0 MALE	-.865*	1.395*	.035	-3.601	1.871
70 UPPER-INTERMEDIATE	0 MALE	1 FEMALE	-2.995*	1.513*	.048	-5.962	-.027
	1 FEMALE	0 MALE	2.995*	1.513*	.048	.027	5.962
80 ADVANCED	0 MALE	1 FEMALE	2.896*	1.627*	.050	-.297	6.088
	1 FEMALE	0 MALE	-2.896*	1.627*	.050	-6.088	.297

Based on estimated marginal means
a. Adjustment for multiple comparisons: Bonferroni.
*. The mean difference is significant at the .05 level.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there is interaction effect between the first language writing skill and gender on the development of foreign language writing skill.

Figure 6. Interaction effect between Borna writing and gender on EFL writing



4.5.2. Interaction Effects of Borna Literacy Skills and Initial Language of Instruction on Amharic and EFL Literacy Skills

4.5.2.1. The Effects of Borna Literacy Skills and Initial Language of Instruction on Amharic Literacy Skills

A factorial ANOVA was conducted to determine the interaction effect of Borna language literacy skills and Early Grades Medium of Instruction on Amharic language literacy skills.

A. Borna Reading and Early Grades MoI on Amharic Reading

A two-way analysis of variance was conducted on the influence of two independent variables (Borna Reading Comprehension Test Scores and Early Grades Medium of Instruction) on the scores of Amharic Reading Comprehension Test). Borna reading test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Early Grades Medium of Instruction consisted of two levels (Borna and Amharic). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language reading comprehension skill yielded an F ratio of $F(4, 1270) = 45.947$, $p < .001$, indicating a significant difference between Beginner (M= 56.03, SD= 14.99), Upper-Beginner (M= 55.52, SD= 12.17), Intermediate (M= 56.74, SD= 9.66), Upper-Intermediate (M= 63.49, SD= 12.81), and Advanced (M= 67.82, SD= 13.44). The simple main effect for Early Grades Medium of Instruction yielded an F ratio of $F(1, 1270) = 6.611$, $p < .05$, indicating that the effect for Early Grades Medium of Instruction was statistically significant, Amharic (M= 59.01, SD= 12.68) and Borna (M= 60.83, SD= 12.55). The interaction effect was also significant, $F(4, 1270) = 2.625$, $p < .05$, indicating that the effects of the first language reading skill on

second language reading skill was dependent on the condition of the early grades medium of instruction factor.

Tables 25. Interaction effect between Borna reading and early MoI on Amharic reading

Tests of Between-Subjects Effects
Dependent Variable: AMHARIC READING TEST SCORES

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	32264.632[a]	9	3584.959	23.204	.000	.141	1.000
Intercept	4431983.902	1	4431983.902	28685.926	.000	.958	1.000
READING_1	28395.440	4	7098.860	45.947	.000	.126	1.000
LOWER_GRADES_MOI	1021.335	1	1021.335	6.611	.010	.005	.829
READING_1 * LOWER_GRADES_MOI	**1622.425**	**4**	**405.606**	**2.625**	**.033**	**.008**	**.838**
Error	196215.368	1270	154.500				
Total	4760000.000	1280					
Corrected Total	228480.000	1279					

a. R Squared = .141 (Adjusted R Squared = .135)
b. Computed using alpha = .05

Pairwise Comparisons
Dependent Variable: AMHARIC READING TEST SCORES

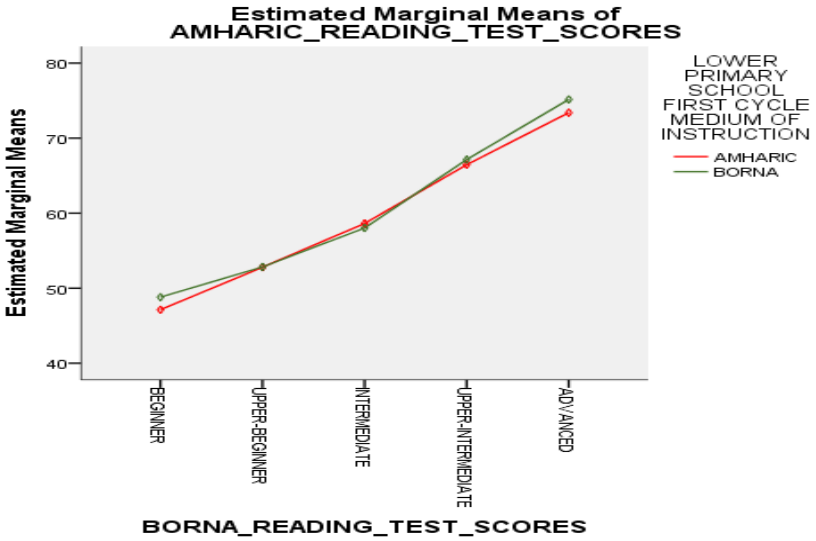
BORNA READING TEST SCORES	(I) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	(J) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 Amharic	1 BORNA	-3.541*	1.725	.040	-6.925	-.157
	1 BORNA	0 Amharic	3.541*	1.725	.040	.157	6.925
50 UPPER BEGINNER	0 Amharic	1 BORNA	-.306	1.447	.833	-3.145	2.534
	1 BORNA	0 Amharic	.306	1.447	.833	-2.534	3.145
60 INTERMEDIATE	0 Amharic	1 BORNA	1.277*	1.381	.035	-1.432	3.987
	1 BORNA	0 Amharic	-1.277*	1.381	.035	-3.987	1.432
70 UPPER INTERMEDIATE	0 Amharic	1 BORNA	-1.510*	1.647	.036	-4.742	1.722
	1 BORNA	0 Amharic	1.510*	1.647	.036	-1.722	4.742
80 ADVANCED	0 Amharic	1 BORNA	-5.016*	1.680	.003	-8.312	-1.721
	1 BORNA	0 Amharic	5.016*	1.680	.003	1.721	8.312

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there is interaction effect between the first language reading skill and lower grades medium of

instruction (or initial language of instructions) on the development of second language reading skill.

Figure 7. Interaction effect between Borna reading and early MoI on Amharic reading



B. Borna Writing and Early Grades MoI on Amharic Writing

A two-way analysis of variance was conducted on the influence of two independent variables (Borna writing performance Test Scores and Early Grades Medium of Instruction) on the scores of Amharic writing Performance Test). Borna writing performance test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Early Grades Medium of Instruction consisted of two levels (Borna and Amharic). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language writing performance skill yielded an F ratio of $F(4, 1270) = 20.018$, $p < .001$, indicating a significant difference between Beginner (M= 59.74, SD= 14.93), Upper-Beginner (M= 58.21, SD= 12.89), Intermediate (M= 55.82, SD= 10.39), Upper-Intermediate (M= 61.22, SD= 11.96), and Advanced (M= 65.42, SD= 14.82). The main effect for Early Grades Medium of Instruction

yielded an F ratio of F(1, 1270) = 11.919, p < .01, indicating that the effect for Early Grades Medium of Instruction was statistically significant, Amharic (M= 58.82, SD= 12.82) and Borna (M= 61.34, SD= 13.17). The interaction effect was also significant, F(4, 1270) = 2.763, p < .05, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor.

Tables 26. Interaction effect between Borna writing and early MoI on Amharic writing

Tests of Between-Subjects Effects
Dependent Variable: AMHARIC WRITING TEST SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	16317.696[a]	9	1813.077	11.048	.000	.073	1.000
Intercept	4458541.988	1	4458541.988	27168.036	.000	.955	1.000
WRITING_1	13140.391	4	3285.098	20.018	.000	.059	1.000
LOWER_GRADES_MOI	1955.968	1	1955.968	11.919	.001	.009	.932
WRITING_1 * LOWER_GRADES_MOI	**1814.026**	**4**	**453.506**	**2.763**	**.026**	**.009**	**.863**
Error	208419.491	1270	164.110				
Total	4763400.000	1280					
Corrected Total	224737.188	1279					

a. R Squared = .073 (Adjusted R Squared = .066)
b. Computed using alpha = .05

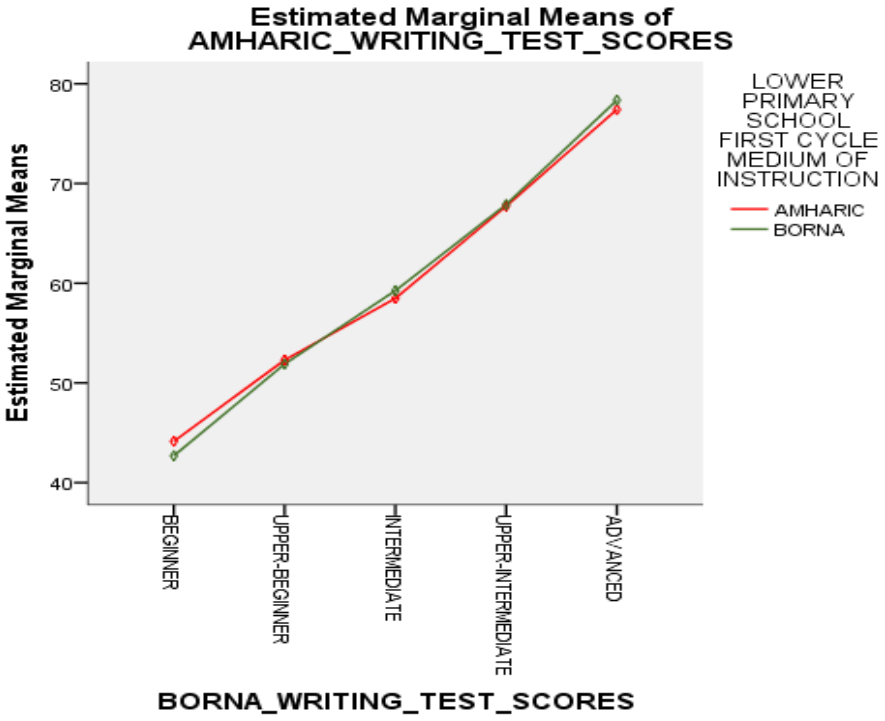
Pairwise Comparisons
Dependent Variable: AMHARIC WRITING TEST SCORES

BORNA WRITING TEST SCORES	(I) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	(J) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 Amharic	1 BORNA	-5.900*	1.768	.001	-9.369	-2.431
	1 BORNA	0 Amharic	5.900*	1.768	.001	2.431	9.369
50 UPPER BEGINNER	0 Amharic	1 BORNA	1.122	1.571	.475	-1.961	4.205
	1 BORNA	0 Amharic	-1.122	1.571	.475	-4.205	1.961
60 INTERMEDIATE	0 Amharic	1 BORNA	-.801	1.379	.562	-3.505	1.904
	1 BORNA	0 Amharic	.801	1.379	.562	-1.904	3.505
70 UPPER INTERMEDIATE	0 Amharic	1 BORNA	-3.336*	1.623	.040	-6.520	-.152
	1 BORNA	0 Amharic	3.336*	1.623	.040	.152	6.520
80 ADVANCED	0 Amharic	1 BORNA	-3.670*	1.777	.039	-7.156	-.184
	1 BORNA	0 Amharic	3.670*	1.777	.039	.184	7.156

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there is interaction effect between the first language writing skill and lower grades medium of instruction (or initial language of instructions) on the development of second language writing skill.

Figure 8. Interaction effect between Borna writing and early MoI on Amharic writing



4.5.2.2. The Interaction Effects of Borna Literacy Skills and Early Grades MoI on EFL Literacy Skills

A factorial ANOVA was conducted to determine the interaction effect of Borna language literacy skills and Early Grades Medium of Instruction on English as a foreign language literacy skills.

A. Borna Reading and Early Grades MoI on EFL Reading

A two-way analysis of variance was conducted on the influence of two independent variables (Borna Reading Comprehension Test Scores and Early Grades Medium of Instruction) on EFL Reading Comprehension Test). Borna reading test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Early Grades Medium of Instruction consisted of two levels (Borna and Amharic). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language reading comprehension skill yielded an F ratio of $F(4, 1270) = 113.952$, $p < .001$, indicating a significant difference between Beginner (M= 52.48, SD= 14.56), Upper-Beginner (M= 54.28, SD= 9.98), Intermediate (M= 59.82, SD= 8.51), Upper-Intermediate (M= 64.53, SD= 11.87), and Advanced (M= 73.02, SD= 13.19). The simple main effect for Early Grades Medium of Instruction yielded an F ratio of $F(1, 1270) = 2.407$, $p < .05$, indicating that the effect for Early Grades Medium of Instruction was statistically significant, Amharic (M= 59.43, SD= 10.91) and Borna (M= 62.22, SD= 12.34). The interaction effect was significant, $F(4, 1270) = 4.131$, $p < .01$, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor.

Tables 27. Interaction effect between Borna reading and early MoI on EFL reading

Tests of Between-Subjects Effects
Dependent Variable: EFL READING TEST SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	62846.144[a]	9	6982.905	53.029	.000	.273	1.000
Intercept	4374170.552	1	4374170.552	33218.196	.000	.963	1.000
READING_1	60020.898	4	15005.224	113.952	.000	.264	1.000
LOWER_GRADES_MOI	316.934	1	316.934	2.407	.021	.002	.841
READING_1 * LOWER_GRADES_MOI	**2176.099**	**4**	**544.025**	**4.131**	**.002**	**.013**	**.920**
Error	167233.544	1270	131.680				
Total	4683400.000	1280					
Corrected Total	230079.688	1279					

a. R Squared = .273 (Adjusted R Squared = .268)
b. Computed using alpha = .05

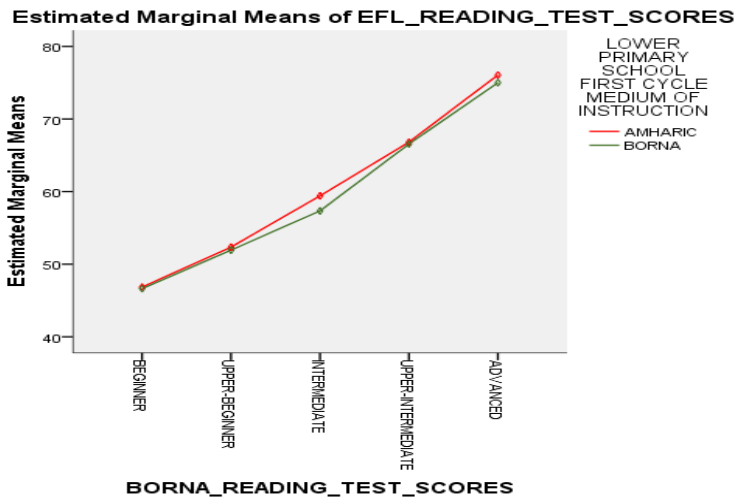
Pairwise Comparisons
Dependent Variable: EFL READING TEST SCORES

BORNA READING TEST SCORES	(I) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	(J) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 AMHARIC	1 BORNA	-3.84*	1.593	.047	-5.969	.280
	1 BORNA	0 Amharic	3.84*	1.593	.047	-.280	5.969
50 UPPER BEGINNER	0 AMHARIC	1 BORNA	-3.20*	1.336	.037	-3.819	1.424
	1 BORNA	0 Amharic	3.20*	1.336	.037	-1.424	3.819
60 INTERMEDIATE	0 AMHARIC	1 BORNA	-1.89	1.275	.051	1.617	6.620
	1 BORNA	0 Amharic	1.89	1.275	.051	-6.620	-1.617
70 UPPER INTERMEDIATE	0 AMHARIC	1 BORNA	-3.05*	1.521	.035	-.035	5.933
	1 BORNA	0 Amharic	3.05*	1.521	.035	-5.933	.035
80 ADVANCED	0 AMHARIC	1 BORNA	-2.79*	1.551	.018	-1.002	5.084
	1 BORNA	0 Amharic	2.79*	1.551	.018	-5.084	1.002

Based on estimated marginal means
a. Adjustment for multiple comparisons: Bonferroni.
*. The mean difference is significant at the .05 level.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there is interaction effect between the first language reading skill and lower grades medium of instruction (or initial language of instructions) on the development of foreign language reading skill.

Figure 9. Interaction effect between Borna reading and early MoI on EFL reading



B. Borna Writing and Early Grades MoI on EFL Writing

A two-way analysis of variance was conducted on the influence of two independent variables (Borna writing performance Test Scores and Early Grades Medium of Instruction) on the scores of EFL writing Performance Test). Borna writing performance test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Early Grades Medium of Instruction consisted of two levels (Borna and Amharic). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language writing performance skill yielded an F ratio of $F(4, 1270) = 143.948$, $p < .001$, indicating a significant difference between Beginner (M= 49.34, SD= 13.87), Upper-Beginner (M= 54.00, SD= 9.96), Intermediate (M= 58.34, SD= 8.39), Upper-Intermediate (M= 65.40, SD= 9.68), and Advanced (M= 71.30, SD= 13.12). The simple main effect for Early Grades Medium of Instruction yielded an F ratio of $F(1, 1270) = 13.008$, $p < .001$, indicating that the effect for Early Grades Medium of Instruction was statistically significant, Amharic (M= 58.56, SD=

11.31) and Borna (M= 60.79, SD= 10.70). The interaction effect was also significant, F(4, 1270) = 3.119, p < .05, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor.

Tables 28. Interaction effect between Borna writing and early MoI on EFL writing

Tests of Between-Subjects Effects
Dependent Variable: EFL WRITING TEST SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	70241.417[a]	9	7804.602	66.286	.000	.320	1.000
Intercept	4398048.011	1	4398048.011	37353.656	.000	.967	1.000
WRITING_1	67793.968	4	16948.492	143.948	.000	.312	1.000
LOWER_GRADES_MOI	1531.626	1	1531.626	13.008	.000	.010	.950
WRITING_1 * LOWER_GRADES_MOI	**1469.124**	**4**	**367.281**	**3.119**	**.014**	**.010**	**.818**
Error	149530.770	1270	117.741				
Total	4739400.000	1280					
Corrected Total	219772.187	1279					

a. R Squared = .320 (Adjusted R Squared = .315)
b. Computed using alpha = .05

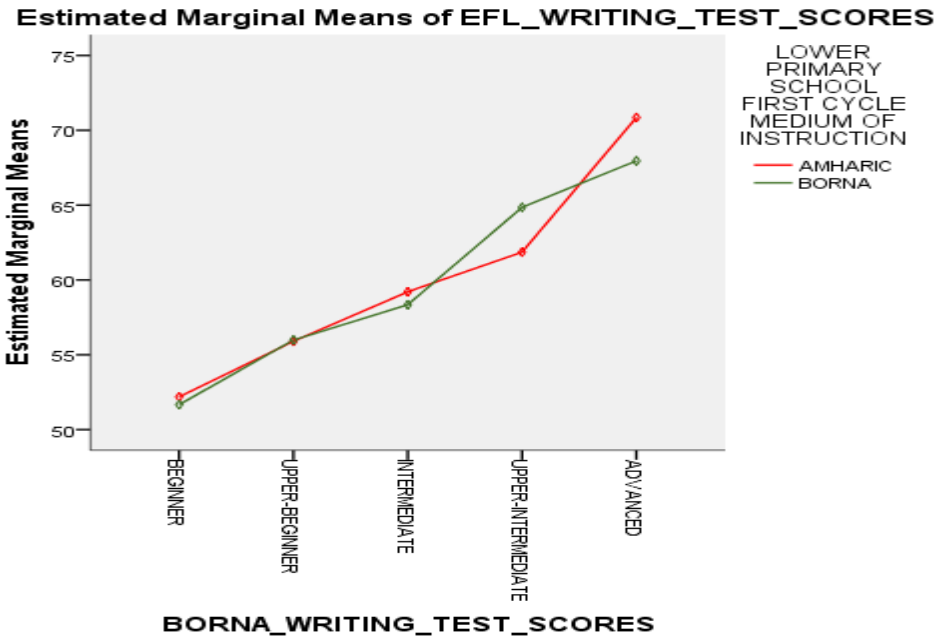
Pairwise Comparisons
Dependent Variable: EFL WRITING TEST SCORES

BORNA WRITING TEST SCORES	(I) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	(J) PRIMAY SCHOOL FIRST CYCLE MEDIUM OF INSTRUCTION	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 Amharic	1 BORNA	-.940	1.498	.530	-3.878	1.998
	1 BORNA	0 Amharic	.940	1.498	.530	-1.998	3.878
50 UPPER BEGINNER	0 Amharic	1 BORNA	1.233	1.331	.354	-1.378	3.844
	1 BORNA	0 Amharic	-1.233	1.331	.354	-3.844	1.378
60 INTERMEDIATE	0 Amharic	1 BORNA	-2.447*	1.168	.036	-4.738	-.156
	1 BORNA	0 Amharic	2.447*	1.168	.036	.156	4.738
70 UPPER INTERMEDIATE	0 Amharic	1 BORNA	-4.124*	1.375	.003	-6.821	-1.427
	1 BORNA	0 Amharic	4.124*	1.375	.003	1.427	6.821
80 ADVANCED	0 Amharic	1 BORNA	-4.858*	1.505	.001	-7.810	-1.905
	1 BORNA	0 Amharic	4.858*	1.505	.001	1.905	7.810

Based on estimated marginal means
a. Adjustment for multiple comparisons: Bonferroni.
*. The mean difference is significant at the .05 level.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the two lines zigzag through each other, which means there is interaction effect between the first language writing skill and lower grades medium of instruction (or initial language of instructions) on the development of foreign language writing skill.

Figure 10. Interaction effect between Borna writing and early MoI on EFL writing



4.5.3. Interaction Effects of Borna Literacy Skills and Knowledge of Additional L2s on Amharic and EFL Literacy Skills

4.5.3.1. The Effects of Borna Literacy Skills and Knowledge of Additional L2s on Amharic Literacy Skills

A factorial ANOVA was conducted to determine the interaction effect of Borna language literacy skills and Knowledge of More L2s on Amharic language literacy skills.

A. Borna Reading and Knowledge of Additional L2s Effect on Amharic Reading

A two-way analysis of variance was conducted on the influence of two independent variables (Borna Reading Comprehension Test Scores and Knowledge of More L2s) on the scores of Amharic Reading Comprehension Test). Borna reading test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Knowledge of More L2s consisted of three levels (No More L2s, One More L2s and Two More L2s). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language reading comprehension skill yielded an F ratio of $F(4, 1265) = 27.463$, $p < .001$, indicating a significant difference between Beginner ($M= 55.34$, $SD= 13.78$), Upper-Beginner ($M= 56.03$, $SD= 11.36$), Intermediate ($M= 57.64$, $SD= 9.77$), Upper-Intermediate ($M= 62.60$, $SD= 10.83$), and Advanced ($M= 66.01$, $SD= 13.42$). The simple main effect for Knowledge of More L2s yielded an F ratio of $F(2, 1265) = 65.435$, $p < .001$, indicating that the effect for Knowledge of More L2s was statistically significant, No More L2s ($M= 54.81$, $SD= 10.74$) One More L2s ($M= 58.45$, $SD= 11.90$) and Two More L2s ($M= 65.31$, $SD= 12.86$). The interaction effect was significant, $F(8, 1265) = 2.847$, $p < .01$, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor.

Tables 29. Interaction effect between Borna reading and Knowledge of Additional L2s on Amharic reading

Tests of Between-Subjects Effects
Dependent Variable: AMHARIC READING TEST SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	54152.917[a]	14	3868.066	28.069	.000	.637	1.000
Intercept	3476819.569	1	3476819.569	25229.452	.000	.952	1.000
READING_1	15138.427	4	3784.607	27.463	.000	.080	1.000
MORE_L2s	18034.836	2	9017.418	65.435	.000	.094	1.000
READING_1 * MORE_L2s	**3138.741**	**8**	**392.343**	**2.847**	**.004**	**.018**	**.949**
Error	174327.083	1265	137.808				
Total	4760000.000	1280					
Corrected Total	228480.000	1279					

a. R Squared = .637 (Adjusted R Squared = .629)
b. Computed using alpha = .05

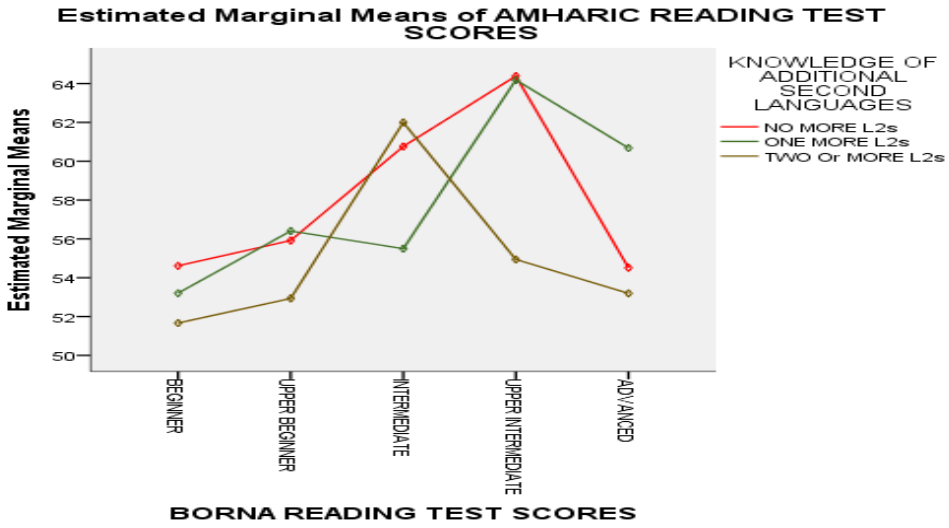
Pairwise Comparisons
Dependent Variable: AMHARIC READING TEST SCORES

BORNA READING TEST SCORES	(I) KNOWLEDGE OF ADDITIONAL SECOND LANGUAGES	(J) KNOWLEDGE OF ADDITIONAL SECOND LANGUAGES	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 NO MORE L2s	1 ONE MORE L2s	-5.200	2.207	.056	-10.491	.090
		2 TWO Or MORE L2s	-13.904*	2.371	.000	-19.588	-8.221
	1 ONE MORE L2s	0 NO MORE L2s	5.200	2.207	.056	-.090	10.491
		2 TWO Or MORE L2s	-8.704*	1.851	.000	-13.141	-4.267
	2 TWO Or MORE L2s	0 NO MORE L2s	13.904*	2.371	.000	8.221	19.588
		1 ONE MORE L2s	8.704*	1.851	.000	4.267	13.141
50 UPPER BEGINNER	0 NO MORE L2s	1 ONE MORE L2s	-2.489	1.767	.478	-6.726	1.748
		2 TWO Or MORE L2s	-9.479*	1.571	.000	-13.246	-5.713
	1 ONE MORE L2s	0 NO MORE L2s	2.489	1.767	.478	-1.748	6.726
		2 TWO Or MORE L2s	-6.990*	1.911	.001	-11.571	-2.410
	2 TWO Or MORE L2s	0 NO MORE L2s	9.479*	1.571	.000	5.713	13.246
		1 ONE MORE L2s	6.990*	1.911	.001	2.410	11.571
60 INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2s	-2.799	1.387	.131	-6.125	.526
		2 TWO Or MORE L2s	-4.937	2.193	.074	-10.194	.320
	1 ONE MORE L2s	0 NO MORE L2s	2.799	1.387	.131	-.526	6.125
		2 TWO Or MORE L2s	-2.137	2.234	1.000	-7.492	3.217
	2 TWO Or MORE L2s	0 NO MORE L2s	4.937	2.193	.074	-.320	10.194
		1 ONE MORE L2s	2.137	2.234	1.000	-3.217	7.492
70 UPPER INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2s	-5.610*	2.005	.016	-10.416	-.804
		2 TWO Or MORE L2s	-16.912*	2.010	.000	-21.730	-12.095
	1 ONE MORE L2s	0 NO MORE L2s	5.610*	2.005	.016	.804	10.416
		2 TWO Or MORE L2s	-11.302*	1.795	.000	-15.606	-6.998
	2 TWO Or MORE L2s	0 NO MORE L2s	16.912*	2.010	.000	12.095	21.730
		1 ONE MORE L2s	11.302*	1.795	.000	6.998	15.606
80 ADVANCED	0 NO MORE L2s	1 ONE MORE L2s	-2.097	2.753	1.000	-8.695	4.502
		2 TWO Or MORE L2s	-7.233*	2.320	.006	-12.795	-1.671
	1 ONE MORE L2s	0 NO MORE L2s	2.097	2.753	1.000	-4.502	8.695
		2 TWO Or MORE L2s	-5.136*	2.017	.033	-9.972	-.300
	2 TWO Or MORE L2s	0 NO MORE L2s	7.233*	2.320	.006	1.671	12.795
		1 ONE MORE L2s	5.136*	2.017	.033	.300	9.972

Based on estimated marginal means
a. Adjustment for multiple comparisons: Bonferroni.
*. The mean difference is significant at the .05 level.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the three lines zigzag through each other, which means there is interaction effect between the first language reading skill and knowledge of additional second languages on the development of second language reading skill.

Figure 11. Interaction effect between Borna reading and Knowledge of Additional L2s on Amharic reading



B. Borna Writing and Knowledge of Additional L2s Effect on Amharic Writing

A two-way analysis of variance was conducted on the influence of two independent variables (Borna writing performance Test Scores and Knowledge of More L2s) on the scores of Amharic writing Performance Test). Borna writing performance test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Knowledge of More L2s consisted of three levels (No More L2s, One More L2s and Two More L2s). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language writing performance

skill yielded an F ratio of F(4, 1265) = 60.009, p < .001, indicating a significant difference between Beginner (M= 50.61, SD= 13.13), Upper-Beginner (M= 54.08, SD= 10.65), Intermediate (M= 58.13, SD= 9.09), Upper-Intermediate (M= 62.60, SD= 11.24), and Advanced (M= 69.65, SD= 14.64). The simple main effect for Knowledge of More L2s yielded an F ratio of F(2, 1265) = 10.265, p < .001, indicating that the effect for Knowledge of More L2s was statistically significant, No More L2s (M= 61.51, SD= 11.73) One More L2s (M= 58.48, SD= 12.13) and Two More L2s (M= 57.05, SD= 11.38). The interaction effect was also significant, F(8, 1265) = 1.737, p < .05, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor and vise-versa.

Tables 30. Interaction effect between Borna writing and Knowledge of Additional L2s on Amharic writing

Tests of Between-Subjects Effects
Dependent Variable: AMHARIC_WRITING_TEST_SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	44689.055[a]	14	3192.075	22.277	.000	.198	1.000
Intercept	3198542.893	1	3198542.893	22322.430	.000	.946	1.000
WRITING_1	34394.600	4	8598.650	60.009	.000	.159	1.000
MORE_L2s	2941.773	2	1470.886	10.265	.000	.016	.987
WRITING_1 * MORE_L2s	**1990.736**	**8**	**248.842**	**1.737**	**.049**	**.011**	**.875**
Error	181259.695	1265	143.288				
Total	4592400.000	1280					
Corrected Total	225948.750	1279					

a. R Squared = .198 (Adjusted R Squared = .189)
b. Computed using alpha = .05

Pairwise Comparisons

Dependent Variable: AMHARIC_WRITING_TEST_SCORES

BORNA_WRITING_TEST_SCORES	(I) KNOWLEDGE OF INDIGENOUS SECOND LANGUAGES THAN AMHARIC	(J) KNOWLEDGE OF INDIGENOUS SECOND LANGUAGES OTHER THAN AMHARIC	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
						Lower Bound	Upper Bound
40 BEGINNER	0 NO MORE L2s	1 ONE MORE L2	6.619*	1.854	.000	2.982	10.257
		2 TWO MORE L2s	6.943*	2.097	.001	2.830	11.057
	1 ONE MORE L2	0 NO MORE L2s	-6.619*	1.854	.000	-10.257	-2.982
		2 TWO MORE L2s	.324	2.062	.875	-3.722	4.369
	2 TWO MORE L2s	0 NO MORE L2s	-6.943*	2.097	.001	-11.057	-2.830
		1 ONE MORE L2	-.324	2.062	.875	-4.369	3.722
50 UPPER-BEGINNER	0 NO MORE L2s	1 ONE MORE L2	.418	1.658	.801	-2.835	3.671
		2 TWO MORE L2s	1.689	1.738	.033	-1.720	5.098
	1 ONE MORE L2	0 NO MORE L2s	-.418	1.658	.801	-3.671	2.835
		2 TWO MORE L2s	1.271	1.986	.522	-2.625	5.167
	2 TWO MORE L2s	0 NO MORE L2s	-1.689	1.738	.033	-5.098	1.720
		1 ONE MORE L2	-1.271	1.986	.522	-5.167	2.625
60 INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2	-.773	1.524	.612	-3.763	2.218
		2 TWO MORE L2s	1.310	2.143	.541	-2.894	5.514
	1 ONE MORE L2	0 NO MORE L2s	.773	1.524	.612	-2.218	3.763
		2 TWO MORE L2s	2.083	2.213	.347	-2.259	6.424
	2 TWO MORE L2s	0 NO MORE L2s	-1.310	2.143	.541	-5.514	2.894
		1 ONE MORE L2	-2.083	2.213	.347	-6.424	2.259
70 UPPER-INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2	3.851	2.054	.061	-.180	7.881
		2 TWO MORE L2s	5.833*	2.161	.007	1.593	10.073
	1 ONE MORE L2	0 NO MORE L2s	-3.851	2.054	.061	-7.881	.180
		2 TWO MORE L2s	1.983	1.709	.246	-1.370	5.336
	2 TWO MORE L2s	0 NO MORE L2s	-5.833*	2.161	.007	-10.073	-1.593
		1 ONE MORE L2	-1.983	1.709	.246	-5.336	1.370
80 ADVANCED	0 NO MORE L2s	1 ONE MORE L2	5.015	3.392	.140	-1.640	11.670
		2 TWO MORE L2s	6.525*	2.837	.022	.959	12.091
	1 ONE MORE L2	0 NO MORE L2s	-5.015	3.392	.140	-11.670	1.640
		2 TWO MORE L2s	1.510	2.286	.509	-2.976	5.995
	2 TWO MORE L2s	0 NO MORE L2s	-6.525*	2.837	.022	-12.091	-.959
		1 ONE MORE L2	-1.510	2.286	.509	-5.995	2.976

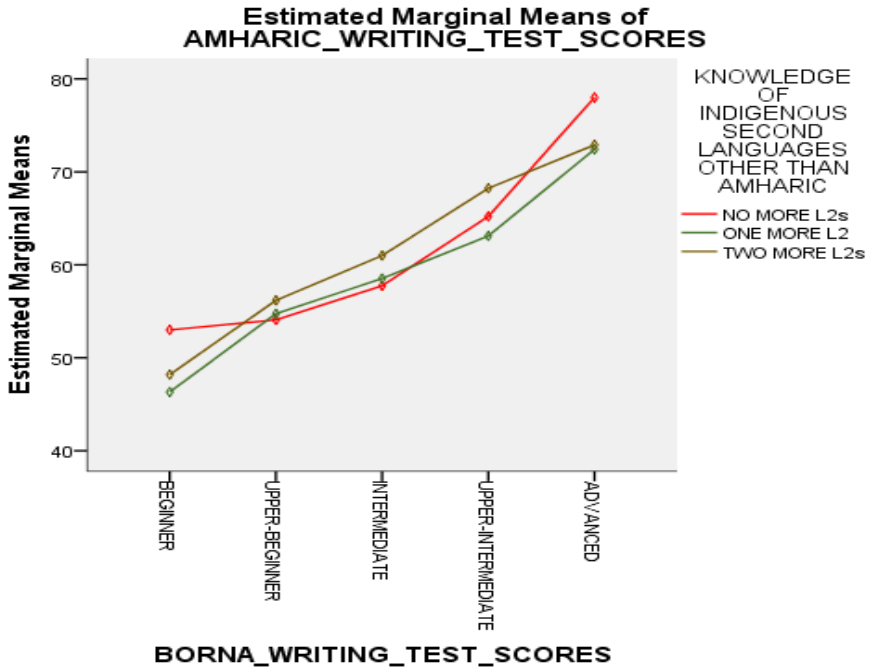
Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the three lines zigzag through each other, which means there is interaction effect between the first language writing skill and knowledge of additional second languages on the development of second language writing skill.

Figure 12. Interaction effect between Borna writing and Knowledge of Additional L2s on Amharic writing



4.5.3.2. The Effects of Borna Literacy Skills and Knowledge of Additional L2s on EFL Literacy Skills

A factorial ANOVA was conducted to determine the interaction effect of Borna language literacy skills and Knowledge of More L2s on English as a foreign language literacy skills.

A. Borna Reading and Knowledge of Additional L2s Effect On EFL Reading

A two-way analysis of variance was conducted on the influence of two independent variables (Borna Reading Comprehension Test Scores and Knowledge of More L2s) on the scores of EFL Reading Comprehension Test). Borna reading test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Knowledge of More L2s consisted of three levels (No More L2s, One More

L2s and Two More L2s). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language reading comprehension skill yielded an F ratio of F(4, 1265) = 79.633, p < .001, indicating a significant difference between Beginner (M= 50.01, SD= 13.31), Upper-Beginner (M= 53.24, SD= 8.09), Intermediate (M= 56.96, SD= 8.62), Upper-Intermediate (M= 63.76, SD= 10.90), and Advanced (M= 66.78, SD= 13.06). The simple main effect for Knowledge of More L2s yielded an F ratio of F(2, 1265) = 86.913, p < .001, indicating that the effect for Knowledge of More L2s was statistically significant, No More L2s (M= 52.05, SD= 10.82) One More L2s (M= 59.11, SD= 9.91) and Two More L2s (M= 63.29, SD= 11.66). The interaction effect was also significant, F(8, 1265) = 8.593, p < .001, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor and vice versa.

Tables 31. Interaction effect between Borna reading and Knowledge of Additional L2s on EFL reading

Tests of Between-Subjects Effects
Dependent Variable: EFL READING TEST SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	86738.159[a]	14	6195.583	54.676	.000	.377	1.000
Intercept	3318016.285	1	3318016.285	29281.748	.000	.959	1.000
READING_1	36094.080	4	9023.520	79.633	.000	.201	1.000
MORE_L2s	19696.882	2	9848.441	86.913	.000	.121	1.000
READING_1 * MORE_L2s	**7789.666**	**8**	**973.708**	**8.593**	**.000**	**.052**	**1.000**
Error	143341.529	1265	113.313				
Total	4683400.000	1280					
Corrected Total	230079.688	1279					

a. R Squared = .377 (Adjusted R Squared = .370)
b. Computed using alpha = .05

Pairwise Comparisons

Dependent Variable: EFL READING TEST SCORES

BORNA READING TEST SCORES	(I) KNOWLEDGE OF ADDITIONAL SECOND LANGUAGES	(J) KNOWLEDGE OF ADDITIONAL SECOND LANGUAGES	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 NO MORE L2s	1 ONE MORE L2s	-13.495*	2.001	.000	-18.293	-8.697
		2 TWO Or MORE L2s	-16.515*	2.150	.000	-21.669	-11.361
	1 ONE MORE L2s	0 NO MORE L2s	13.495*	2.001	.000	8.697	18.293
		2 TWO Or MORE L2s	-3.020	1.678	.217	-7.043	1.003
	2 TWO Or MORE L2s	0 NO MORE L2s	16.515*	2.150	.000	11.361	21.669
		1 ONE MORE L2s	3.020	1.678	.217	-1.003	7.043
50 UPPER BEGINNER	0 NO MORE L2s	1 ONE MORE L2s	1.252	1.603	1.000	-2.590	5.094
		2 TWO Or MORE L2s	-6.744*	1.425	.000	-10.159	-3.329
	1 ONE MORE L2s	0 NO MORE L2s	-1.252	1.603	1.000	-5.094	2.590
		2 TWO Or MORE L2s	-7.996*	1.733	.000	-12.149	-3.842
	2 TWO Or MORE L2s	0 NO MORE L2s	6.744*	1.425	.000	3.329	10.159
		1 ONE MORE L2s	7.996*	1.733	.000	3.842	12.149
60 INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2s	-5.048*	1.258	.000	-8.064	-2.033
		2 TWO Or MORE L2s	-2.363	1.989	.705	-7.131	2.404
	1 ONE MORE L2s	0 NO MORE L2s	5.048*	1.258	.000	2.033	8.064
		2 TWO Or MORE L2s	2.685	2.025	.556	-2.171	7.540
	2 TWO Or MORE L2s	0 NO MORE L2s	2.363	1.989	.705	-2.404	7.131
		1 ONE MORE L2s	-2.685	2.025	.556	-7.540	2.171
70 UPPER INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2s	-4.896*	1.818	.022	-9.254	-.538
		2 TWO Or MORE L2s	-12.693*	1.822	.000	-17.062	-8.325
	1 ONE MORE L2s	0 NO MORE L2s	4.896*	1.818	.022	.538	9.254
		2 TWO Or MORE L2s	-7.798*	1.628	.000	-11.700	-3.895
	2 TWO Or MORE L2s	0 NO MORE L2s	12.693*	1.822	.000	8.325	17.062
		1 ONE MORE L2s	7.798*	1.628	.000	3.895	11.700
80 ADVANCED	0 NO MORE L2s	1 ONE MORE L2s	-13.094*	2.496	.000	-19.077	-7.110
		2 TWO Or MORE L2s	-17.902*	2.104	.000	-22.945	-12.859
	1 ONE MORE L2s	0 NO MORE L2s	13.094*	2.496	.000	7.110	19.077
		2 TWO Or MORE L2s	-4.808*	1.829	.026	-9.193	-.423
	2 TWO Or MORE L2s	0 NO MORE L2s	17.902*	2.104	.000	12.859	22.945
		1 ONE MORE L2s	4.808*	1.829	.026	.423	9.193

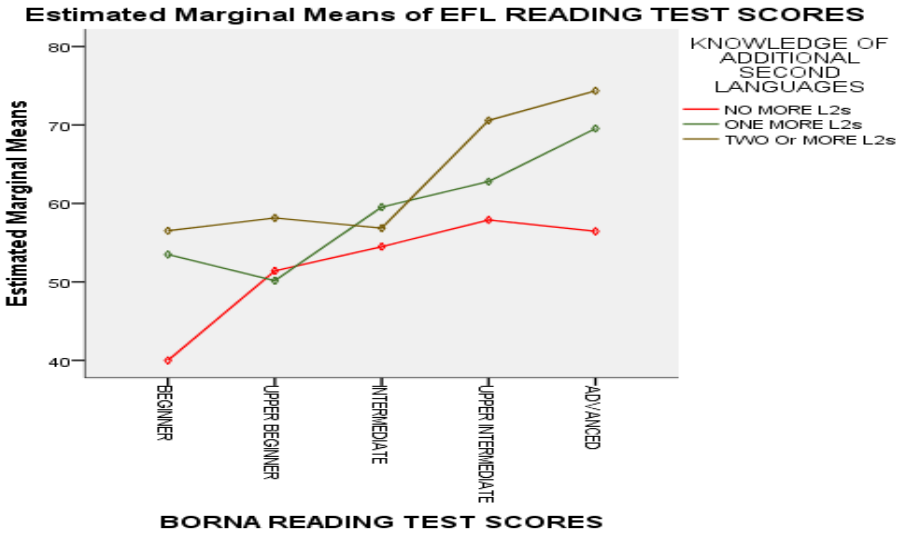
Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the three lines zigzag through each other, which means there is interaction effect between the first language reading skill and knowledge of additional second languages on the development of foreign language reading skill.

Figure 13. Interaction effect between Borna reading and Knowledge of Additional L2s on EFL reading



B. Borna Writing and Knowledge of Additional L2s Effect on EFL Writing

A two-way analysis of variance was conducted on the influence of two independent variables (Borna writing performance Test Scores and Knowledge of More L2s) on the scores of EFL writing Performance Test). Borna writing performance test scores included five levels of conditions (Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced) and Knowledge of More L2s consisted of three levels (No More L2s, One More L2s and Two More L2s). All effects were statistically significant at the alpha .05 significance level. The simple main effect for native language writing performance skill yielded an F ratio of $F(4, 1265) = 61.294$, $p < .001$, indicating a significant difference between Beginner ($M= 51.52$, $SD= 12.25$), Upper-Beginner ($M= 56.20$, $SD= 11.29$), Intermediate ($M= 59.47$, $SD= 10.13$), Upper-Intermediate ($M= 63.89$, $SD= 11.86$), and Advanced ($M= 70.55$, $SD= 13.70$). The simple main effect for Knowledge of More L2s yielded an F ratio of $F(2, 1265) =$

3.862, p < .05, indicating that the effect for Knowledge of More L2s was statistically significant, No More L2s (M= 61.82, SD= 9.70) One More L2s (M= 59.21, SD= 12.48) and Two More L2s (M= 59.95, SD= 13.36). The interaction effect was also significant, F(8, 1265) = 8.220, p < .001, indicating that the effects of the first factor on the response variable was dependent on the condition of the other factor and vice versa.

Tables 32. Interaction effect between Borna writing and Knowledge of Additional L2s on EFL writing

Tests of Between-Subjects Effects
Dependent Variable: EFL_WRITING_TEST_SCORES

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power[b]
Corrected Model	51740.340[a]	14	3695.739	27.325	.000	.232	1.000
Intercept	3342400.708	1	3342400.708	24712.312	.000	.951	1.000
WRITING_1	33160.676	4	8290.169	61.294	.000	.162	1.000
MORE_L2s	1044.581	2	522.291	3.862	.021	.006	.700
WRITING_1 * MORE_L2s	**8894.523**	**8**	**1111.815**	**8.220**	**.000**	**.049**	**1.000**
Error	171094.348	1265	135.252				
Total	4775800.000	1280					
Corrected Total	222834.687	1279					

a. R Squared = .232 (Adjusted R Squared = .224)
b. Computed using alpha = .05

Pairwise Comparisons
Dependent Variable: EFL_WRITING_TEST_SCORES

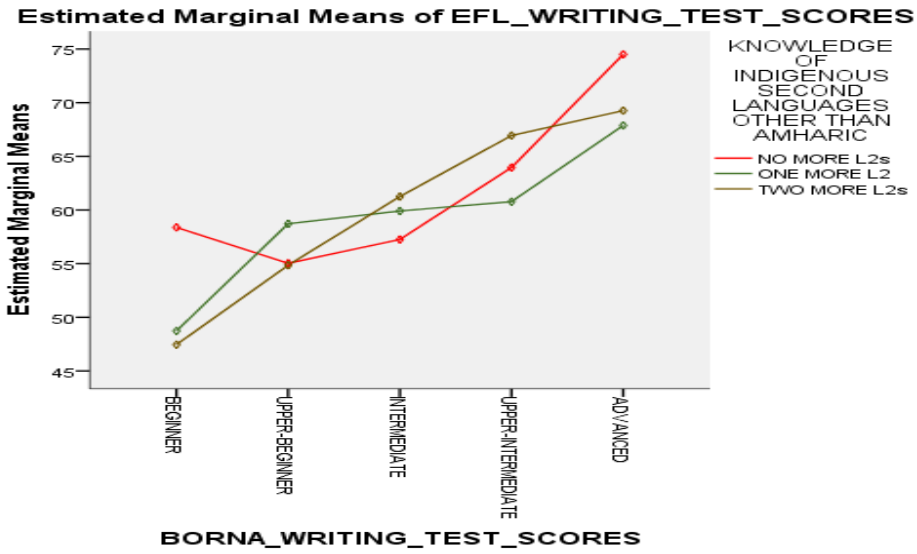
BORNA_WRITING_TEST_SCORES	(I) KNOWLEDGE OF INDIGENOUS LANGUAGES THAN AMHARIC	(J) KNOWLEDGE OF SECOND INDIGENOUS OTHER LANGUAGES THAN AMHARIC	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
40 BEGINNER	0 NO MORE L2s	1 ONE MORE L2	9.639*	1.801	.000	6.105	13.174
		2 TWO MORE L2s	10.920*	2.037	.000	6.924	14.917
	1 ONE MORE L2	0 NO MORE L2s	-9.639*	1.801	.000	-13.174	-6.105
		2 TWO MORE L2s	1.281	2.003	.523	-2.649	5.212
	2 TWO MORE L2s	0 NO MORE L2s	-10.920*	2.037	.000	-14.917	-6.924
		1 ONE MORE L2	-1.281	2.003	.523	-5.212	2.649
50 UPPER-BEGINNER	0 NO MORE L2s	1 ONE MORE L2	-3.686*	1.611	.022	-6.847	-.525
		2 TWO MORE L2s	.179	1.688	.916	-3.133	3.491
	1 ONE MORE L2	0 NO MORE L2s	3.686*	1.611	.022	.525	6.847
		2 TWO MORE L2s	3.865*	1.930	.045	.080	7.650
	2 TWO MORE L2s	0 NO MORE L2s	-.179	1.688	.916	-3.491	3.133
		1 ONE MORE L2	-3.865*	1.930	.045	-7.650	-.080
60 INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2	-2.655	1.481	.073	-5.560	.251
		2 TWO MORE L2s	-3.996	2.082	.055	-8.081	.088
	1 ONE MORE L2	0 NO MORE L2s	2.655	1.481	.073	-.251	5.560
		2 TWO MORE L2s	-1.342	2.150	.533	-5.560	2.876
	2 TWO MORE L2s	0 NO MORE L2s	3.996	2.082	.055	-.088	8.081
		1 ONE MORE L2	1.342	2.150	.533	-2.876	5.560
70 UPPER-INTERMEDIATE	0 NO MORE L2s	1 ONE MORE L2	3.182	1.996	.111	-.733	7.098
		2 TWO MORE L2s	-2.983	2.100	.156	-7.102	1.137
	1 ONE MORE L2	0 NO MORE L2s	-3.182	1.996	.111	-7.098	.733
		2 TWO MORE L2s	-6.165*	1.660	.000	-9.423	-2.908

	2 TWO MORE L2s	0 NO MORE L2s	2.983	2.100	.156	-1.137	7.102
		1 ONE MORE L2	6.165*	1.660	.000	2.908	9.423
80 ADVANCED	0 NO MORE L2s	1 ONE MORE L2	6.621*	3.296	.045	.156	13.087
		2 TWO MORE L2s	5.241	2.756	.057	-.167	10.648
	1 ONE MORE L2	0 NO MORE L2s	-6.621*	3.296	.045	-13.087	-.156
		2 TWO MORE L2s	-1.380	2.221	.534	-5.738	2.977
	2 TWO MORE L2s	0 NO MORE L2s	-5.241	2.756	.057	-10.648	.167
		1 ONE MORE L2	1.380	2.221	.534	-2.977	5.738

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
a. Adjustment for multiple comparisons: Bonferroni.

The figure below shows that there was an interaction effect between the factors. As it can be seen from the figure below, the three lines zigzag through each other, which means there is interaction effect between the first language writing skill and knowledge of additional second languages on the development of foreign language writing skill.

Figure 14. Interaction effect between Borna writing and Knowledge of Additional L2s on EFL writing



Chapter Five

5. Discussions of Findings

5.1. Introduction

The purpose of this chapter is to discuss the findings from chapter four, and the data probed within the context of the conceptual underpinnings noted in chapter two of this study in an attempt to provide answers to the research questions.

The purpose of this study is to assess the cross-linguistic developmental influences between academic language skills, mainly reading and writing skills across three different languages: Borna, Amharic, and EFL in multilingual primary schools of Metekel Administrative Zone.

Overall, the results revealed that there were positive developmental interdependences across the three languages. More results of the study will now be summarized in relation to the literature review and with specific reference to the research questions that guided the research.

Based upon the analysis of the data, the three main themes are identified as follows: (I) Correlations between academic language skills (II) bidirectional predictive relationships between academic language skills across Borna, Amharic, and EFL, and (III) Interaction effects between academic language skills and other demographic variables on the interdependence between academic language skills across the three languages.

5.2. Correlations Between Academic Language Skills Across Borna, Amharic, And EFL

The statistical analyses that were performed to determine the developmental influences between academic language proficiencies across Borna, Amharic, and EFL – the three very different languages in terms of sociolinguistic status, language typology, and orthographic system- had shown a variety of outputs.

To begin with, the first research question was to assess whether there was a positive correlation between academic language skills across these three languages. Accordingly, the data had revealed statistically significant correlations that range from the weaker to the stronger ones.

The person's product moment correlations between academic language skills across first, second, and foreign languages had indicated that there were statistically significant positive relationships between reading and writing skills as well as knowledge of grammar and vocabulary. While the relationships were significant, they were not perfectly correlated across these languages. Nonetheless, the results suggested some general implications for the existence of common underlying interdependencies between cognitive/academic language proficiencies across languages.

5.3. Borna Literacy Skills Predicting Literacy Skills Across Amharic and EFL

Young multilingual language learners have two and more primary sources from which to construct a second and/or third (foreign) academic language and literacy skills: knowledge of their first language and input from their second and/or third (foreign) language. Those

students who are already literate in their native language – and are acquiring their second language and/or foreign language through formal schooling- have these same sources available to them as they are developing academic language and literacy skills in their second and third languages. In other words, these language learners can draw on their literacy skills and knowledge of literacy practices from their first language (Interlingua transfer) and can utilize the input from literacy activities- for example reading and writing (intralingua inputs) in the acquisition and development of cognitive/academic language and literacy skills in their second and third/foreign languages.

Having said this, the second research question was to examine the predictive relationships between academic language skills across Borna, Amharic, and EFL, and the study had pointed out the following results.

5.3.1. Developmental Interdependence Between Borna and Amharic Literacy Skills

The finding explained that 45% of students' performance on Amharic academic reading skill test was predicted by their performance on Borna academic reading skill test. In this case, the level of mother tongue reading skill had a moderate influence on the level of second language reading skill. As a result, developmental changes in Borna reading skill lead to developmental changes in Amharic reading skill.

For interdependence between L1 and L2 writing skills, the finding showed that approximately 18% of students' performance on Amharic academic writing skill test was predicted by their performance on Borna academic writing skill test. This means that level of mother tongue writing skill had a very small effect on the level of second language

writing skill. In this case, other factors would have accounted for 82% of variation that was not explained by the explanatory variable. However, changes in Borna writing skill were associated with changes in Amharic writing skill.

In general, these findings suggested that the extent to which first language academic and literacy skills can be transferred to second language or influence the development of second language academic and literacy skills may vary depending on the literacy skills and the level of students proficiency in that particular literacy skill.

With regard to whether Borna language and literacy skills show statistically significant different predictive power toward the corresponding skills of Amharic and English languages, the findings showed statistically significantly different predictive values of Borna language skills across the literacy skills of Amharic and EFL.

As such, when all of Borna language independent variables were included in hierarchical regression analysis model, they were significant predictors of Amharic reading scores. The most important predictor of Amharic reading scores was Borna vocabulary scores, which uniquely explained 1.3% of the variation in Amharic reading scores. Together the four Borna language independent variables accounted for 55.3% of the variance in Amharic reading scores. Hence, the effects of Borna academic language and literacy skills had large effect on the development of Amharic reading skill.

Similarly, the hierarchical regression analysis model revealed that all of Borna language independent variables were significant predictors of Amharic writing scores. The most important predictor of Amharic writing scores was again Borna grammar scores, which distinctively explained .5% of the variation in Amharic reading scores. Together the four

Borna language independent variables accounted for 35.7% of the variance in Amharic writing scores. Hence, the effects of Borna academic language and literacy skills had medium effect on the development of Amharic writing skill. Generally, the facilitation effect of Borna academic language and literacy skills was different for the acquisition/development of Amharic reading and writing skills, (55.3% and 35.7%) respectively. In general, the developmental influence of L1 literacy skills on the development of L2 literacy skills is similar with other findings such as discussed below.

A number of studies also explored the effect of L1 literacy on the development of L2 literacy skills (e.g. Royer & Carlo, 1991; Reese et al., 2000; Langer et al., 1990). These studies found that the relationship between literacy in the L1 and the L2 is at least as significant as, if not more significant than, that between L2 oral development and L2 literacy. Besides, Reese, Garnier, Gallimore and Goldenberg (2000), found that early L1 reading abilities were a significant predictor of English reading abilities assessed eight years later.

In writing about the benefits of L1 literacy, Hudleson (1987) noted that, "it develops in children an understanding of what reading and writing are for" and "native language literacy provided the children with resources to use as they moved into second language reading and writing." (Hudleson, 1987, as cited in Swain et al., 1990:67). In a study of L2 writing among grade 4-5 Hispanic ELLs, Lanauze and Snow (1989) found that ELLs exhibited similar profiles with respect to the complexity, sophistication, and semantic content of their writing in both their L1 and L2; this was evident even for students who

were not orally proficient in their L2. These findings suggest that ELLs are able to apply proficiencies developed in their L1 to L2 literacy tasks.

Swain, Lapkin, Rowen and Hart (1990) stated that "even when two languages use different writing systems, readers are able to apply the visual, linguistic, and cognitive strategies they use in first language reading to reading in the second language." (1990:67).

5.3.2. Developmental Interdependence Between Borna and EFL Literacy Skills

The findings for the developmental interdependence between Borna and English academic reading skills, the multiple R, (r^2 = .518) explained that nearly 52% of students' performance on EFL academic reading skill test was predicted by their performance on Borna academic reading skill test. This means that level of mother tongue reading skill had a large effect on the level of foreign language reading skill. Accordingly, changes in Borna reading skill lead to changes in EFL reading skill.

Finally, the result pointed out that nearly 19% of students' performance on EFL academic writing skill test was predicted by their performance on Borna academic writing skill test. This means that level of mother tongue writing skill had a rather small effect on the level of foreign language writing skill. This may suggest that 81% of variation in EFL academic writing test scores was associated with variation in other factors. Nonetheless, changes in Borna writing skill bring about changes in EFL writing skill.

In general, these findings suggested that the extent to which first language academic language and literacy skills can be transferred to third/foreign language or influence the development of third/foreign language academic and literacy skills may vary depending on

the literacy skills and the level of students proficiency in that particular literacy skill. Moreover, these findings suggested that lately acquired language could also influence and facilitate the development of the already acquired language(s) in a way that the latter did influence and facilitate the development of the former.

In addition to this, when all of Borna language independent variables were included in hierarchical regression model, they were significant predictors of EFL reading scores. The most important predictor of EFL reading scores was Borna grammar scores, which uniquely explained 1.1% of the variation in EFL reading scores. Together the four independent variables accounted for 84% of the variance in EFL reading scores. Hence, the effects of Borna academic language and literacy skills had largest effect on the development of EFL reading skill.

In parallel way, when all of Borna language independent variables were included in hierarchical regression model, they were significant predictors of EFL writing scores. The most important predictor of EFL writing scores was Borna vocabulary scores, which uniquely explained 25% of the variation in EFL writing scores. Together the four independent variables accounted for 73% of the variance in EFL writing scores. Hence, the effects of Borna academic language and literacy skills had a rather larger effect on the development of EFL writing skill. In sum, the facilitation effect of Borna academic language and literacy skills was different for the acquisition/development of EFL reading skills and writing skills: 84% and 73% respectively.

5.4. Amharic Literacy Skills Predicting Literacy Skills Across Borna and EFL

5.4.1. Developmental interdependence between Amharic and Borna Literacy Skills

Like it was for L1 reading skills, the multiple R, (r^2 = .448) explained that almost 45% of students' performance on Borna academic reading skill test was predicted by their performance on Amharic academic reading skill test. This means that level of second language reading skill had medium effect on the level of Borna language reading skill. Accordingly, changes in Amharic reading skill lead to changes in Borna reading skill. Besides, the statistical predictive value that Borna reading skills had on Amharic reading skill was similar to that of the statistical predictive value that Amharic reading skill had onto Borna reading skill.

As to the developmental effect that Amharic writing skill had on Borna writing skill, the outcome indicated that nearly 18% of students' performance on Borna academic writing skill test was predicted by their performance on Amharic academic reading skill test. In this case, other factors would have accounted for 82% of variation that was not explained by the explanatory variable. However, changes in Amharic writing skill were associated with changes in Borna writing skill. Here, the statistical predictive value that Borna writing skills had on Amharic writing skill was similar to that of the statistical predictive value that Amharic writing skill had onto Borna writing skill.

In summary, these findings suggested that the extent to which second language academic and literacy skills can be transferred to first language or influence the development of first language academic and literacy skills may vary depending on the literacy skills and the

level of students proficiency in that particular literacy skill. Besides, these findings suggested that lately acquired language could influence and facilitate the development of the already acquired language(s) in a way that the latter did influence and facilitate the development of the former.

5.4.2. Predictive Relationships Between Amharic and EFL Literacy Skills

One of the typical findings of this study was that the languages that children are acquiring lately had shown statistically significant developmental influence on each other. As was seen earlier, Borna language literacy skills have statistically significant influences on the development of the corresponding skills in the second and foreign languages. In parallel fashion, there had been such developmental influences between the second and third/foreign languages independent of the first language.

Here, the result explained that 46.4% of students' performance on EFL academic reading skill test was predicted by their performance on Amharic academic reading skill test. This means that level of second language reading skill had a moderate effect on the level of foreign language reading skill. Accordingly, changes in Amharic reading skill lead to changes in EFL reading skill.

When it comes to writing skills, the multiple R, (r^2 = .150) explained that 15% of students' performance on EFL academic writing skill test was predicted by their performance on Amharic academic writing skill test. In this case, other factors would have accounted for 85% variation that was not explained by the explanatory variable. However, changes in Amharic writing skill were associated with changes in EFL writing skill.

In general, these findings suggested that the extent to which second language academic literacy skills can be transferred to foreign language or influence the development of foreign language academic and literacy skills may vary depending on the literacy modality and the level of students proficiency in that particular literacy skills.

This finding is also similar with the following scholars. As such, Swain, Lapkin, Rowen and Hart (1990) showed that "literacy knowledge in the heritage language, regardless of whether learners are currently making use of those literacy skills, has a strong positive impact on the learning of a third language." (1990:73). They also found that "…heritage language use without literacy has little effect." (1990:65).

5.5. EFL Literacy Skills Predicting Literacy Skills Across Borna and Amharic

5.5.1. Developmental interdependence between EFL and Borna Literacy Skills

The result, which was the multiple R, (r^2 = .518), explained that nearly 52% of students' performance on EFL academic reading skill test predicted their performance on Borna academic reading skill test. In other words, level of foreign language reading skill had a relatively larger effect on the level of Borna language reading skill. Accordingly, changes in EFL reading skill lead to changes in Borna reading skill. Besides, the statistical predictive value that Borna reading skills had on EFL reading skill was similar to that of the statistical predictive value that EFL reading skill had onto Borna reading skill.

For the cross-linguistic influence between foreign and native language writing skills, the analysis explained that around 19% of students' performance on EFL academic writing skill test predicted their performance on Borna academic writing skill performance. In this case,

other factors would have accounted for 81% variation that was not explained by the explanatory variable. Nonetheless, changes in EFL writing skill were associated with changes in Borna writing skill.

Over all, these findings suggested that the extent to which foreign language academic and literacy skills be transferred to Borna language or influence the development of Borna language academic and literacy skills may vary depending on the literacy modality and the level of student's proficiency in that particular literacy modality and language per se.

5.5.2. Developmental interdependence between EFL and Amharic Literacy Skills

The multiple R, (r^2 = .464) explained that 46.4% of students' performance on EFL academic reading skill test predicted their performance on Amharic academic reading skill test. This means that level of foreign language reading skill had a relatively medium effect on the level of second language reading skill. Therefore, changes in EFL reading skill lead to changes in Amharic reading skill.

For the developmental interdependence between EFL and Amharic writing skills, the multiple R, (r^2 = .150) explained that 15% of students' performance on EFL academic writing skill test predicted their performance on Amharic academic writing skill test. In this case, other variables would have accounted for 85% variation that was not explained by the explanatory variable. However, changes in EFL writing skill were associated with changes in Amharic writing skill.

Generally, these findings suggested that the extent to which foreign language academic and literacy skills can be transferred to second language or influence the development of

second language academic and literacy skills may vary depending on the literacy modality and the level of students proficiency in that particular literacy modality.

5.6. The Interaction Effects of Borna Literacy skills and Gender on Amharic and EFL Literacy Skills

5.6.1. Borna Literacy Skill with Gender Effect on Amharic Literacy Skills

The influence of Borna reading skill and Gender on the Amharic reading skill indicated that all effects were statistically significant except for the gender factor. The simple main effect for Borna language reading skill yielded a significant difference between beginner, upper-Beginner, intermediate, upper-intermediate, and advanced groups. The simple main effect for gender was not statistically significant, yet the interaction effect was statistically significant indicating that the effects of first language reading skill on second language reading skill was dependent on the condition of the gender factor- female and male. Similarly, the influence of Borna writing skill and gender on the Amharic writing skills was statistically significantly denoted that the effects of first language writing skill on second language writing skill was dependent on the condition of the gender factor- female and male as well.

5.6.2. Borna literacy skills with Gender Effect on EFL Literacy Skills

Results from a two-way analysis of variance on the influence of Borna reading skill and Gender on EFL Reading skill revealed that all effects were statistically significant except for the gender factor. The simple main effect for Borna language reading comprehension skill yielded a significant difference between Beginner Upper-Beginner, Intermediate, Upper-

Intermediate, and Advanced. The simple main effect for gender was not statistically significant. The interaction effect was significant, indicating that the effects of first language reading skill on the EFL reading skill was dependent on the condition of the gender factor.

In similar fashion, the influence of Borna writing skill and gender on the EFL writing skills was statistically significant denoting that the effects of first language writing skill on foreign language writing skill was dependent on the level of the gender factor- female and male as well.

5.7. The Interaction Effects of Borna Literacy Skills and Early Grades Medium of Instruction (MoI) on Amharic and EFL Literacy Skills

5.7.1. Borna Literacy Skills and Early Grades MoI Effects on Amharic Literacy Skills

From a factorial ANOVA conducted to determine the interaction effect between Borna language literacy skills and early grades medium of instruction on Amharic language and literacy skills, it was observed that all of the effects were statistically significant at the alpha .05 significance level. The simple main effect for Borna language reading comprehension skill showed a significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced. The simple main effect for Early Grades Medium of Instruction indicated that the effect for Early Grades Medium of Instruction was statistically significant. Moreover, the interaction effect was also significant, which indicated that the effects of the first language reading skill on second language reading skill was dependent on the condition of the early grades medium of instruction.

Equally, regarding to the influences of Borna language writing skill and Early Grades Medium of Instruction on Amharic writing skills, all of the effects were statistically significant. The simple main effect for Borna language writing skill was statistically significant indicating that there was a significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced levels. The simple main effect for Early Grades Medium of Instruction yielded a statistically significant result indicating that there was a significant difference between early grades medium of instructions: Amharic and Borna. Moreover, the finding showed that there was an interaction effect between the two factors which was also significant indicating that the effects of the first language writing skill on second language writing skill was dependent on the condition of the early grades medium of instruction factor.

5.7.2. Borna Literacy Skills and Early Grades MoI Effects on EFL Literacy Skills

The result from a two-way analysis of variance conducted on the influence of two independent variables: Borna Reading skill and Early Grades Medium of Instruction, on the EFL Reading skill revealed that all effects were statistically significant at the alpha .05 significance level. The simple main effect for Borna language reading comprehension skill produced a significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced. The simple main effect for Early Grades Medium of Instruction pointed out that the effect for Early Grades Medium of Instruction was statistically significant, Amharic and Borna. The interaction effect was also significant; hence, indicating that the effect of the Borna Reading skill on EFL Reading skill was dependent on the type of early grades medium of instruction.

In parallel fashion, when it comes to the influences of Borna language writing skill and early grades medium of instruction on EFL writing skills, all of the effects were statistically significant. The simple main effect for Borna language writing skill was statistically significant indicating that there was a significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced levels. The simple main effect for early grades medium of instruction bore a statistically significant result indicating that there was a significant difference between the type of school language used as early grades medium of instructions: Amharic and Borna. Furthermore, the finding showed that there was an interaction effect between the two factors which was also significant indicating that the effects of the first language writing skill on foreign language writing skill was dependent on the condition of the type of school language used as early grades medium of instructions.

5.8. The Interaction Effects of Borna Literacy Skills and Knowledge of Additional L2s on Amharic and EFL Literacy Skills

As usual, data from a factorial ANOVA performed to determine the interaction effect of Borna language literacy skills and Knowledge of More L2s on second language literacy skills bore the following findings.

5.8.1. Borna Literacy Skills and Knowledge of More L2s on Effects on Amharic Literacy Skills

A two-way analysis of variance was conducted on the influence of Borna reading skill and knowledge of more L2s on Amharic Reading skill all of the effects were statistically significant at the alpha .05 significance level. As such, the simple main effect for Borna

language reading comprehension skill pointed out that there was a statistically significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced groups. Equally, the simple main effect for Knowledge of More L2s indicated that the effect was statistically significant, which further implied that there was statistically significant difference between No More L2s, One More L2s, and Two More L2s. Above all the interaction effect was also significant, indicating that the effects of the first language reading skill on second language reading skill was dependent on the condition of knowledge of additional second language(s).

In Parallel manner, result from the influence of Borna writing skill and knowledge of more L2s on Amharic writing skill presented that all of the effects were statistically significant at the alpha .05 significance level. In other words, the simple main effect for Borna language writing skill pointed out that there was a statistically significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced groups. Similarly, the simple main effect for Knowledge of More L2s indicated that the effect was statistically significant, which further revealed that there was statistically significant difference between No More L2s, One More L2s, and Two More L2s groups. Above all, the interaction effect was also significant, indicating that the effects of the first language writing skill on second language writing skill was dependent on the linguistic repertoire a student has on disposal, which is knowledge of additional second language(s).

5.8.2. Borna Literacy Skills and Knowledge of Additional L2s Effects on EFL Literacy Skills

A two-way analysis of variance was conducted on the influence of Borna reading skill and knowledge of more L2s on EFL Reading skill all of the effects were statistically significant at the alpha .05 significance level. As such, the simple main effect for Borna language reading comprehension skill pointed out that there was a statistically significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced groups. Equally, the simple main effect for Knowledge of More L2s indicated that the effect was statistically significant, which further implied that there was statistically significant difference between No More L2s, One More L2s, and Two More L2s. Above all the interaction effect was also significant, indicating that the effects of the first language reading skill on foreign language reading skill was dependent on the condition of knowledge of additional second language(s).

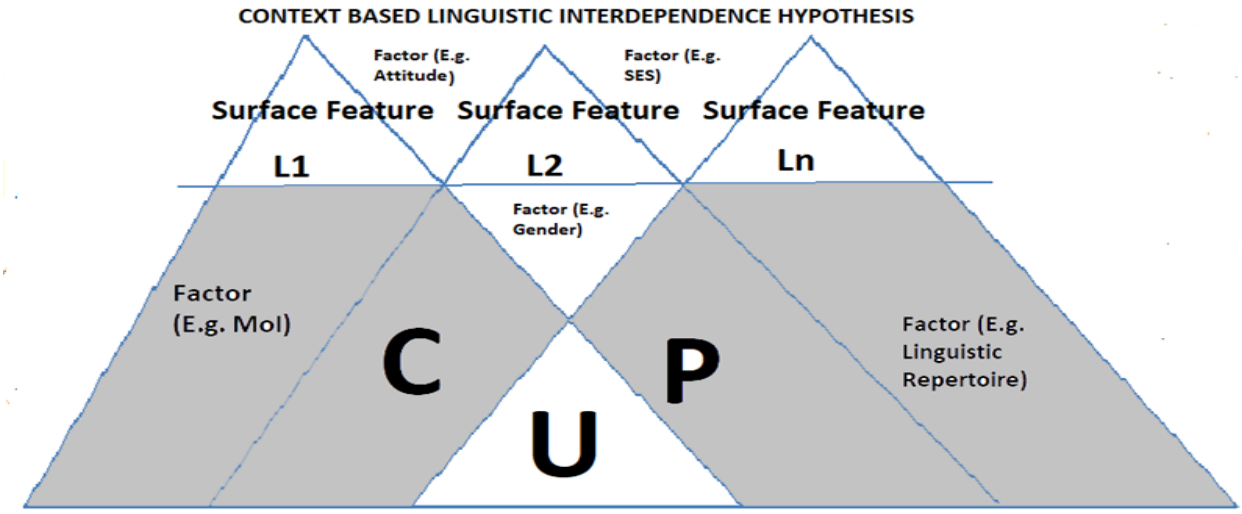
In similar manner, result from the influence of Borna writing skill and knowledge of more L2s on EFL writing skill presented that all of the effects were statistically significant at the alpha .05 significance level. In other words, the simple main effect for Borna language writing skill pointed out that there was a statistically significant difference between Beginner, Upper-Beginner, Intermediate, Upper-Intermediate, and Advanced groups. Similarly, the simple main effect for Knowledge of More L2s indicated that the effect was statistically significant, which further revealed that there was statistically significant difference between No More L2s, One More L2s, and Two More L2s groups. Above all, the interaction effect was also significant, indicating that the effects of the first language

writing skill on foreign language writing skill was dependent on the linguistic repertoire a student has on disposal, which is knowledge of additional second language(s).

In general, the results showed that the linguistic interdependence hypothesis might not have only a unidirectional facilitation effect from the first language skills on to the acquisition or development of second and/or third language. There might also be other factors in play that should be regarded within different language learning contexts and other factors besides the role of a first language itself. Therefore, the linguistic interdependence hypothesis should be considered within a context of a language being acquired or learned. The following figure, which the research has constructed from the findings of this study, elucidates more clearly, the assumption of context-based linguistic interdependence hypothesis.

With regard to the impact of knowledge of more languages, some studies showed the positive impact of prior linguistic knowledge on additional language acquisition which is further demonstrated in research in other educational frameworks. For instance, Otwinowsky-Kastelanic (2011) compared awareness of cognate vocabulary among three groups of bilingual Polish learners of English with different levels of proficiency showed a positive relationship between level of English and awareness of cognates. Moreover, only multilingual students demonstrated awareness of cognates and consciously made use of them as a learning strategy.

Figure 15: The context dependent view of LIH



Chapter Six

6. Conclusions and Recommendations

6.1. Introduction

The previous chapter in this study has presented detailed discussions of what was collected and observed in relation to the objectives of this study and assisted in answering the specific research questions. Firstly, the findings that relate to the first research question of this study, which deals with the correlations between academic language and literacy skills across Borna, Amharic, and EFL were presented. Secondly, the developmental interdependence between academic language and literacy skills across Borna, Amharic, and EFL were presented and discussed. Along with this, the data related to the third research question of this study, which deals with whether Borna academic language and literacy skills demonstrate equal predictive power/value toward the corresponding skills of Amharic and EFL were presented and discussed. Finally, whether the effects of Borna literacy skills on Amharic and EFL literacy skills differ by or be contingent on gender, knowledge of more L_2s, and initial medium of instruction respectively was discussed.

6.2. Summary

Jim Cummins theory (1986 & 2000) about two distinctive and separate sets of language skills essential for academic success is a basic tenet for assessing the cross linguistic relationships of multilingual students' academic language skills in this study. In his often-cited studies, Cummins (1981) refers to the types of language use as 'Cognitive Academic Language Proficiency' (CALP), which he distinguishes from 'Basic Interpersonal Communication Skill' (BICS). Cummins argues that the academic language skills embody

specific literacy and grammatical knowledge that students acquire because of both formal practice and direct instruction. According to him, linguistic minority children have to learn not only language, but also academic content through their L_2 (L_3or FL).

In this case, thus, linguistic minority children must acquire conceptual knowledge and the language through which to express this conceptual knowledge. It must be then recognized that not only do they have to depend on their first/previous language, but they must also make use of the lately acquired language to influence the type of academic language necessary for successfully negotiating the education system. Accordingly, several studies stress the importance of a variety of opportunities to read and write in diverse languages to help children avail in the schools. This would ensure parallel growth for the languages and thereby increasing chances of cognitive/academic skills development at all levels.

With this in mind, the following conclusion was drawn from the findings of this study. The findings supported the initial assumptions that were reflected in the conceptual framework of this study and extended the existing literature to the next level- the cross-linguistic influence on the development of additional or foreign language academic literacy skills in bi/multilingual school contexts. First, the results of the Pearson product moment correlations indicated that there were statistically significantly positive associations between academic language skills across Borna, Amharic, and English as a foreign language in a school contact situation.

Second, there were statistically significant positive developmental influences between academic language skills across Borna, Amharic, and EFL. These developmental influences were bidirectional and mutually interdependent when it comes to learning academic

language skills across different languages. However, the facilitation effects of Borna academic language skills on Amharic academic language skills were different from its effects on EFL academic languages skills. Besides, being lately learned academic language skills could also influence the development of mother tongue academic language skills as well. As such, the assumption of well-developed first language literacy skills influence, and particularly facilitate the acquisition of second or additional language skills could also apply to the facilitation effects of second and/or additional language skills on the development of first language skills in academic contexts.

Third, predictive interdependence of native language skills with second and third/foreign language skills was dependent on other factors such as gender, more linguistic resource, and early grades medium of instructions. In other words, the developmental influences of native language skills on the developments of second and third/foreign language skills were different for the different groups or levels of gender, knowledge of more second languages, and initial medium of instructions.

6.3. Conclusions

In summary, the findings are (I) the overall results revealed that there were positive developmental influences (both correlational and predictive interdependence) between ALP across the three languages; (II) besides, the influence and facilitation effect of L1 (Borna) on L2 (Amharic) and L3 (EFL) were significantly different, and (III) the influence and facilitation effect of L1 (Borna) on L2 (Amharic) and L3 (EFL) were contingent on the conditions of gender, linguistic repertoire, and initial language of instructions, which give us a room for revisiting the LIH.

Hence, the linguistic interdependence hypothesis should not be viewed from a unidirectional facilitation effect of first language skills on second and/or third language learning or development, but it should also be regarded within different language learning contexts and other factors besides a first language per se. As a result, context independent view of the linguistic interdependence hypothesis should be revisited in multiple language learning contexts and with other contributing factors; hence, it would become context-based linguistic-interdependence hypothesis.

6.4. Recommendations

Linguistic minority children are becoming a greater component of our urban and semi-urban classrooms. Consequently, the education of linguistic minority students is an important issue for our educational system. In examining recent literature in combination with analysis of data gathered in this study, the following recommendations are forwarded.

6.4.1. Suggestions for Pedagogical Practice

Empirical evidence supported that transfer is facilitated when a child has received some instruction in L1 and has transitioned to L2 [or L3] instruction (August et al., 2001). Based on the findings from this study, it's possible to suggest that pedagogical decisions for linguistic minority children should not only consider effective instructional literacy strategies but also acknowledge the language of initial instruction, gender differences, and varying knowledge of more second languages. As such, these are the moderating variables in the effects of L1 literacy skills in the development of literacy skills in second and foreign or additional languages. This is because different groups of Borna-speaking children with different language of initial instruction, gender, and knowledge of more second languages

exhibited varying results in the development of second and foreign language literacy skills. Furthermore, it is plausible that there may be some other moderating effects on the relationship between initial L1 literacy skills and the development of literacy skills in second and foreign languages.

Because minority-language-speaking children are required to learn to read and write in English on grade levels, there is evidence that providing explicit instruction in foundational skills in L1 may assist these children in transitioning to reading and writing in unfamiliar language. Ultimately, literacy skills development for minority-language speaking students should emphasize strategic scaffolding in which teachers are knowledgeable of orthographic, phonemic, semantic, and alphabetic similarities and differences between L1, L2, and L3 and are able to mediate instruction by making instructional decisions that facilitate the development and transfer of skills across languages.

6.4.2. Future Research Directions

While some proposed research directions may be general enough to transfer to a variety of environments, it is intended that these suggestions mainly be considered for schools and systems comparable to those included in this study.

This study may serve as the springboard for further research, and the following recommendations are forwarded:

- As there is a considerable variation in the rate of L2 and L3 acquisition owing to individual differences and external influences, research-based information on the influences of external factors on the acquisition of L3 academic language proficiency

is needed. Problems and issues facing some L3 learners, such as amount of input, socioeconomic status, and linguistic status and typology are certainly worthy of investigation.

- Results from this study indicated that it's not only first language that always influences the development of academic language and literacy skills in the acquisition of subsequent language(s), but the development of native language skills could also be influenced by being lately learned language(s), too. Future studies will be able to draw upon these findings to expand the current literature on the linguistic interdependence hypothesis in a dynamic multilingual settings and the achievement of linguistic minority students in EFL mainstream classrooms at different levels, such as high schools, preparatory colleges, and higher education institutions.
- Another important aspect that requires investigation is how and to what extent degree of bilingualism or multilingualism affects the cross-linguistic transfer of academic language and literacy skills between two or more languages.
- Finally, further study on the pattern of cross-linguistic transfer of literacy skills for different age, language (including sign language), and proficiency groups is needed.

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