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**Corpus-Based Evaluation of Syntactic Complexity across  
Writing Proficiency Levels**

**The Case of EFL Students at Larbi Ben M'hidi University**

**A Dissertation Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Arts in Didactics of English as a Foreign  
Language**

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## DEDICATION

I would like to dedicate this thesis:

To **my beloved mom** who prepared me to face the challenges with faith and humility. She was a constant source of inspiration to my life. Although she is not here to give me strength and support, i always feel her presence that used to urge me to strive to achieve my goals in life.

To **my wonderful dad** who always had confidence in me and offered me encouragement and support in all my endeavours; I am truly blessed for having a father like you.

To **my cherished step-mom** whose endless support was beyond price. You have been there when no one else has; you have been a constant friend and a shoulder to lean on. Thank you for being a parental figure and treating me like your daughter.

To my **grandfather** and **grandmother who** constantly prayed for me.

To my dearest sister **Rayen** who stands by my side when things look bleak. You have been my best friend throughout our lifetime, the one person i can always count on to be there for me whenever i need her.

To my dear brothers **Badro Isslam** and **Bilal**, thank you for all the love you have showered me with.

To my cousins **Rania** and **Khedidja**, you are more of sisters to me.

To my aunt **Nadia** and uncle **Hakim**, you are family to me.

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## **Abstract**

A growing body of evidence suggests that English Foreign Language Learners' syntactic complexity is largely determined by their writing proficiency level. With respect to English Foreign Language learners at Larbi Ben M'hidi university, no attempts have been made to evaluate their writings syntactically or to establish possible associations between their writing proficiency level and the complexity of the structures they employ as they write in English. Given this gap, this study set out to determine if learners' syntactic complexity varies across different writing proficiency levels. A corpus-based method and a robust computational tool, L2 Syntactic Complexity Analyzer, were used to compute seven syntactic complexity measures for 52 essays. Results showed that syntactic complexity varied significantly between master, third year and second year students; learners at higher grades exhibited more complex syntax than their counterparts at lower grades. The findings also indicated that there was a positive correlation between learners' syntactic complexity and their writing proficiency level. On account of these findings, a number of pedagogical implications were conferred, limitations were discussed and suggestions for future research were identified.

**Key Terms:** Syntax, Writing Proficiency, Syntactic Complexity, Syntactic Complexity Measures.

## **List of Abbreviations**

C/S: Clause per Sentence

C/T: Clause per T-unit.

CAF: Complexity, Accuracy, Fluency

CN/C : Complex nominals per clause

CN/T : Complex nominals per T-unit

CP/C : Coordinate phrases per clause

CP/T : Coordinate phrases per T-unit

CT/T: Complex T-unit per T-unit

DC/C : Dependent Clause per Clause

DC/T : Dependent Clause per T-unit

EFL : English as a Foreign Language

EFLs: English Foreign Language Learners

ESL: English As a Second language

MLC: Mean Length of Clause

MLS: Mean length of Sentence

MLT: Mean Length of T-unit

NNS : Non Native Speakers

NS : Native Speakers

SC : Syntactic Complexity

SCMs : Syntactic Complexity Measures

SLA: Second Language Acquisition

T/S: T-unit per Sentence

VP/T: Verb Phrase per T-unit

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## **General Introduction**

Learning a foreign language entails, among other skills, the development of good writing ability. This latter is prerequisite if learners are to communicate effectively using the target language. Though as important as speaking, writing is far needed, for students will ultimately be writing not just simple academic papers such as essays but highly professional papers including dissertation and scientific articles. Weigle (2002, p. 4) stated that “The ultimate goal of learning is, for most students, to participate fully in many aspects of society beyond school, and for some, to pursue careers that involve extensive writing”. Writing, different from speaking, is perceived as a highly complex and relatively difficult to learn as a skill, for it is tightly interwoven with the cognitive processes. Seemingly, the development of writing skills is a hard task for first and second language learners alike, yet it is even harder for L2 learners because they are not only supposed to learn how academic writing is structured but also to possess a good command over the grammar and vocabulary of the second language. This suggests that writing skill is multi-componential in nature, it involves the attainment of both higher-order skills like planning and editing and lower-level skills which mainly incorporate the different parts that constitute the language as a linguistic system i.e. morphology and syntax. Arguably, coherence of the ideas learners generate depends largely upon their linguistic competence; expressing complex and interrelated ideas implies that students should have a good mastery over syntax. Put it differently, skilful sentence construction and the ability to construct complex sentences are necessary for translating and communicating ideas exhibiting intricate relations. Syntactic incompetence, therefore, does not only hinder successful writing but worst than that it deteriorates communication, the very first objective of any piece of writing. Aside from the transmission of complex thoughts, learners who have control over increasingly complex grammar stylistically impress

readers; writings of a high quality are unquestionably those with well crafted and significantly elaborate syntactic structures where readers, despite of the complex combination, still can feel a smooth and reasonable flow of ideas.

### **Statement of the Problem**

It is generally taken for granted that advanced English Second Language Learners (ESL) or English Foreign Language Learners (EFL) possess stronger writing skills than their counterparts at intermediate or low levels of proficiency. Establishing differences between mature and immature writing seems straightforward since raters typically rely on a number of criteria such as accuracy of the language, richness of vocabulary, suitability of the jargon, logical combining of ideas and relevance and sophistication of the content. Although these aforementioned standards might well prove to be of considerable effectiveness in evaluating essay quality, they seem to offer nothing about learners' actual level of writing development. It is true that ESL or EFL learners writing quality might be determined by their overall proficiency in the target language, but it might also be associated with mere stylistic choices which are quite subjective in nature. Writing development, if it is to be appropriately captured, it should not be reflected through criteria that can largely be affected by raters subjective judgement. In fact, quizzical speculations had been made so as to establish objective anchors by means of which learners 'linguistic maturity' can be gauged properly. Measures tapping the complexity of structures learners construct as they write were perhaps the most satisfactory in tracing changes that constantly occur in the interlanguage system as the acquisition process advances. In the present investigation, attempts are to be made in order to pinpoint differences in syntactic complexity among EFL learners with varying writing proficiency levels.



## Research Purposes

The present study is exploratory in nature aiming primarily at providing a comprehensive account of English Foreign Language Learners writing complexity. A further purpose that this research sets about to fulfil is assessing the validity of syntactic complexity measures in differentiating between groups of learners with varying writing proficiency levels, and hence shedding more empirical light on the relationship of syntactic complexity to foreign language writing proficiency.

Given these objectives, the study attempts to answer the following questions:

## Research Questions

- Is there a significant difference in the level of syntactic complexity among learners from different writing proficiency levels?
- Which measures best discriminate between writing proficiency levels?
- Is there a relationship between learners' syntactic complexity and their writing proficiency level as conceptualized by school level?

## Research Hypotheses

The study is grounded on the following four hypotheses:

### Alternative Hypotheses

***H<sub>1</sub>*** There would be one or two mean differences in syntactic complexity between students from varying writing proficiency levels.

***H<sub>1</sub>*** There is a relationship between syntactic complexity and writing proficiency level as conceptualized by school level.

### Null Hypotheses

$H_0$  Syntactic complexity means are equal between students from varying writing proficiency levels.

$H_0$  There is no relationship between syntactic complexity and writing proficiency as conceptualized by school level.

## **Research Design**

### **The Sample**

Since the main aim of the present investigation is the evaluation of syntactic complexity across writing proficiency levels, multiple populations are targeted: Second, third, master one and master two students at Larbi Ben M'hidi University constitute the accessible populations for the present study. As far as sampling is concerned, it targeted essays rather than participants. That is to say, all students are asked to accomplish a writing task then a representative sample is drawn from the whole set of the received essays.

### **The Method**

The study in the course of fulfilling the above stated aims primarily relies on a corpus-analysis method 'parsing' whereby college level students' writings are analyzed syntactically. In order to get valid results about learners' level of syntactic complexity in a relatively short period of time, an automatic analysis of their writing is carried out. The tool that can help in achieving such purpose is a web-based free software referred to as L2 Syntactic Complexity Analyzer (**L2SCA**) developed by Lu in 2010. The corpus analysis is further accompanied with a set of statistical analyses which are operationalized using SPSS, version 20.

## **Significance of the Study**

The present study is significant in that it replicates and extends previous research; in the course of assessing how syntactic complexity relates writing proficiency, the study takes control over some task-related variables namely time, topic and genre. Therefore, it is hopefully expected that on the basis of the findings of this investigation, new insights are to be provided as to to which extent college level students' language syntactically differ and to which extent syntactic complexity measures are reliable in assigning learners belonging to different writing proficiency levels, and hence offering significant implication to foreign language (FL) writing assessment and (FL) pedagogy in general.

## **Overview of the Thesis**

The present dissertation is comprised of two main chapters, a theoretical and a practical one. The first chapter consists of two sections, the first section reviews related literature on writing proficiency; it first discusses some issues related to writing in general and then spots light on the notion of proficiency. The second section provides a detailed account of the construct of syntactic complexity, its operational definition, the variables that were found to influence it in L2 production and the particular purposes for which syntactic complexity measures were employed in L2 writing research. The second chapter deals with the method that is used in the present study for the collection and analysis of data, results, discussion, implications, limitation of the study and suggestions for further research.

## CHAPTER ONE: THEORITICAL PART

### Section One: Writing Proficiency

#### Introduction

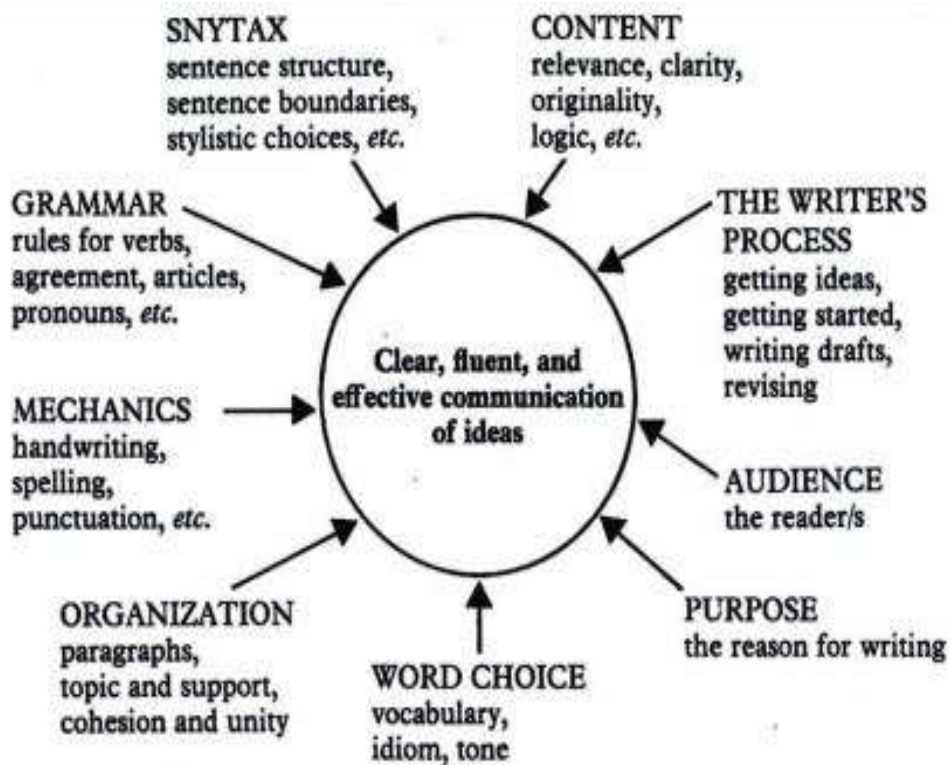
A proficient second or foreign language learner is undoubtedly the one who possesses the ability to communicate successfully in the target language using both modes. Though both speaking and writing were targeted in a remarkably large number of studies, composing effectively in the target language has received greater interest in Second and Foreign language pedagogy and the articles on this issue bear witness to this. Presumably, learning how to write in a second or a foreign language is one of the most difficult tasks, for writing is cognitively costly and it is more than just ink on paper. Writing ability is multifaceted and involves the orchestration of several minor abilities, it requires mastery over grammar, vocabulary and more importantly over syntax and discourse. A skilful or proficient writer is not the one who is merely able to combine letters into words and words into sentences but the one who also manages to construct a coherent whole where meaning is made clear through the logical combining of ideas as well as the adequate structuring of sentences. Taken to gather, the development of writing proficiency is a relatively lengthy process that necessitates intensive exposure to the target language accompanied with deliberate practice. This section spots light on the writing skill and briefly discusses some issues related to writing proficiency.

### **1.1.1. The Nature of Writing**

Broadly speaking, writing is the process by which abstract ideas are put into concrete or visual forms. Writers in so doing rely on the set of symbols that a particular speech community makes use of to signify speech. According to Byrne (1988, p. 1), it is "a system of graphic symbols, i.e. letters or combinations of letters which relate to the sounds we produce when we speak". These graphic symbols, nonetheless, are not randomly combined but arranged following certain conventions (Byrne, 1988). Learners, then, should have a profound acquaintance with the rules governing the particular language they are learning if they are to be able to construct meaningful and correct sentences which are in turn combined to structure a syntactically cohesive and semantically coherent text. Apparently, writing differs from speaking in that it is planned, more organized and the conventions that it follows are less flexible compared with those adopted in speaking. Learning to write is more difficult than learning to speak because writing is "less spontaneous and permanent" and this applies to both first and second language contexts (Broughton, Brumfit, Rlavell, Hill & Pincas, 1980).

### **1.1.2. Components of Writing**

As previously mentioned the graphic activity is relatively complex, demanding and it involves more than just getting words down onto the page. Raimes (1983) in conceptualizing the writing skill suggested the following eight-way model:



**Figure 1.** Producing a Piece of Writing Ramies (1983)

As demonstrated in Raimes' diagram, writers in order to be able to construct a piece of writing that communicates ideas clearly and fluently need to possess a number of micro skills. First, in addition to knowledge of correct verb forms, nouns adjectives, articles ...etc, knowledge of spelling and punctuation, a mastery of higher level grammar is essential; this includes knowledge of skilful sentence construction .Skilful writers are able to combine bits of language to form longer units; they can produce varied sentence types (complex, compound and compound-complex sentences) using colourful sentence components shapes. The ability to embed clauses also entails that the writer is able to express complex thoughts in a graceful way allowing the reader to sense fluidity in the discourse. Knowledge of lexis is also important, skilful writers do not only exhibit varied and sophisticated range of vocabulary items but also appropriate word choice; selection of words depends on many factors among which theme and audience. The composing

process is not just about form and the linguistic resources used, but also about content selection and text organization. Skilful writers first brainstorm in order to generate as many ideas as possible then they carefully choose the ones that better relate to the topic they are writing about and to the particular purpose they are writing for. After organizing these selected ideas, writers try to combine them in order to develop a unified and coherent text. At first glance, one might conceive these components as representing separate sets, yet they are interdependent and equally important in writing. Markedly, writing is a dynamic process where writers' final product hinges upon a constant interaction between a number of sub competencies.

### **1.1.3. Importance of Writing**

Writing, no matter if it is in first or additional languages, plays an incredibly important role in today's fast developing world; it is a mean through which meaning can be maintained across space and time. Writing lies at the heart of any academic life and its attainment is unquestionably prerequisite for academic success (Hosseini, Taghizadeh, Abedlin and Naseri, 2013). Being able to write in English as second or a foreign language, however, turned out to be, in the light of the significant status that the English language assumes nowadays, an unavoidable goal that learners endeavour to achieve. For some second language practitioners, proponent of writing to learn approach, writing is not just a skill that learners develop as an extension of other language skills, listening, speaking or reading but a skill that greatly contributes to the development of language proficiency in general. In this respect, Raimes (1985, p. 230) posited that "writing is a *tool for learning* [emphasis added] and not just a means to demonstrate learning". That is, it can be a goal in its own right and a means through which other goals can be achieved. Much of the grammar and vocabulary that learners' develop while learning the

language, for example, are reinforced through writing practices. That is, if learners enlarge their grammatical and lexical knowledge through extensive reading or school instruction, the appropriate use of this linguistic knowledge is attained only through regular writing. Writing plays a facilitative role in language development, it is a vehicle for learning and not just a skill that learners develop last as advocates of the learning to write approach claimed.

#### **1.1.4. What is Writing Proficiency?**

According to Morrow (1979) proficiency is perceived as "how successful the candidate is likely to be as a user of the language in some general sense" ( as cited in North, 2000, p.41). Proficiency then can be defined as a person's overall ability in the second language or simply what the learner can do with that language. Considering this definition one might wonder how a term like proficiency can be complex in its nature, however, the term is more complicated than it appears to be and many of its intricate details can't be captured by means of a general definition such as the aforementioned one. This complexity stems from the fact that, proficiency refers to both knowledge of language and the application of this knowledge in daily encountered situation, referring to competence and performance, respectively. A better conceptualization of proficiency can be sensed in Hymes communicative competence 1972 where proficiency is no longer associated with mere linguistic knowledge but with a multitude of competences including grammatical competence, sociolinguistic competence, strategic competence and discourse competence (Bargaric, Djigunovic & Mihaljevic, 2007). Having provided a comprehensive definition of proficiency, defining writing proficiency is straightforward now. Writing proficiency in simple terms pertains to the ability to communicate effectively through the written word. Writers' proficiency, then, is the by-product of a constant interaction among



grammatical, sociolinguistic, discourse and strategic competence. Aside from grammatical knowledge, proficient writers are able to produce a variety of text types owing to sociolinguistic variation. That is, they are able to direct their writings whenever a change in stylistic features is called for by the topic, the genre or the audience. Proficient writers are also acquainted with discourse rules, the rules by which text cohesion and coherence are maintained. As for strategic competence, it mainly appertains to writers' awareness of the different writing strategies as well as the different writing stages where they are normally employed (Choubane, 2014)

### **1.1.5. Writing Proficiency and Instruction**

Writing proficiency could, by no means, develop without the provision of effective teaching instructions. The kinds of instructions learners receive, nonetheless, depend on the particular teaching approaches that teachers adhere to.

#### **1.1.5.1. Controlled -to- Free Approach**

Arguably, this approach has its origins in the audio-lingual method or what is sometimes called "Army method" that was originally developed by Charles Fries in the 1950s. As its name suggests, the control to free approach, includes both guided and unguided writing practices and it mainly revolves around mastery of grammar and vocabulary. In controlled exercises students generally practice their writing skill through the grammatical manipulation of sentences and paragraphs. They are usually asked to rewrite sentences by changing the mode from declarative to interrogative or by changing verb tenses from past to present or vice versa. It should be noted that students in this phase strictly adhere to their teachers instructions (Raimes, 1983). The main aim as it seems is to raise student's grammatical awareness and help them recognize the rules by which the written discourse is governed (Hayland,2003).It is believed that when students primarily

learn how to produce varied sentence-patterns, they will not face any difficulties in establishing links among single sentences to form coherent paragraphs. Following the controlled-to-free approach, it might be said that composition writing may proceed only if a considerable amount of time was first devoted to sentence-combining practices whereby students learn how to form accurate sentences. When teachers insure that their students have been acquainted with the necessary grammatical knowledge they allow them to pass on to the “the free writing phase”; writing practices in this phase are unrestricted i.e. students write freely without having to follow any prescriptions from the teacher (Raimes, 1993). The controlled-to-free approach, however, received severe criticism due to its strong concern with accuracy; being able to write is not only about constructing correct structures but also about how well the learner succeeds in transmitting his or her ideas with clarity.

#### **1.1.5.2. The Free-Writing Approach**

This approach emerged as a reaction to the limitations inherent to the controlled-to-free approach; by this time teachers realized the need to develop fluent writers, writers who would express their thoughts overtly without worrying about making grammar or spelling mistakes. The only way that would help fulfil such an ambitious endeavour was to shift the attention from quality and make students write as much as they can in the target language. (Raimes, 1983). The main principle underpinning the free-writing approach is that teachers’ constant correction would create a sort of fear inside students which may cause them to quit writing so as to avoid evaluation. If teachers, nonetheless, minimize the amount of feedback they give, they would encourage students to put across their ideas in whatever language they have. “In this way, students feel that they are actually writing; not only performing exercise of some kind; they write what they want to write and consequently writing is an enjoyable experience” (Byrne, 1988, p.22). This orientation greatly stresses the personal dimension and considers writing as a creative process through

which students share their personal experiences (Hayland, 2003). Though the main concern of teachers in this approach is meaning, form is not totally neglected but postponed to a later phase.

### **1.1.5.3. Product-Oriented Approach**

This approach is also referred to as a model-based approach in that most writing practices that take place in the classroom are based on sample texts which students thoroughly examine with aim of extracting the different rhetorical patterns by means of which texts are organized (Gabrielatos, 2002 as cited in Hasan & Akhand, 2010). In a typical product-oriented classroom four main stages are distinguished: In the first stage learners are encouraged to read the text paying close attention to genre features; if the supplied text is a formal letter, for instance, students at this initial stage would first pinpoint the kind of language employed and the organizational pattern followed. In the second stage a considerable time is devoted to a series of guided activities where students try to practice some of the structural patterns that they have extracted from the model text. The third of these stages, however, centres on ideas organization. That is to say, students try to establish logical links between the bits of language that they have practiced in the previous stage. In the final stage, students combine all the knowledge that they have gained from the first three stages in order to produce their own piece of writing (Steel, 2004, as cited in Hasan & Akhand, 2010). Proponents of this approach simply believe that persistent exposure to different text types satisfactorily familiarizes learners with the necessary writing conventions which are deeply reinforced when mimicking takes place. Seemingly, this approach adopts a behaviourist perspective and perceives writing development as a mere formation of habits. In the product-oriented approach “writing is seen as a product constructed from the writer’s command of grammatical and lexical knowledge, and writing development is considered to be the result of imitating and

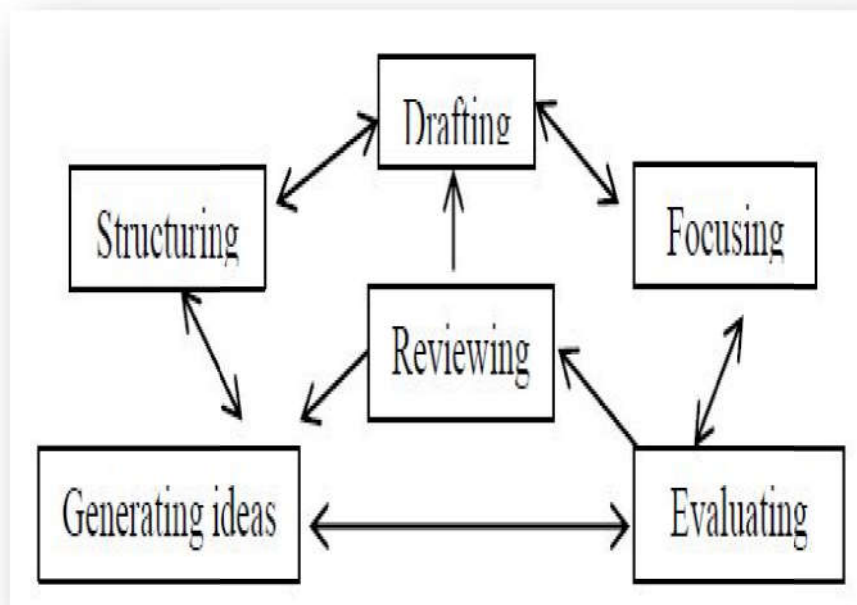
manipulating models provided by the teacher”( Hayland, 2003, p.3) This approach as it appears is very similar to the controlled-to free writing approach in that it emphasizes the mechanical aspects of writing at the expense of some important aspects such as content, purpose and audience.

#### **1.1.5.4. Process-Oriented Approach**

Like in the free- writing approach, writers in the process-oriented approach are considered as “independent producers of texts”, yet the teacher here assumes a number of roles (Hayland, 2003, p. 10). Process –based approach emerged as an alternative to the product approach emphasizing the non-linear nature of the writing process. Theorists in favour of the process-driven approach believe that teachers concern should not be students’ final draft but the different steps that student go through as they write (Widiati, 2004). According to Steel (2004) in the process- oriented approach students go through eight main stages before getting into a satisfactory product, this includes: generating, planning, mind mapping, peer feedback, editing, final draft and teacher evaluation (as cited in Hasan & Akhand, 2010).

The writing process begins by brainstorming in which students generate ideas on a given writing topic; brainstorming is sometimes initially realized through classroom discussions. Students then try to structure these ideas by critically judging their respective quality i.e. students as they rewrite their ideas in a new plan they eliminate the ones they think they have the least importance. In the next step students create a mind map by means of which ideas are arranged hierarchically. Before going about editing, students are given the opportunity to evaluate each other’s mind maps; this stage is useful as it does not only help students recognize blemishes in their mind maps but also direct their attention to the aspect of audience. In the editing stage students’ mind maps’ are transformed into complete texts, this should normally be an easy task since relationships among ideas are

already established. Prior to producing a final draft students proofread their worksheets several times. In the final stage, teachers provide students with valuable comments. Figure 2 represents one of the oft-cited writing models which clearly portrays the interaction that takes place between the different writing processes.



**Figure 2.** Writing Process Model (White and Arndts, 1991).

### 1.1.6. Writing Proficiency and Reading

Reading and writing are thought to be tightly interrelated and the association that exists between them is set to be a two-way in which not just reading feeds writing but it is also improved through writing. According to Stosky (1983, p.25) “...better writers tend to be better readers...and better readers tend to produce more systematically mature writing than poorer readers”. The two-way association that exists between reading and writing stems from the fact that they both revolve around meaning creation and retrieval. In writing people use different graphic symbols to construct meaning, and in reading they go about decoding these combined graphic symbols to interpret meaning (Reynolds & Janzen, 2007 as cited in

Boudersa, 2014). This close link between reading and writing is also due to shared cognitive complexity, both of them require surface and deep level knowledge i.e. processing of syntax, orthography, phonology and semantics. Besides people while performing them make use of the same cognitive skills, they memorize, analyze, synthesize, evaluate and criticize (Stosky, 1983).

Research into the reading/writing connection is not new, it has begun as early as the 1980s with researchers working in first language acquisition whose main interest was discovering how either skill can contribute to the development of the other. Building on the findings from first language (L1) research, second language acquisition (SLA) scholars have constantly investigated the effect of reading on second language (L2) writing development and on the development of L2 Proficiency in general. Krashen (1993), in his book *The Power of Reading* investigated the effect of reading by comparing the results reported in a number of L1 and L2 studies on free voluntary reading (FVR) with those reported in direct instruction research. His review revealed surprising findings, students enrolled in FVR programmes outperformed those subjected to direct instruction in all aspect of language performance: reading ability, lexical sophistication, grammatical complexity and writing ability. The worst result reported was no difference between reading groups and school instruction groups, and those results were mainly found in short term studies (one month long). This suggests that the least effect reading may have on writing proficiency is just as good as the effect of a year of instruction and persistent practice. He concluded that “reading is the only way, the only way we become good readers, develop a good writing style, an adequate vocabulary, advanced grammar, and the only way we become good spellers” (p.23). As far as writing proficiency is concerned, Krashen further claimed that reading is even more effective than writing practice.

People read with various purposes in mind, some read with appreciation because they were born with a firm passion to read and others with a more concentration because they just have to read. Regardless of the variety of objectives for which people generally read, always there is a learning process going on. If writing proficiency entails the ability to construct correct and meaningful sentences exhibiting varied and sophisticated vocabulary in addition to the ability to form well organized texts exhibiting high level of coherence and cohesion, and reading is found to promote the growth of lexical, grammatical, rhetorical and thematic knowledge, then the effect of reading on writing is not a puzzle to solve. Directly or indirectly, on the short or on the long term, in L1 or L2, reading enhances writing.

#### **1.1.7. Writing Proficiency Assessment**

Although writing instruction plays a vital role in rising learners 'proficiency in writing, it is effective only when accompanied with regular assessment. There are mainly two types of writing assessment: Competence assessment and performance assessment. The difference between the two lies in the standards according to which scores are granted. In more concrete terms, while competence assessment focuses on language that is largely decontextualized, performance assessment targets language ability in real world context i.e. the scores are always determined by how well the language user ( in this case the writer) performs in tasks that are based on simulations of real situations. Performance assessment in turn comprises two types: strong sense performance assessment and weak sense performance assessment. In the former, scorers' main concern is the successful completion of the task. If the task is writing a persuasive essay, for instance, the writer is not given the score unless he or she succeeds in convincing the target audience. In the latter, however, all what matters is the language used by the writer i.e. linguistic aspects

take precedence over task accomplishment (Weigle, 2002). Considering either side during assessment seems possible, yet insufficient; a holistic view of the writer's proficiency unquestionably hinges upon a consideration of both levels of attainment.

## **Conclusion**

Writing is a herculean task for teachers and learners alike. On the part of students, it is hard because they often feel overwhelmed with the rigid grammatical patterns and the dense lexical items that characterise the target language. As for teachers, it is challenging because it requires appropriate teaching materials, a considerable amount of practice and most importantly valid assessment criteria. Meeting higher standards of writing proficiency, nevertheless, is quite possible provided that learners charge their internalized knowledge through extensive reading and intensive practice.



## **Section Two: Syntactic Complexity**

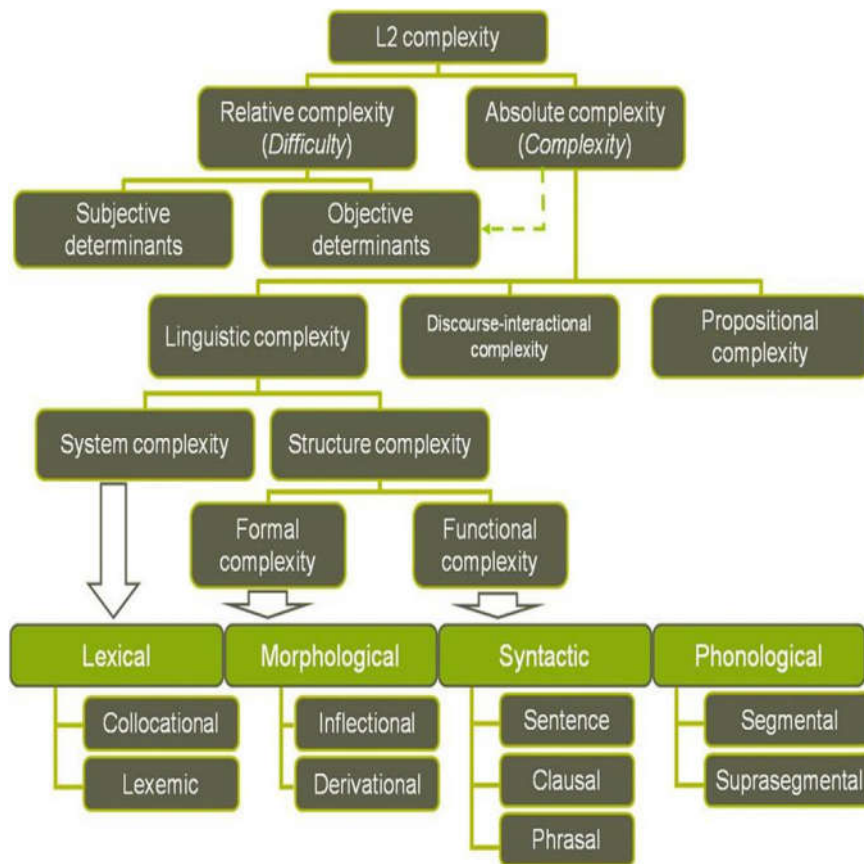
### **Introduction**

The notion of complexity along with accuracy and fluency, typically referred to as CAF, has long established itself as objective, valid, and reliable descriptor of second language proficiency or global development in the target language. Unlike accuracy and fluency, the construct of complexity has been especially employed in L2 writing research. Although complexity of learner's writing can be determined by examining both the lexical and the syntactic features of his or her language, syntactic or grammatical complexity is recognized by second language researchers as the most important construct simply because the growth of learners' syntactic repertoire is indispensable part of his or her overall L2 progress (Ortega, 2003). Given the importance of such construct, syntactic complexity was targeted by a notably large number of researchers not only in the field of second language acquisition but in a variety of language -related research areas. With regard to L2 writing research, though the particular purposes for which the construct of syntactic complexity was investigated are considerably numerous, it is typically used to index L2 development and or to evaluate L2 proficiency. This section addresses the notion of syntactic complexity in greater depth: How it was operationalized, for which purposes it was employed in writing research and most importantly what variables are found to highly influence it in written production.

#### **1.2.1. What is Complexity?**

Pallotti (2009), amongst others, suggested that the definition of complexity is unquestionably the most open to doubt, perhaps because the construct itself pertains different meanings. Ortega and Norris (2009) posited that different levels constitute the

construct of complexity. The multidimensionality of the complexity construct is nicely captured in the following taxonomic model developed by Bulté and Housen (2012).

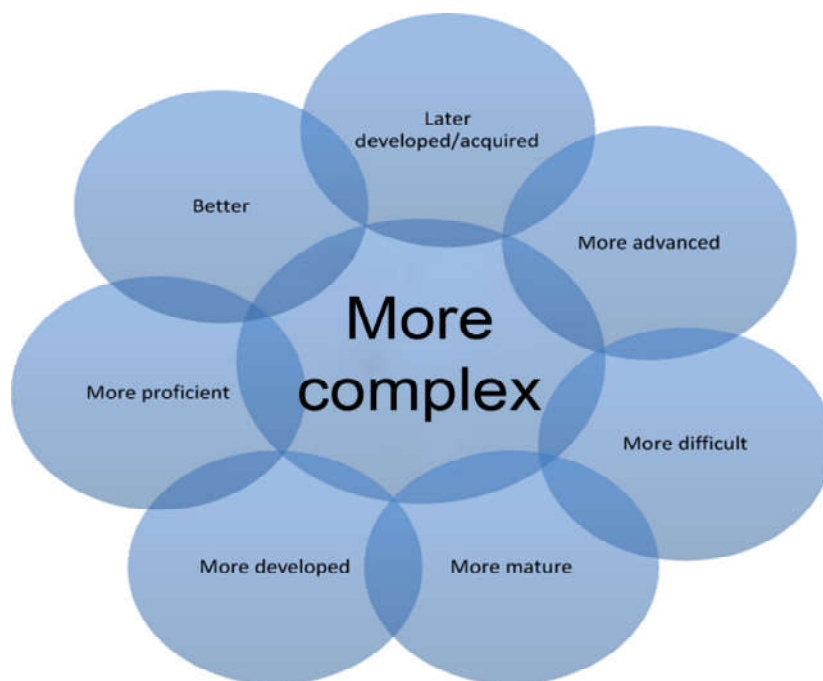


**Figure 3 .** Taxonomic Model of L2 Complexity ( Bulté & Housen, 2012)

As clearly shown in the above paradigm, the first distinction is made between absolute and relative complexity. Skehan (2007) referred to the former as ‘objective difficulty’ that is characteristic of the task and to the latter as ‘subjective difficulty’ that is the result of learner’s inabilities to accomplish a given task. (as cited in Pallotti, 2009). This entails that the construct of complexity can refer to task characteristics as well as characteristics of language performance. Moreover, under absolute complexity there stem three other types of complexity: propositional complexity, discourse-interactional complexity, and linguistic complexity. In the present study, however, the term complexity will only be used to refer to complexity inherent to linguistic units i.e. linguistic

complexity. Merriam Webster dictionary assigned a purely structural meaning to linguistic complexity ” composed of two or more parts” (as cited in Pallotti, 2009, p. 593) . This meaning simply accounts for the number of transformational rules whereby different structural surfaces are produced (e.g. complex, simple sentences, compound ...etc). Said differently, as the number of nodes increases, obviously the language gets more complex and hence it becomes cognitively more demanding or challenging. In this regard Crystal (1997) stated ” [i] n linguistics, complexity refers to both the [ . . . ] internal structuring of linguistic units and to the psychological difficulty in using or learning them” (as cited in Bult & Housen, 2014, p.43). Variety, more particularly, variety of the lexicon is another meaning with which linguistic complexity is often associated. Linguistic complexity, then, can be evaluated not only in terms of syntax and the way linguistic units are structured but also in terms of lexis and the range of vocabulary employed, referring to syntactic (grammatical) complexity and lexical complexity, respectively. The former of which is the focus of the present study.

The construct of complexity as related to linguistic units has been characterized differently across studies also due to its interrelations with other highly complex constructs. The following figure shows a number of constructs with which complexity has been confounded.



**Figure 4.** L2 Complexity and Related Constructs (Bulté and Housen, 2014)

L2 studies tend to interpret complexity in terms of at least one of the above listed constructs: ‘acquired late’, ‘mature’, ‘advanced’, ‘proficient’ and ‘better’. According to Bulté and Housen (2014), more complex structures are considered to be inherently difficult to process and their production requires special cognitive efforts, hence, they are generally acquired late. Late developed structures are in turn taken to be more advanced, more proficient, thus, better. Palotti (2009), on the other hand, refuted this presupposition claiming that some structures are acquired late not because they are cognitively more complex but simply because they are less encountered or communicatively irrelevant. Palotti firmly asserted that complexity and progress are two different notions and should not be confused, certain forms are acquired late and this is irrespective of their complexity. Bulté and Housen further argued that this circular reasoning adapted by most studies is misleading, and they recommended a conceptual separation between these constructs, claiming that many of them (Proficiency and development) are themselves multicomponential.

### **1.2.2. What is Syntactic Complexity?**

Syntactic complexity (also known as syntactic maturity) is defined as the extent to which the grammatical structures exhibited in the language production are varied and sophisticated (Ortega, 2003). According to Lu (2011), variety refers to the range of syntactic resources deployed and sophistication refers to the extent to which these grammatical features are elaborate. To put it in a different way, a one's writing is set to be syntactically complex, if he or she uses diverse and well-crafted production units; this includes a wide range of phrases (e.g. nominal, verbal and prepositional), a wide range of sentences (e.g. complex, compound and compound complex sentences) in addition to varied clause types (e.g. relative, adverbial, complement).

#### **1.2.2.2. Operationalizing Syntactic Complexity in L2 Writing**

Though the concept of syntactic complexity has long gained a wide interest in L2 writing research, it was only recently that the concept has been accurately operationalized. This is simply due to, as Szmrecsanyi (2004) contended, the scarceness of proper definition of the concept and more importantly the lack of satisfactory approaches by which the concept can be correctly operationalized. Furthermore, among the large number of L2 (writing) studies that investigated complexity, fairly few of them have looked at operational matters of the construct (Bulté & Housen, 2014).

In addition to measures of accuracy and fluency a wide range of complexity measures 'syntactic complexity' have been explored in a number of L2 writing developmental studies with the stated aim to determine which measures best index L2 development and, hence, constructing a valid and reliable developmental indices that would certainly help not only L2 researchers but also L2 teachers to decide on L2 learners' overall proficiency or progress in the target language. SCMs were first explored in cross-

sectional studies which primarily aimed at finding the measures that best differentiate between proficiency levels (e.g. Larsen Freeman, 1978), then in a number of longitudinal studies (e.g. Casanave, 1994) which were motivated by the same research goal, but further interested in the way these metrics develop over time. Before dealing with the range of these metrics, a review of the set of production units that were subject to quantification by most of these measures is needed.

#### **1.2.2.2.1. Definition of Relevant Production Units**

Precising how each of these units of analyses is defined is essential to the understanding of the number of measures that quantify them, Lu (2011) asserted. Furthermore, results obtained from different studies examining these measures varied significantly as a result to differences among the definitions they adopted.

##### **1.2.2.2.1.1. Sentence**

Lu defined sentence as “ a group of words punctuated with a sentence-final punctuation mark, usually a period, exclamation mark or question mark, and in some cases elliptical marks or closing quotation marks” (2011, p.4). In other words, the sentence can be loosely described as a string of words that together make sense or express a complete thought; it usually contains a subject and a predicate with a finite verb. A Sentence always contains a main clause and sometimes one or two subordinate clauses, it is complete in itself and it can be a statement as it can be a question.

##### **1.2.2.2.1.2. Clause**

Presumably, the definition of clause is the most problematic, for researchers disagreed on what they account for as a clause. While some researchers (e.g. Hunt, 1965; Lu, 2011; Lu & Ai 2013; Lu & Ai 2015) consider only finite elements, those with a ‘subject and a finite verb’ such as independent, nominal and adverbial clauses as clauses,

others (e.g. Bardovi-Harlig & Bofman, 1989) also count non-finite elements such as verb phrases.

#### **1.2.2.2.1.3. T-unit**

The first use of T-unit as an objective measure to index language development can be traced back to Hunt (1965) when he investigated the progress of syntactic complexity among English children, and he was the one who termed it T-unit meaning ‘ terminal unit’. T-unit was defined by Hunt as” one main clause plus any subordinate or non-clausal structure that it attached to or embedded in it” (1970, p.4). Accordingly, T-unit is a statement that always includes just one main clause and one or more dependent clauses. A T-unit with at least one subordinate clause, nonetheless, is considered as a complex T-unit (Lu, 2011).

#### **1.2.2.2.1.4. Dependent Clause**

Also known as a subordinate clause and it can be defined as a group of words with a subject and a finite verb. Unlike independent clause, a subordinate clause does not convey complete information, thus, it cannot stand on its own and it is always attached to the principal clause which it modifies. Dependent clauses in a sentence usually serve as a noun, as an adjective or as an adverb (Lu, 2011).

#### **1.2.2.2.1.5. Coordinate Phrases**

They are simply phrases that are either conjoint by a coordinating conjunction such as and, or and but or by a comma; these phrases can be adjectives, nouns, adverbs or verbs (Lu, 2011).

#### **1.2.2.2.1.6. Complex Nominals**

Cooper (1976) categorized nominal structures into two main types: headed nominals and they include nouns with adjectives, relative clauses, prepositional phrases,

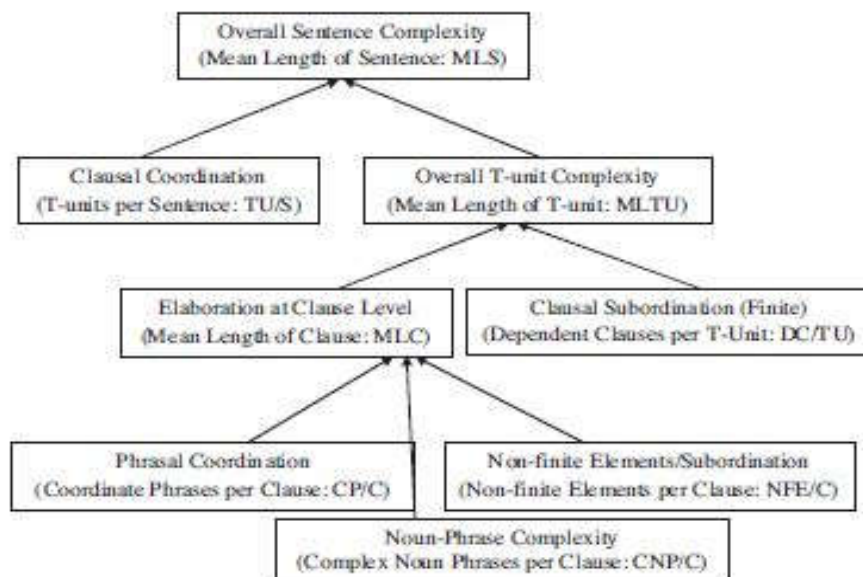
participles or appositives as post-modifiers. Non-headed nominals which incorporate different noun phrase substitutes such as nominal clauses, gerund phrases and infinitives functioning as subjects.

### 1.2.2.2.2. Syntactic Complexity Measures

Regardless of the number of measures examined in L2 writing research the majority of these metrics as noted by Lu:

... Consider clauses, sentences, or T-units as production units and analyse them in terms of length (e.g., mean length of T-unit) or in relation to either one another (e.g., clause per T-unit) or particular syntactic structures (e.g., complex nominals per T-unit) (2011, p. 39).

The following figure illustrates the point and clearly shows units of analysis and a set of measures that have been used to characterize each of them.



**Figure 5.** A multi-dimensional Representation of Syntactic Complexity  
(Yang, Lu, & Weigle, 2015)

Syntactic complexity as it appears is of a multidimensional nature and should be analyzed not only at the sentential or the clausal level but also at the phrasal level. With



respect to clause-level measures (subordination and coordination) they were traditionally considered as the most valid measures of syntactic complexity and were, thus, extensively used in L2 writing research (Yong, Lu & Weigle, 2015). Wolfe-Quintero, Inagaki and Kim (1998), for example, found that clausal subordination is the most satisfactory measure in predicting the level of proficiency in L2 especially at the intermediate and the upper-intermediate levels (as cited in Yoon, 2017). Clausal coordination, on the other hand, was only found to characterize early L2 progress (Bardovi-Harlig, 1992). Although phrasal complexity has widely been tackled in a number of L1 studies, it was only recently that this measure was recognised by L2 researchers as an indispensable part of syntactic complexity (Yong et.al. 2015). According to Norris and Ortega (2009), phrasal complexity increases as learners' writing reaches higher developmental stages. That is to say, learners tend to use less clauses and more phrases as they get more advanced.

#### **1.2.2.2.3. Syntactic Complexity Measures and L2 Writing Proficiency: Insights from Correlation Studies**

As severally mentioned, large set of measures have been examined in both systematic and synthetic L2 writing research with the aim of identifying the metrics that would provide a precise characterization of learners' writing proficiency. Wolfe-Quintero et al (1998), in their research synthesis, scrutinized measures that were implemented in 39 L2 writing developmental studies. The measures that were found satisfactory are the ones that showed predictive, concurrent and repeated sampling validity. While proposing new measures for further research, they recommended that these same measures that they found reliable be subjected to future replications, so that further evidence will be added to this aggregating state of knowledge (as cited in Lu, 2011). In another research synthesis, Ortega (2003) thoroughly investigated six measures of syntactic complexity that were examined by Wolfe-Quintero et al. (1998). The results obtained for each of these SCMs in

25 studies were compared in order to find out which measures significantly differentiate between writing proficiency levels. Lu (2011) in his seminal paper evaluated 14 measures using a large-scale corpus; this includes five measures studied in Wolfe Quintero et al. (1998), six reviewed in Ortega (2003) in addition to other three measures that Wolf Quintero et al. (1998) suggested for further investigation. According to him measures reported in these two research synthesis” represent a fairly complete picture of the range of measures adopted in L2 writing research” (2011, p. 42). The following table represents the set of measures adopted by Lu, it displays not only their respective correlation with proficiency but also the number of studies that reported these different amounts of associations.

**Table 1.** *Syntactic Complexity Measures Evaluated (Lu, 2011).*

Measure	Code	***	**	*	X
<b>Type 1: Length of production</b>					
Mean length of clause	MLC		5	1	3
Mean length of sentence	MLS		5		5
Mean length of T-unit	MLT	4	19	5	12
<b>Type 2: Sentence complexity</b>					
Clauses per sentence	C/S		1		1
<b>Type 3: Subordination</b>					
Clauses per T-unit	C/T	1	6	4	7
Complex T-units per T-unit	CT/T			1	
Dependent clauses per clause	DC/C	1		1	1
Dependent clauses per T-unit	DC/T		1		2
<b>Type 4: Coordination</b>					
Coordinate phrases per clause	CP/C				
Coordinate phrases per T-unit	CP/T			1	
T-units per sentence	T/S		1		4
<b>Type 5: Particular structures</b>					
Complex nominals per clause	CN/C				
Complex nominals per T-unit	CN/T		1		
Verb phrases per T-unit	VP/T				

*Note.* MLC = mean length of clause; MLS = mean length of sentence; MLT = mean length of T-unit; C = clause; S = sentence; T = T-unit; CT = complex T-unit; DC = dependent clause; CP = coordinate phrase; CN = complex nominals; VP = verb phrases; X = Measures that show no correlation with or effect for proficiency.

\*\*\* Measures that highly correlate with proficiency ( $r \geq 0.65$ ) or show an overall effect for proficiency with a significant difference between three or more adjacent proficiency levels ( $p < 0.05$ ).

\*\* Measures that moderately correlate with proficiency ( $0.45 \leq r < 0.65$ ), or show an overall effect for proficiency for two or more proficiency levels ( $p < 0.005$ ).

\* Measures that weakly correlate with proficiency ( $0.25 \leq r < 0.45$ ) or show a trend toward an effect for proficiency ( $p < 0.10$ ).

The set of measures listed in the above table can be categorised into two main types: The first type considers length of production units and measures it by counting the number of words and dividing it by the number of a chosen production unit (sentence, clause or T-unit). The second type, however, is mainly based on frequency count or ratios; it examines those units of analysis in terms of their relationship to one another. For example the complexity of the sentence can be determined by dividing the number of clauses by the number of sentences (C/S), this tends to apply for the rest of these measures i.e. those characterizing subordination, coordination and particular structures. Furthermore, in this table there stand out varying degrees of correlations between these syntactic complexity measures and (writing) proficiency. Among the three length measures, MLT has the strongest correlation with proficiency; this result was reported in four studies. A

high correlation with proficiency was also spotted in one study for two subordination measures namely C/T and DC/C. With respect to the other two length measures (MLS and MLC) they were only found to moderately correlate with proficiency in five studies. Only two subordination measures have a moderate correlation with proficiency, C/T was found to moderately correlate in six studies while DC/T was found to moderately correlate in only one study. As long as coordination measures and particular structures measures are concerned, a moderate correlation was reported in one study for T/S and CN/T, respectively. Except for CN/C, CN/T and VP/ T( particular structures measures), most of these measures showed weak to no correlation in a number of studies with one length measure (MLT) reported in more than ten studies.

#### **1.2.2.2.4. Distinct vs. Redundant Measures**

Ortega and Norris (2009) avouched that L2 researchers should be cautious when choosing SCMs, if their investigations are to yield reliable results. L2 researchers very often employ measures that are believed to tap the same quality of language production and this, in Ortega and Norris' view, unequivocally leads to redundancy in measurement. They further explained that if one intends to gauge the amount of subordination, it is quite sufficient to choose only one measure say C/T, CT/T, DC/T or DC/C. Despite the fact that these aforementioned measures exhibit different denominators, they belong to the same family as they all reflect subordinate or dependent clauses in the numerator. Including all these measures in a one study is not just meaningless but also troublesome; collinearity among the measures violates one of the important assumptions of multivariate methods. Since L2 researchers using SCMs generally depend on comparisons of variance, they should avoid measures that highly overlap. Some measures, nonetheless, cannot depict complexity of the syntax when used alone and should therefore be followed by other measures. Norris and Ortega afford a good exemplar: generic measures like (MLS, MLT

and MLC) thought they can determine the length of sentences, clauses and T-units, they do not actually specify what type of constructions might have lead a given production unit to be fairly long or short, hence, it would more convenient to accompany length measures with more specific measures such as those characterizing coordination or subordination.

### **1.2.2.3. Uses of Syntactic Complexity Measures in L2 Writing Research**

Complexity measures, particularly syntactic complexity ones, have been used for a variety of purposes among which the assessments of L2 writing proficiency. Bulté and Housen argued “Complexity measures in L2 writing research mainly serve as indicators, diagnostics, or proxies for other, more general or higher-order constructs such as L2 (writing) proficiency, L2 (writing) development and L2 (writing) quality, or maturity” (2014, p. 45).

#### **1.2.2.3.1. Gauging Writing Proficiency**

SCMs have been especially used as objective measures to gauge L2 writing proficiency. Developmental index studies originally started in the 1960s with first language researchers (e.g. Hunt 1965) who were driven by an immense urge to establish anchors for tracking child’s language development. Since then a number of L2 researchers ( e.g. Larsen Freeman, 1978; Homburg, 1984; Bardovi-Harlig & Bofman, 1989), inspired by the same research purpose, have constantly experimented with SCMs measures in the course of assessing their reliability in characterizing global proficiency in the target language. The majority of these earlier investigations, however, either used small sample sizes or focused the analysis on some metrics. Larsen Freeman (1978), for example, analyzed 212 compositions written by ESL college level students using only one length measure (MLT), her study showed significant differences among nonadjacent levels of proficiency. Homburg (1984), on the other hand, examined two length measures (MLS and MLT), one subordination measure (C/T) and one coordination measure (T/S) using only 30

compositions produced by EFL learners at advanced levels of proficiency. He found tangible increase in the subordination ratio across the three composition strata. Recent investigations, nonetheless, in their attempt to remedy limitations inherent to previous studies, took advantage of recently designed computational tools which undeniably allowed for the examination of a wide range of measures using large sample sizes. Lu (2011) evaluated 14 SCMs using large-scale dataset from the Written English Corpus of Chinese Learners. The means obtained for each of these measures were compared across four college levels to identify the measures that best discriminate between learners from varying developmental levels and the measures that develop linearly across these levels. Significant between proficiency differences were especially found for length measures.

#### **1.2.2.3.2. Benchmarking Language Development**

SCMs have also been employed to index second language development over time. Using T-unit measures as an objective index, Casanave (1994) traced the development of journal writing of 16 intermediate EFL students over three semesters; his findings yielded varied patterns of development (only half of students showed a linear pattern of progress). In a four-week long intensive English for academic purposes (EAP) programme, Mazgutova and Kormos (2015) traced the progress of lexical and syntactic features in the written production of students at three proficiency levels (Low, intermediate and upper intermediate), a considerable increase in phrasal complexity was observed for students at lower levels of proficiency. Arguably, although syntactic complexity is subject to influence from a considerably large number of variables (e.g. genre, topic... etc), linguistic progress as Ortega (2015) claimed is the variable of most central interest, she stated:

It is posited that syntactic complexity indexes the expansion of the capacity to use the additional language in ever more mature and skilful ways, tapping the full range of linguistic resources offered by the given grammar in order to fulfil various communicative goals successfully (p. 1).

This implies that the grammatical structures one might use are not available unless a certain degree of linguistic maturity is achieved. By this learners' ability to access to a wide range of grammatical resources is undoubtedly a direct index of their linguistic development. Furthermore, a learner who possesses diverse and a more sophisticated language is more likely to communicate effectively in various situations and to use his or her linguistic repertoire in response to different communicative needs, unlike a learner with a relatively few grammatical resources. Ortega (2003), nonetheless, pointed to some important issues that concern the use of syntactic complexity measures particularly in gauging learners' overall progress in the target language. The first issue raised by her refers to the use of syntactic complexity measures as an absolute index of development. According to her, researchers should not consider syntactic complexity metrics as direct indices of overall language ability; while more complex may mean more developed, it is insufficient to examine L2 development by relying on these metrics alone. These measures, in Ortega's view, can only help L2 researchers to find incidences for a constant change in the interlanguage that can then be compared across groups of learners or even across entire populations. For a learner's language to be fully developed, the learner should possess, in addition to a complex grammar, a sufficient sociolinguistic repertoire which he or she can later use to fulfil various communicative goals.

#### **1.2.2.3.3. Judging Writing Quality**

SCMs have also been examined in order to judge writing quality. Motivated by the aim of finding out to which extent syntactic complexity measures can be good predictors of writing quality, a number of 12 researchers looked into the relationship between

syntactic complexity and writing quality by syntactically analysing writings that were found of a ‘good ‘or’ poor’ quality by means of holistic or analytic ratings. Some of these L2 writing studies found significant links between highly rated L2 writings and sentence sophistication; most high quality essays had more subordination than low quality ones (Grant & Ginther, 2000). Nevertheless, in a number of studies syntactic complexity failed to predict human judgment of writing quality. Crossely and Mc Namara’s investigation (2014), for instance, revealed weak to no relationship between most of the SCMs included, namely, Syntactic embeddings, phrase types, and phrase length measures and what human raters perceived as a good writing. As suggested by Beers and Nagy (2009), despite these inconsistencies among previous findings, syntactic complexity still comprises a relevant production area in evaluating texts quality. Given these results, the relationship between writing quality and syntactic complexity seem to be dependent upon other factors apart from the set of measures used across these studies. Ortega (2003) , on the other hand, went to claim that it would be completely erroneous for researchers to restrict ‘good’ or ‘expert’ writing with the linguistically more complex one, for the composing expertise that the learner develops includes more than just possessing good linguistic abilities.

#### **1.2.2.4. Factors Affecting Syntactic Complexity in L2 Production**

A number of factors were shown to have tangible influence upon the complexity of learners’ syntax in L2 writing. These factors can be classified into three main types: factors related to the learner, factors related to the task and factors related to the context of instruction.

##### **1.2.2.4.1. Learner-associated Factors**

Among the different learner-related variables, learners’L1 background and gender have been shown to have a significant impact on the level of syntactic complexity in their writings. Lu and Ai (2013) compared SCMs means of non native speakers (NNS) with



divers L1 background (English, German, Bulgarian, French, Russian Tswana, Japanese and Chinese) to the means of native speakers (NS), their results showed significant differences in most of the SCMs examined when each of these NNS groups were compared independently. A number of L2 studies also compared the means obtained for the SCMs 'examined' across gender and their results showed significant between gender differences. In Aperocho's study (2016), for instance, male students were found to have higher syntactic complexity than female students; they surpassed their female counterparts in all the employed measures. Contrasting Aperocho's findings, Martinez' recent study (2018) revealed that females' write-ups exhibited higher syntactic complexity than males. Females produced lengthier sentences, more compound-complex sentences, more coordinate clauses and more dependent clauses. So, it can be deduced that differences in L2 production (in this case complexity of the syntax) can largely be attributed to these learner- related variables i.e. 'Native language' and 'Gender'.

#### **1.2.2.4.2 Task –related Factors**

Several task-related variables: timing, genre, and more importantly task complexity were found by means of empirical investigation to have strong and direct impact upon the syntactic complexity of second or foreign language students' writing.

##### **1.2.2.4.2.1. Time Conditioning.**

The time learners devote to the given writing task was found to greatly influence their linguistic performance in general and their syntactic complexity in particular. In his corpus –based evaluation of syntactic complexity across four college level students' writing, Lu (2011) found that untimed essays had higher syntactic complexity than timed ones. This difference is attributable to the distribution of time among the different cognitive process: planning, transcribing, and reviewing .Though originally found to be

subject to proficiency influence, planning time itself strongly affects learners syntactic complexity. A study conducted by Ellis and Yuan (2004) revealed that student who went through the planning stage wrote more complex syntactic structures than those who directly drafted their writings. The positive effect that planning has over learners syntactic complexity and their writing quality on the whole was addressed in a well grounded theoretical model, the so called ‘Overload hypothesis’ which was put forward by (Kellogg, 1990). In explaining how planning may improve writing quality, and hence the complexity of the syntax, Kellogg (1990) claimed that during the writing process a lot of cognitive demands are placed on the writer and only through planning can these demands be reduced to a level that would allow some free space in the working memory ( as cited in Ong, 2014) .

#### **1.2.2.4.2.2. Genre**

The effect of genre on syntactic complexity has also received a considerable attention from first and second language researchers alike. In the context of L2 writing research, Lu (2011), in his attempt to assess the effect of genre on the relationship of syntactic complexity measures to L2 proficiency found that argumentative essays exhibited higher syntactic complexity than narrative ones. He concluded that the relationship of any given metric to L2 proficiency is determined or at least influenced by other factors among which ‘genre’.

#### **1.2.2.4.2.2. Topic**

With respect to task complexity, notably large number of researchers interested in task-based instruction targeted the question whether complexity of learners’ language varies as result of different task demands, and hence determining the validity of task complexity manipulation and its relevance to L2 pedagogy. In the literature of SLA two theoretical models of task complexity were developed, Skehan’s Trad-off model (1998)

and Robinson's Cognition hypothesis (2001). Skehan argued that the learner has limited attentional resources and that in complex tasks that require higher reasoning the learner focuses more on content rather than on form. According to him increased task complexity leads to a prioritization of complexity, accuracy and fluency. In other words, Complexity inherent to the task leads the learner to focus on only one of these aforementioned areas of performance which implies that the output would be complex, accurate or fluent but not all together. Robinson refuted the limited capacity model arguing that learners during production can attend to both meaning and form without having to ignore either one. Complex tasks, in Robinson's view, do not deteriorate linguistic output rather they direct the learner's attention to complex linguistic resources, thus, form and content are not competing but complementary when it comes to written performance. Accordingly, the learner's language gets more complex in higher-reasoning tasks than in lower reasoning ones (as cited in Salimi & Dadashpour 2012).

#### **1.2.2.4.3. Context Effect**

The context where learners receive instruction i.e. ESL vs. EFL setting, was also found to affect the complexity of the syntax of learners' writing. In her research synthesis, Ortega (2003) investigated context impact on the relationship of SCMs to L2 proficiency, her study yielded striking results. ESL learners had higher level of syntactic complexity than EFL learners; the difference was particularly significant in length measures (MLS). Ortega concluded that the instructional setting is highly influential which entails that researchers intending to investigate SCMs in L2 writing should anticipate potential context effect.

## **Conclusion**

Syntactic complexity constitutes a major area of interest within the field of second language acquisition in general and L2 writing assessment in particular. Although this construct has long been the subject of much systematic investigation, the last two decades witnessed a dramatic increase in scholarly attention regarding its use and application in the assessment of L2 writing proficiency and or writing development . Correspondingly, large number of syntactic complexity measures have been proposed and explored in L2 writing research. Though the set of measures employed in L1 and L2 writing research are significantly different, both sets were used with the same purposes in mind; as an index of L2 writing development, L2 writing proficiency and as dependent variable by which to assess the effect of various learner, task and context- associated variables. Regarding their use as a metrics to gauge L2 writing proficiency, previous studies showed inconsistent findings concerning the set of measures that best discriminate between writing proficiency levels. The strength of the association varied significantly across genre, time and instructional setting suggesting that any investigation targeting the assessment of the relationship of SCMs to L2 writing proficiency, in order to get a coherent picture, would first control for those relevant variables.

## **CHAPTER TWO: THE PRACTICAL PART**

### **Introduction**

The first chapter was an attempt to contextualize the present research by providing background information on the variables included i.e. writing proficiency and syntactic complexity. This chapter, nonetheless, deals with the field work; it discusses the specific methods by which the research and analyses were conducted, describes the data collection procedure and presents the findings obtained from the analysis.

### **2.1. Research Methodology**

#### **2.1.1. Participants**

EFL students at Larbi Ben M'hidi University constituted the accessible population for the present study. Students were from varying grade levels namely: Second year, third year, first year master and second year master. They were aged between 18 and 48 and all of them had Arabic as a native language. It is worth mentioning that master students were all from didactics, Literature and Civilization students were intentionally excluded so as to control for potential instruction effect.

#### **2.1.2. Procedures**

##### **2.1.2.1. Corpus Data**

The dataset used in this study was a subset of essays written by EFL learners at four writing proficiency levels, participants were asked to write a cause and effect essay on the same topic (see Appendix A). Task selection was based on two main criteria: topic relevance and genre familiarity. The topic was relevant in that it directly relates to students personal life, the relevance dimension not only evokes students' expressiveness but also

reduces the possibility of plagiarism. As far as familiarity is concerned, the essay follows cause and effect organization which students at Larbi Ben M'hihi generally study in their second year licence and continue practicing it until first year master or beyond. The writing task was untimed; students were given a time period of no less than two days to return their essays, though some essays were received after four weeks. Although all students comprising the four target populations were prompted to write the essay, few of them actually did. Second year students only 68 out of 250 replied (16 were written by males), third year students only 67 out of 235 replied (12 were written by males), first year master only 36 out of 73 replied (5 were written by males) and second year master only 28 out of 53 replied (all the essays were written by females). In order to avoid potential gender effect, only essays written by females were included in the analysis. Prior to the selection of the essays the researcher checked for possible plagiarism, around 5% of the received essays had low risk plagiarism, they were, therefore, eliminated.

#### **2.1.2.2. Sampling**

Due to the labour-intensiveness of corpora codification process only 52 essays were subjected to analysis, 13 essays per each level. In order for the sample to be representative of the particular population from which it was drawn, simple random sampling strategy was employed. Essays were first assigned numbers then by relying on an online research randomizer, random numbers were generated for each set. The sampling procedure used in the present study, therefore, targeted essays rather than participants.

#### **2.1.3. Instruments and Selected Measures**

L2 Syntactic complexity analyzer (L2SCA) developed by Xiaofie Lu (2010) was used to measure the syntactic complexity of the written corpus. This computational tool is particularly designed to automate the analysis of syntactic complexity of English writing samples. The software first generates sentences and identifies their constituents parts using

the Stanford parser (Klein & Manning, 2003) then counts a number of syntactic units utilizing the Tree regular expression or Tregex, for short (Levy & Andrew, 2006). The analyzer primarily relies on the occurrences of the relevant production units generated from the parsed sample in order to compute 14 syntactic complexity metrics. Concerning the software's performance, in identifying the linguistic units i.e. sentences, clauses, T-units, complex T-units, coordinate phrases, complex nominals, and nominal phrases, L2SCA has reported a precision and recall ranging from .830 to 1.000. As far as the computation of the 14 indices is concerned, the software has a reported correlation ranging from .834 to .941 between the automated measures and those produced by human raters. L2SCA is a robust and highly reliable tool in measuring the syntactic complexity of written production, yet it poorly performs in writing samples that contain large number of fused sentences, sentences fragments or miss-punctuated sentences especially those lacking a terminal punctuation mark. (for a detailed description of the software see Lu, 2010). The following table includes the 14 syntactic complexity measures generated by L2SCA.

**Table 2.** *Syntactic Complexity Indices Covered in L2 Syntactic Complexity Analyzer ( Lu, 2010)*

Measure	Code	Formula
<i>Length of production unit</i>		
Mean Length of sentence	MLS	number of words/ number of sentences
Mean Length of T-units	MLT	number of words/ number of T-units
Mean length of clause	MLC	number of words/ number of clauses
<i>Sentence complexity</i>		
Clause per sentence	C/S	number of clauses/ number of sentences
<i>Amount of subordination</i>		
Clauses per T-unit	C/T	number of clauses/ number of T-units
Complex T-unit per T-unit	CT/T	number of complex-units/number of T-units
Dependent clause per clause	DC/C	number of dependent clauses/number of clauses
Dependent clause per T-unit	DC/T	number of dependent clauses/number of T-units
<i>Amount of coordination</i>		
Coordinate phrases per clauses	CP/C	number of coordinate phrases/number of clauses
Coordinate phrases per T-unit	CP/T	number of phrases/ number of T-units
T-unit per sentence	T/S	number of T-units/ number of sentences
<i>Particular structures</i>		
Complex nominals per clause	CN/C	number of complex nominals/ number of clauses
Complex nominals per T-units	CN/T	number of complex nominals /number of T-units
Verb phrase per T-unit	VP/T	number of verb phrase/ number of T-units

As can be seen from the table above the 14 syntactic complexity measures that the software computes are classified into five main types. The first type as previously mentioned includes three length measures; these indices measure the complexity of the syntax in terms of length of production units. The second type measures complexity of the sentence. The third type embodies four measures that gauge the amount of subordination. The fourth type encompasses three coordination measures and the fifth type comprises three measures that gauge the sophistication of particular structures. All except the first three measures are ratio measures. In order to avoid redundancy, only measures that gauge distinct qualities of L2 production were employed in the present investigation. In addition to the three length measures and sentence complexity measure, the researcher selected one measure of subordination, one measure of coordination and one measure of structure



sophistication. The selection of these measures was not random but based on their discriminatory power as reported in previous studies. The set of measures selected are presented in the following table

**Table 3.** *Selected Syntactic Complexity Measures*

Measure	Code	Formula
<i>Length of production units</i>		
Mean length of Sentence	MLS	#of words/#of sentences
Mean Length of T-unit	MLT	#of words/ #of T-units
Mean Length of Clause	MLC	#of words/ #of clauses
<i>Sentence complexity</i>		
Clause per sentence	C/S	#of clauses/#of sentences
<i>Amount of subordination</i>		
Dependent Clause per Clause	DC/C	#of dependent clauses/#of clauses
<i>Amount of coordination</i>		
Coordinate Phrases per Clause	CP/C	#of coordinate phrases/ #of clauses
<i>Particular Structures</i>		
Complex nominals per Clause	CN/C	#of complex nominals/ #of clauses

#### 2.1.4. Corpora Compilation and Analysis

Since the accuracy of the indices that software generates depends largely upon the accurate identification of sentences boundaries, the essays were first thoroughly scrutinized in order to check if there are any problems with punctuation. Run-on and incomplete sentences were revised and those missing a final punctuation mark were punctuated. Essays of the four corpora were then converted to plain text format (txt) then zipped and put into four files; each file comprises the set of essays belonging to a single grade level. After that the four files were uploaded one by one to the batch mode interface and the received output was a csv file containing the 14 syntactic complexity measures computed. Finally, the results obtained from the software were imported into a spreadsheet

for further statistical analysis. Table 4 summarizes the details of the essays sampled from the four groups.

**Table 4.** *Descriptive Details of the Four Corpora*

Level	Number of Essays	Mean Length of Words	Total Number of Words	Genre	Timing
Second year	13	293,46	3815	Cause and Effect	Untimed
Third year	13	427,85	5562	Cause and Effect	Untimed
Master one	13	441,23	5736	Cause and Effect	Untimed
Master two	13	516	6708	Cause and Effect	Untimed
Total	52	419,63	21821	Cause and Effect	Untimed

It is noted from table 4 that second year students wrote shorter essays compared with third year, master one and master two students. Essays written by master two students had the highest average length of words followed by master one and third year student's essays, respectively. Since the computation of most of the syntactic complexity indices involved is based on ratios of syntactic units to other syntactic units in the text, text length would not affect the results in anyway.

### **2.1.5. Data Analysis Tools**

In order to provide accurate answers to the research questions and to test the research hypotheses three statistical procedures were opted for. These were descriptive statistics, multivariate analysis of variance (MANOVA) and a correlation analysis. The descriptive statistics was used so as to provide some preliminary perspective on the trends of the various SCMs employed in the current investigation. In other words, it would help detecting any numerical differences between the four corpora or the four writing proficiency levels. As descriptive statistics cannot determine the relative importance of the differences, running a MANOVA was inevitable. MANOVA was employed because the

dependent variable (syntactic complexity) was measured on seven subscales; the set of SCMs were, therefore, considered as different dependent variables. While it would appear possible to run multiple one way analysis of variance or ANOVAs instead of MANOVA, this former is not appropriate in designs where a linear relationship would exist between the dependent variables and if used in this situation it would certainly cause type one error inflation rate (Howell, 2010). MANOVA on the other hand has power to detect differences even when the dependent variables are correlated, though not when they are highly correlated, hence it was the most suitable statistical procedure to use. Though MANOVA would help determining whether significant differences exist across the four writing proficiency levels for any given SCM, it would not indicate where these significant differences occur, and for that reason running a series of post hoc tests was necessary. As for the correlation analysis, it was run to assess the strength of relationship between syntactic complexity and writing proficiency level.

## 2.2. Results

### 2.2.1. Descriptive Statistics

**Table 5.** Mean and Standard Deviation for Length Measures across Writing Proficiency Levels

Level ( size)	1 (13)		2 (13)		3 (13)		4 (13)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
MLS	22.955	1.795	23.414	6.054	27.807	2.724	27.493	2.644
MLT	18.497	1.265	20.427	1.520	21.683	2.126	22.374	1.988
MLC	9.813	1.003	10.088	1.247	10.946	1.237	11.789	1.057

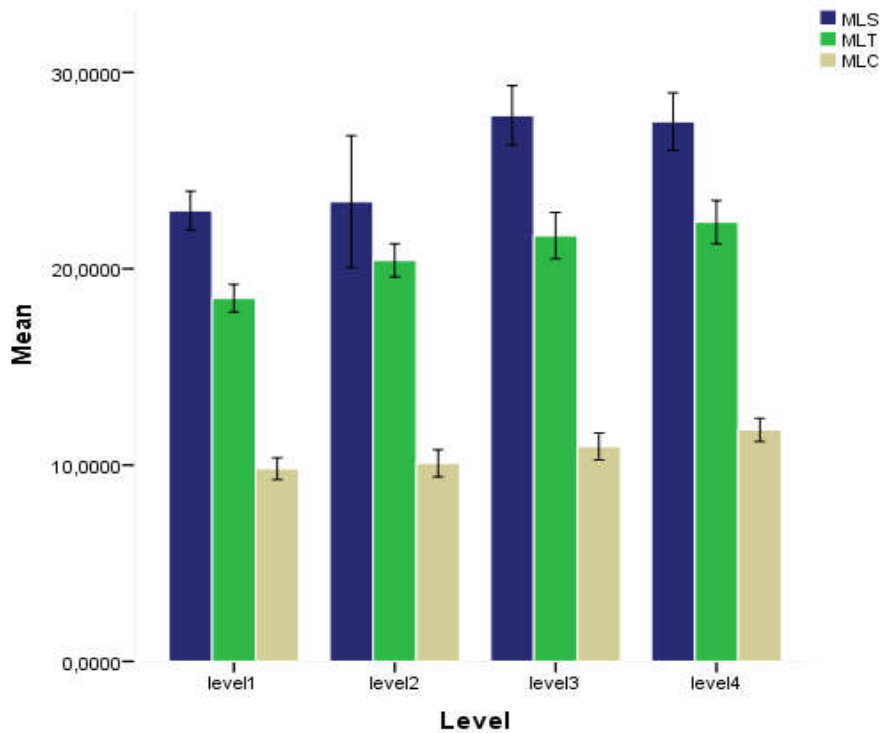
As clearly seen in Table 5, master one students outperformed second year, third year and master two students in MLS ( $M= 27.81$ ,  $SD= 2.72$ ). The difference is particularly considerable between master one, second year and third year students. The difference between master one and master two, on the other hand, is not worthy, yet it was quite

unexpected. Master two students' sentences were in turn longer than the ones produced by second year and third year students. Apparently, second year students wrote shorter sentences than third year students, though the difference is a non-significant one. As far as data dispersion is concerned, third year students' values were greatly scattered around the mean and this is evident in a standard deviation of 6.05.

With regard to MLT a pattern of values similar to that of MLS was observed except that master two students outscored master one student ( $M= 22.37$ ,  $SD= 1.99$ ). It can be noticed that the mean difference between master two and master one students is less significant as compared with the mean difference between either groups and second year; the difference between master one students and third year students is not as significant as the one estimated between third year and master two students but it is still remarkable. Again second year students' T-units were relatively shorter than the ones written by third year students. Perceptibly, MLT values were not greatly dispersed for all the four levels but it should be noted that master one student's values were little spread out around the mean.

Once again master two students surpassed second year, third year and master one students in MLC ( $M= 11.79$ ,  $SD= 1.06$ ); the mean difference, nonetheless, is especially noticeable between master two, second year and third year students. Master one students also produced longer clauses in comparison with second and third year students but the mean difference between master one and second year students was larger than that between master one and third year students. As in the two previous measures (MLS and MLT), second year students' MLC value was the lowest. Furthermore, the standard deviations displayed in table 5 for the MLC are not too large which suggests that most values were clustered near the mean. The comparability is further displayed at the level of

the bar chart (figure 6) which better exhibit the difference between the four writing proficiency levels with respect to length measures.



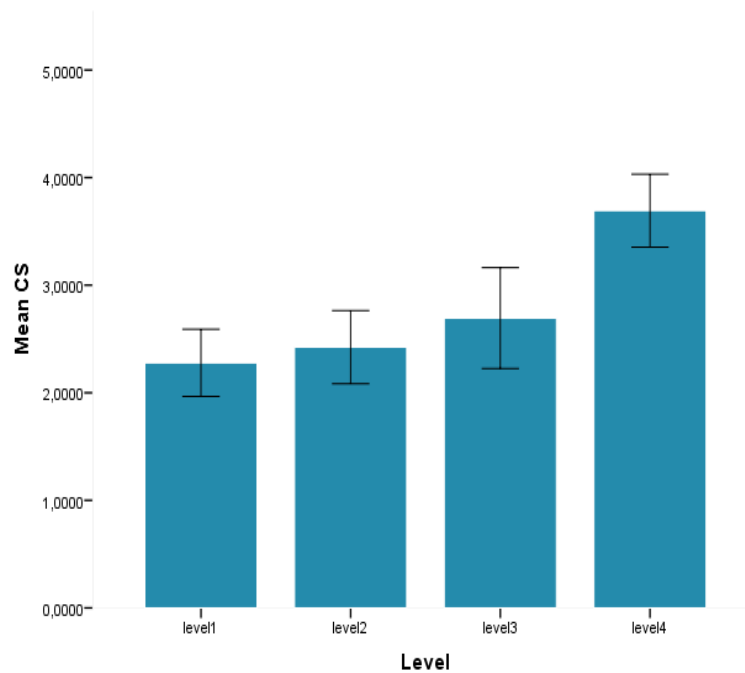
**Figure 6.** Length Measures across Writing Proficiency Levels

**Table 6.** Mean and Standard deviation for Sentence Complexity Measure across Writing Proficiency Levels

Level ( size)	1 (13)		2 (13)		3 (13)		4 (13)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
C/S	2.277	0.516	2.423	0.563	2.693	0.775	3.692	0.560

It is shown in table 6 that master two students' produced more complex sentences than second year, third year and master one students ( $M= 3.69$ ,  $SD= 0.56$ ); clearly the mean difference was not large between master two and master one but it was slightly large between master two, second year and third year students. The sentences that second year and third year students wrote were also less complex as compared to the ones written by master one student, yet the mean difference between either groups was quite small.

Expectedly, sentences that second year students wrote were the least complex. It is pretty remarkable that there was no scatter of values among the four groups. Figure 7 concretely portrays the steady increase in C/S across the four levels.



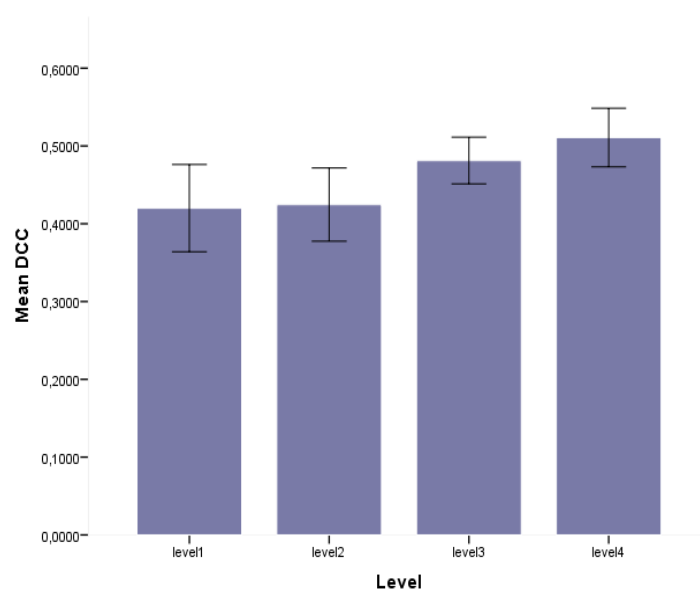
**Figure 7 .Sentence Complexity across Writing Proficiency Levels**

**. Table 7. Mean and Standard for Subordination Measure across Writing Proficiency Levels**

Level ( size)	1 (13)		2 (13)		3 (13)		4 (13)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
DC/C	0.419	0.092	0.424	0.077	0.481	0.049	0.510	0.062

A tangible increase in the mean of DC/C from lower levels to higher levels is shown in table 7. The largest mean was obtained by master two students ( $M= 0.51$ ,  $SD= 0.06$ ) followed by master one, third year, and second year students, respectively.

Observably, the difference hardly splits the first three groups but it does split the fourth group and the first two groups. Since the means obtained by second year and third year students are similar, the mean differences between these two groups and the fourth group are almost the same. The lowest value was again reported for second year students. It is also worth mentioning that DC/C values were closely distributed around the mean as evidenced in the small standard deviations presented in table 7. The divergence is better shown in the diagram below (figure 8)

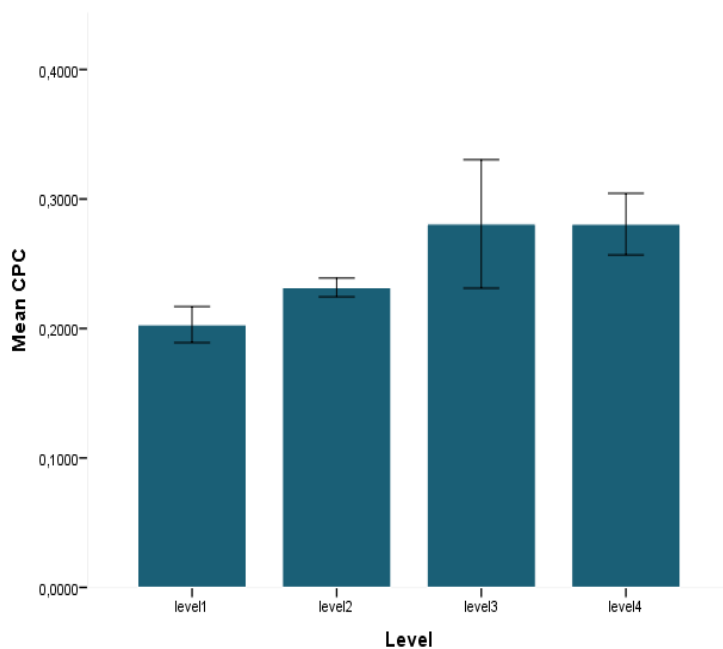


**Figure 8.** Subordination across Writing Proficiency Levels

**Table 8.** Descriptive Statistics for Coordination Measure across Writing Proficiency Levels

Level ( size)	1 (13)		2 (13)		3 (13)		4 (13)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
CP/C	0.202	0.025	0.231	0.013	0.287	0.089	0.280	0.042

It is demonstrated in table 8 that CP/C means obtained by master students were higher than those gained by second and third year students; what is more is that master one and master two students' means were identical ( $M= 0.29,0.28$ ), and hence they varied equally from second and third year students' means. Moreover, third year students' means exceeded second year students but the mean difference is trivial. Master one student's values exhibited greater dispersion and this is even more evident in the large error bars shown in figure 9.



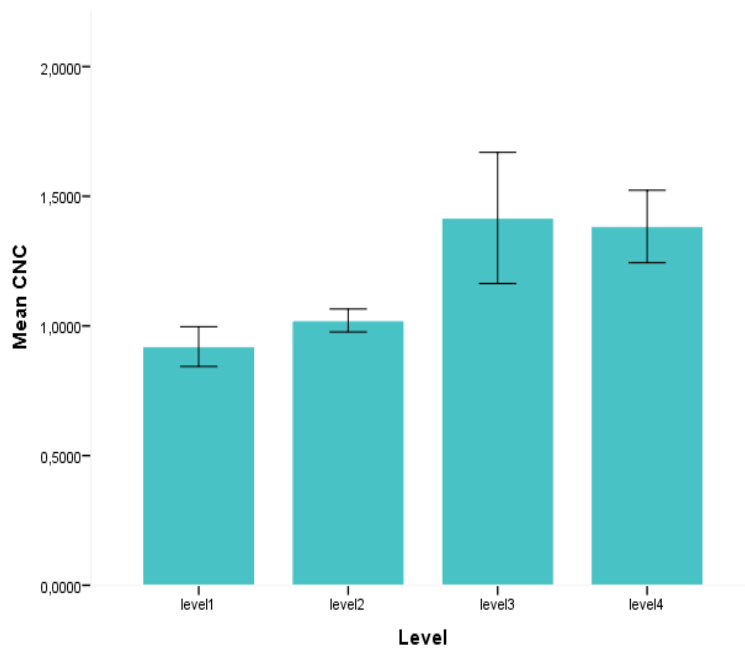
**Figure 9 .** Coordination across Writing Proficiency Levels

**Table 9.** Mean and Standard Deviation for Structure Sophistication Measure across Writing Proficiency Levels

Level ( size)	1 (13)		2 (13)		3 (13)		4 (13)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
CN/C	0.921	0.126	1.021	0.073	1.416	0.418	1.383	0.231



From table 9, it can be seen that by far the greatest CN/C mean was interestingly attained by master one students ( $M= 1.41, SD= 0.41$ ); numerical differences ,however, were only observed between master one, second year and third year students. A numerical difference was also spotted between master two and the first two levels. The lowest value, though pretty close to the one obtained by third year, was the one gained by second year. Although an examination of standard deviations reported for CN/C would reveal that there is not a noteworthy disparity in CP/C values distribution among the groups, closer inspection of the bar chart (figure 10) indicates a high scatter in master one students values.



**Figure 10.** Structure Sophistication across Writing Proficiency Levels

## 2.2.2. Multivariate Analysis of Variance (MANOVA)

### 2.2.2.1. Assumptions Testing

Prior to conducting MANOVA, a series of statistical procedures were performed in order to meet the assumptions of multivariate normality of data distribution, collinearity of dependent variables and equality of variance and covariance matrices, and hence checking whether MANOVA is appropriate for the present investigation.

#### 2.2.2.1.1. Multivariate Normality Assumption

An important assumption in parametric statistical methods is the normal distribution of the dependent variable (s). Shapiro-Wilk test and a visual inspection of their histogram, normal QQ plots and box plots showed that there were no univariate outliers i.e. the dependent variables were approximately normally distributed for the four writing proficiency levels, with skewness and Kurtosis falling within the range [-1.96,1.96].

**Table 10.** *Shapiro-Wilk Test of SCMs*

		Shapiro-Wilk		
	Level	Statistics	<i>Df</i>	<i>Sig</i>
MLS	Level1	,929	13	,333
	Level2	,894	13	,111
	Level3	,890	13	,099
	Level4	,958	13	,726

MLT	Level1	,888	13	,093
	Level2	,928	13	,323
	Level3	,919	13	,241
	Level4	,940	13	,459
MLC	Level1	,950	13	,603
	Level2	,945	13	,521
	Level3	,947	13	,557
	Level4	,974	13	,938
CS	Level1	,902	13	,144
	Level2	,927	13	,308
	Level3	,891	13	,100
	Level4	,898	13	,126
DCC	Level1	,118	13	,997
	Level2	,124	13	,769
	Level3	,144	13	,755
	Level4	,201	13	,399
CPC	Level1	,892	13	,103
	Level2	,921	13	,257
	Level3	,815	13	,070
	Level4	,974	13	,937
CNC	Level1	,958	13	,725
	Level2	,712	13	,107
	Level3	,896	13	,118
	Level4	,918	13	,232

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It is observed in table 10 that  $p > .05$  which implies that our data were not significantly different, and hence the null hypothesis which says that the data are approximately normally distributed was accepted.

**Table 11.** *Skewness and Kurtosis of SCMs*

	Level	Skewness	SE	Kurtosis	SE
MLS	Level1	,019	,616	-1,104	1,191
	Level2	1,055	,616	1,166	1,191
	Level3	,180	,616	-1,669	1,191
	Level4	,730	,616	1,387	1,191
MLT	Level1	,724	,616	-,737	1,191
	Level2	,930	,616	,668	1,191
	Level3	,821	,616	-,103	1,191
	Level4	,567	,616	-,406	1,191
MLC	Level1	-,044	,616	-1,346	1,191
	Level2	,449	,616	-,906	1,191
	Level3	,126	,616	-1,202	1,191
	Level4	-,006	,616	-,286	1,191
CS	Level1	,264	,616	2,070	1,191
	Level2	-,250	,616	-1,110	1,191
	Level3	,370	,616	,511	1,191
	Level4	1,098	,616	-1,484	1,191
DCC	Level1	-,026	,616	,617	1,191
	Level2	,278	,616	-1,040	1,191
	Level3	-,420	,616	-,590	1,191
	Level4	-,535	,616	-,739	1,191
CPC	Level 1	1.044	.616	.302	1.191
	Level 2	-.208	.616	.872	1.191
	Level 3	.737	.616	-1.288	1.191
	Level 4	-.331	.616	-.008	1.191
CNC	Level 1	-1.155	.616	-.709	1.191
	Level 2	-1.066	.616	1.527	1.191
	Level 3	.328	.616	1.434	1.191
	Level 4	1.045	.616	2.123	1.191

Skewness and kurtosis values of all the dependent variables as indicated in table 11 were not too large compared to their standard errors which means that their  $Z$  values would be near zero or somewhere in the span of  $[-1.96, 1.96]$ , thus, we can say that our data were not largely skewed and kurtotic.

#### 2.2.2.1.2. Collinearity Assumption

Another substantial assumption in MANOVA is that dependent variables would be correlated in the moderate range. In order to meet such assumption a set of Pearson's correlations were carried out between all of the dependent variables. As indicated in table 12 significant pattern of correlations was detected suggesting the aptness of MANOVA.

**Table 12.** *Pearson's Correlations, Means and Standard Deviations Associated with SCMs*

	MLS	MLT	MLC	C/S	DC/C	CP/C	CN/C	$M$	$SD$
MLS	1	0,285*	0,291*	0,350*	0,524*	0,324*	0,477*	25,41	4,23
MLT	0,285*	1	0,498**	0,574*	0,441*	0,354*	0,402*	2,26	2,26
MLC	0,291*	0,498*	1	0,366**	0,528**	0,352*	0,448*	10,65	1,35
C/S	0,350*	0,574*	0,366**	1	0,418**	0,358**	0,285*	2,77	0,81
DC/C	0,524**	,441**	0,228	0,418**	1	0,318	0,279*	0,45	0,08
CP/C	0,324*	0,354*	0,353*	0,358*	0,318	1	0,348*	1,18	0,32
CN/C	0,447**	0,402**	,448**	0,285*	0,279*	0,348*	1	0,24	0,06

*Note.* \*\* correlation is significant at the 0.01 level ( 2-tailed). \* Correlation is significant at the 0.05 level ( 2-tailed).

It is shown in table 12 that most SCMs moderately correlate with one another; all SCMs exhibited statistically significant correlation ( $P \leq .05$ ) except CP/C and DC/C exhibited moderate non-significant overlap ( $P = 0.12$ ). It is noteworthy that none of these

correlations were high (i.e  $r < 0.65$ ) which entails that collinearity among the dependent variables is not evident, and hence MANOVA is definitely appropriate to conduct.

### 2.2.2.1.3. Homoscedasticity Assumption

A final statistical analysis that we went through before executing the MANOVA was variance and covariance homogeneity tests. Before opting for the analysis of variance, it is crucial to first assume that comparison groups have similar variance and covariance matrices with regard to the dependent variables under scrutiny. As far as the homogeneity of covariance is concerned the Box's M value of 217.98 ( see table 13) was associated with a  $P$  value of .007, which was interpreted as statistically non-significant following Huberty and Petosky's ( 2000) guideline ( i.e.,  $P > .001$ ). Thus the covariance matrices between the groups were assumed to be equal for the purposes of MANOVA. Furthermore, based on a series of Levene's  $F$  tests (see table 14), the homogeneity of variance assumption was considered satisfied, even though three of the seven Levene's  $F$  tests were statistically significant ( $p < .05$ ). Particularly, although the Levene's  $F$  test suggested that the variance matrices associated with MLS, CP/C and CN/C were heterogeneous, an examination of the standard deviations (see table 5, 8 and 9) revealed that none of the largest standard deviations were more than four times the size of the corresponding smallest which entails that MANOVA would be robust enough to deal with such violations of homogeneity of variance matrices assumption (Howell, 2010).

**Table 13.** *Box's Test of Equality of Covariance Matrices*

Box's M	$F$	$df1$	$df2$	$Sig$
217.98	1.889	84	5226.015	.007

*Note.* Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across the groups.

$\alpha$  is significant at .001

It is indicated in Table 13 that covariance matrices across groups were homogenous ( $P > .001$ ).

**Table 14.** *Levene's Test of Equality of Error Variances*

	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig</i>
MLS	3.427	3	48	.004
MLT	1.506	3	48	.225
MLC	.361	3	48	.782
C/S	.497	3	48	.686
DC/C	1.361	3	48	.266
CP/C	8.900	3	48	.000
CN/C	5.395	3	48	.003

*Note.* Tests the null hypothesis that error variance of the dependent variables is equal across the four groups

As clearly seen in Table 14 the null hypothesis which says that error of variance of the dependent variables is equal across groups was rejected for three measures ( $P < .05$ ) whereas for the other four measures the result was statistically non-significant ( $P > .05$ ) suggesting equality of variance across groups.

#### 2.2.2.2. MANOVA Results

Since the three assumptions were met ( though the variance equality assumption was violated in three out of seven SCMs), MANOVA was performed in order to find out whether the four groups significantly vary in the level of syntactic complexity.

**Table 15.** *Significant Multivariate Effect*

Effect	Wilks' Lambda	<i>F</i>	<i>df</i>	Error df	Sig	Partial Eta Squared
Level	1.116	3.724	21.000	132.000	.000	.372

Closer inspection of table 15 shows that there was a statistically significant multivariate difference between the four levels on the combined dependent variables  $F(21, 132) = 3.724$ ,  $P < .001$ ; Wilks'  $\Lambda = 1.116$ ;  $\eta^2_p = .372$ . This significant result implies that

writing proficiency have an effect size of about 37.2% upon students level of syntactic complexity.

**Table 16.** *Significant Univariate Effects for Writing Proficiency*

Sources	Dependent Variables	Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Between groups	MLS	261.283	3	87.094	6.417	.001	.286
	MLT	122.94	3	37.647	12.153	.000	.432
	MLC	31.215	3	10.405	7.984	.000	.333
	CS	15.848	3	5.283	14.086	.000	.468
	DC/C	.076	3	.025	4.845	.005	.232
	CP/C	2.467	3	.822	13.157	.000	.451
	CN/C	.057	3	.019	7.191	.000	.310
Within groups	MLS	651.472	48	13.572			
	MLT	148.693	48	3.098			
	MLC	62.554	48	1.303			
	CS	18.001	48	.375			
	DC/C	.252	48	.005			
	CP/C	3.000	48	.062			
	CN/C	.128	48	.003			
Total	MLS	34508.138	52				
	MLT	22641.015	52				
	MLC	6002.474	52				
	C/S	433.450	52				
	DC/C	11.293	52				
	CP/C	78.514	52				
	CN/C	3.049	52				



Table 16 displays a follow-up one- way analysis of variance ANOVA which was run to assess the effect of writing proficiency level on each of the combined dependent variables, and hence determining which dependent variable would appear to be contributing to the statistically significant MANOVA (table 15) . Evidently, the between groups variability was greater than the within groups variability. The univariate ANOVAs further showed that all SCMs means were statistically significantly different between students from varying writing proficiency levels: MTS ( $F(3,48) = 6.417, P < .005; \eta^2_p = .286$ ), hence we are confident that about 29% of the variance in MTS is attributable to writing proficiency level. MLT ( $F(3, 48) = 12.153, P < .001; \eta^2_p = .432$ ), implying that about 43.2% of the variance in MLT can be explained by writing proficiency level. MLC ( $F(3, 48) = 7.984, P < .001; \eta^2_p = .333$ ) this entails that about 33.3% of the variance in MLC was the by-product of writing proficiency level. C/S ( $F(3, 48) = 14.086, P < .001; \eta^2_p = .468$ ), which means that around 47% of the variance in C/S was accounted for by writing proficiency level. DC/C ( $F(3, 48) = 4.845, P = .005, \eta^2_p = .232$ ), suggesting that about 23.2% of the variance in DC/C resulted from writing proficiency level. CP/C ( $F(3, 48) = 13.157, P < .001, \eta^2_p = .451$ ), thus around 45.1% of variance can be attributed to writing proficiency level. CN/C ( $F(3, 48) = 7.191, P < .001, \eta^2_p = .310$ ), this implies that approximately 31% of the variance was the result of writing proficiency level. Though the effect of writing proficiency level upon SCMs varied significantly (the effect on C/S is twice as strong as the effect on DC/C), following Cohen's (1969) classification of effect sizes it might be said that the effect of writing proficiency level in general was large i.e.  $\eta^2_p > .058$  (as cited in Richardson, 2011).

**Table 17. Multiple Comparisons**

Dependent Variables	(L) Level	(J) Level	Mean Difference (L-J)	Std. Error	Sig	95% confidence Interval	
						Lower Bound	Upper Bound
MLS	Level 2	Level 1	.459	1.751	.993	-4.627	5.545
		Level 3	4.852*	.905	.000	2.328	7.377
	Level 4	Level 2	4.393	1.841	.119	-.851	9.638
		Level 1	4.539*	.886	.000	2.069	7.008
		Level 2	4.079	1.832	.157	-1.148	9.307
		Level 3	-.314	1.053	.991	2.591	3.219
MLT	Level 2	Level 1	1.930*	.549	.009	.412	3.447
		Level 3	3.186*	.686	.001	1.261	5.111
	Level 4	Level 2	1.256	.725	.332	-.759	3.271
		Level 1	3.877*	.654	.000	2.050	5.704
		Level 2	1.947*	.694	.047	.022	3.872
		Level 3	.691	.807	.827	-1.537	2.919
MLC	Level 2	Level 1	.274	.444	.925	-.954	1.504
		Level 3	1.133	.442	.076	-.090	2.355
	Level 4	Level 2	.858	.487	.316	-.486	2.203
		Level 1	1.976*	.404	.000	.861	3.091
		Level 2	1.701*	.454	.005	.448	2.955
		Level 3	.843	.451	.269	-.404	2.091
C/S	Level 2	Level 1	.146	.212	.90	-.449	.731
		Level 3	.416	.258	.395	-.305	1.137
	Level 4	Level 2	.270	.266	.742	-.468	1.008
		Level 1	1.415*	.212	.000	.831	1.999
		Level 2	1.269*	.220	.000	.661	1.877
		Level 3	.999*	.265	.000	.261	1.736
DC/C	Level 2	Level 1	.005	.034	.999	-.088	.098
		Level 3	.061	.029	.191	-.021	.144
	Level 4	Level 2	.057	.026	.155	-.015	.128
		Level 1	.091*	.031	.037	.004	.177
		Level 2	.086*	.028	.024	.010	.163
		Level 3	.030	.022	.549	.032	.091
CP/C	Level 2	Level 1	.029*	.008	.009	.007	-.051
		Level 3	.078*	.026	.041	.003	.153
	Level 4	Level 2	.049	.025	.256	-.024	.123
		Level 1	.078*	.014	.000	.039	.116
		Level 2	.049*	.012	.007	.013	.085
		Level 3	.028	.028	1	-.078	.078
CN/C	Level 2	Level 1	.101	.041	.096	-.013	.214
		Level 3	.496*	.121	.005	.144	.848
	Level 4	Level 2	.395*	.118	.024	.049	.742
		Level 1	.463*	.073	.000	.257	.669
		Level 2	.363*	.067	.000	.167	.558
		Level 3	-.033	.133	.995	.401	.340

Note. \*The mean difference is significant at the .05

In table 17 there stand out a series of post hoc tests that were carried out with the aim of examining individual mean difference comparisons across all four levels of writing proficiency and all seven SCMs. It should be noted that the multiple comparison procedure followed here is Games-Howell post hoc test; the researcher refrained from running Tukey HSD post hoc test because equal variances were not assumed for three measures (see table 14). Post hoc tests results clearly disconfirmed a number of conclusions that were drawn from the preliminary analysis displayed in tables 5.6.7.8 and 9 in that numerical differences among the four writing proficiency levels were shrunk to a proportion that appeared to be discriminative between non-adjacent levels mostly. The first pairwise comparison shows that in MLS significant differences were detected between master students and second year students ( $P < .001$ ), the increase from level one to level three was estimated at 4.85 (95% CI, 2.33 to 7.38) while the increase from level one to level four was around 4.54 (95% CI, 2.07 to 7.01). Although there was a considerable increase from level two to level three 4.39 (95% CI, -0.85 to 9.64) and from level two to level four 4.08 (95% CI, -1.15 to 9.31) this increase was not statistically significant ( $P = .119$ ,  $P = .157$ , respectively). Furthermore, a negative mean difference of -0.31 (95% CI, 2.59 to 3.22) was found between master two and master one, yet it was not statistically significant ( $P = .991$ ). In the second of these pairwise comparisons, statistically significant differences in MLT were evident between both adjacent and non-adjacent levels: the difference was statistically significant between third year and second year students ( $P < .05$ ), the increase was approximately 1.93 (95% CI, 0.41 to 3.45); between master one and second year students ( $P < .005$ ), an increase of 3.19 (95% CI, 1.26 to 5.11); between master two and second year ( $P < .001$ ), the augmentation was about 3.88 (95% CI, 2.05 to 5.7). The mean difference between master one and third year students 1.26 (95% CI, -0.76 to 3.27) and between master two and master one students 0.69 (95% CI, -1.54 to 2.92),

nonetheless, was statistically insignificant ( $P = .332$ ,  $P = .827$ , respectively). With respect to MLC, statistically significant differences were found between distant levels only, master two and second year students ( $P < .001$ ), the mean difference reached the magnitude of 1.98 (95% CI, 0.86 to 3.09); master two and third year students ( $P < .05$ ), the mean difference equals 1.7 (95% CI, 0.45 to 2.96). All the remaining pairwise comparisons in MLC were statistically insignificant ( $P > .05$ ). Concerning C/S measure, statistically significant differences were spotted among master two and all the three levels; master two and second year students ( $P < .001$ ), the mean difference amounted to be 1.42 (95% 0.83 to 2); master two and third year students ( $P < .001$ ), the divergence was about 1.27 (95% CI, 0.66 to 1.88); master two and master one ( $P < .001$ ), an increase of 1 (95% CI, 0.26 to 1.74), but no other group differences in C/S were statistically significant ( $P > .05$ ). Regarding DC/C most pairwise comparisons were not statistically significant ( $P > .05$ ); statistically significant differences were only found between master two and second year students ( $P < .05$ ), the mean difference was approximately 0.09 (95% CI, 0.01 to 0.18) and between master two and third year students ( $P < .05$ ), the mean difference was estimated at 0.09 (95% CI, 0.01 to 0.16). Most mean differences reported for CP/C were statistically significant, except in two mean differences associated with two adjacent levels the  $P$  value was greater than .05. Statistically significant mean differences were spotted between third and second year students ( $P < .05$ ), estimated at 0.03 (95% CI, 0.01 to 0.05); between master one and second year students ( $P < .05$ ), a mean difference of 0.08 (95% CI, 0.01 to 0.15); between master two and second year students ( $P < .05$ ), the mean difference is around 0.08 (95% CI, 0.04 to 0.12); between master two and third year students ( $P < .05$ ), the increase was nearly 0.05 (95% CI, 0.01 to 0.09). In the final of these pairwise comparisons (CN/C) statistically significant results were observed between master students and the first two levels  $P < .01$ ,  $P < .05$ ,  $P < .001$ , and  $P < .001$ ,

respectively; the mean difference between master one and second year students amounted to be 0.50 (95% CI, 0.14 to 0.85) while the mean difference between master two and second year was about 0.46 ( 95% CI, 0.26 to 0.67); approximately 0.40 ( 95% CI, 0.05 to 0.74) increase was observed between master one and third year students and about 0.36 ( 95% CI, 0.18 to 0.56) raise was recorded between master two and third year students. The statistically significant differences among the four writing proficiency levels are summarized in table 18 below.

**Table 18.** *Significant between Level Differences*

Levels	1-2	2-3	3-4	1-3	2-4	1-4
MLS				4.852		4.539
MLT	1.930			3.186		3.877
MLC					1.701	1.976
C/S			0.999		1.269	1.415
DC/C					0.086	0.091
CP/C	0.029			0.078	0.049	0.078
CN/C		0.395		0.496	0.363	0.463

As can be seen in table 18, a multitude of statistically significant mean differences among the four writing proficiency levels is evident entailing a rejection of the first null hypothesis and acceptance of the first alternative hypothesis

### 2.2.2.3. Correlation between Learners' Syntactic Complexity and their Writing Proficiency Level

A Spearman's rank-order correlation was run to assess the relationship between each of the SCMs employed and writing proficiency level; the non-parametric measure was opted for because writing proficiency level was measured on an ordinal scale suggesting the inappropriateness of Pearson's correlation. Prior to performing the correlation, a preliminary analysis whereby the relationship between the variables of interest was assessed visually was put into evidence. A visual inspection of a scatterplot showed that the variables were monotonically related entailing that Spearman's correlation would be a suitable statistical procedure to follow in this situation. Table 19 summarises the correlation results.

**Table 19.** *Correlation between Students' Syntactic Complexity and their Writing Proficiency level*

Writing Proficiency Level			
	Spearman's rho	Sig	N
MLS	.580 **	.000	52
MLT	.673 **	.000	52
MLC	.559**	.000	52
C/S	.625**	.000	52
DC/C	.462**	.001	52
CP/C	.609**	.000	52
CN/C	.778**	.000	52

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

It is shown in table 19 that all SCMS were positively correlated with writing proficiency level. That is, an increase in SCMs was strongly (except for MLS, MLC and DC/C) associated with an increase in writing proficiency level. Observably, there was a

moderate positive correlation between MLS and writing proficiency level,  $r_s(50) = .580$ ,  $P < .001$ ; a strong positive correlation between MLT and writing proficiency level,  $r_s(50) = .673$ ,  $P < .001$ ; a moderate positive correlation between MLC and writing proficiency level,  $r_s(50) = .559$ ,  $P < .001$ ; a strong positive correlation between C/S and writing proficiency level,  $r_s(50) = .625$ ,  $P < .001$ ; a moderate positive correlation between DC/C and writing proficiency level,  $r_s(50) = .462$ ,  $P < .005$ ; a strong positive correlation between CP/C and writing proficiency level,  $r_s(50) = .609$ ,  $P < .001$ ; a strong positive correlation between CN/C and writing proficiency level,  $r_s(50) = .778$ ,  $P < .001$ . Since the correlation results presented in table 19 were all statistically significant, we can reject the second null hypothesis and accept the second alternative hypothesis.

### **2.3. Discussion**

The aim of the present study was twofold; the initial objective was to examine EFL learners' syntactic maturity and to ascertain whether this latter develops linearly or in way associated to learners writing proficiency as operationalized by their grade level. Another objective that this study sought to fulfil and which is somehow related to the aforementioned objective was determining to which extent the employed SCMs can reliably help in assigning learners to different developmental bands, and hence providing additional evidence to the association that exist between syntactic complexity and foreign language writing proficiency. With respect to the first research questions, it was revealed that learners at higher grades (master) had higher syntactic complexity than their counterparts at lower grades (second year and third year). Second year and third year students produced sentences that were relatively short, perhaps most of their sentences were simple or compound and this might well be confirmed by the small amount of subordination as indexed by DC/C . Second year and third year students write-ups also

exhibited shorter t-units as compared to the ones produced by master students; again this can be explained by subordination ratio DC/C in addition to clause length (MLC). Hunt (1965) affirmed that t-units can be lengthened either by increasing the amount of embedding or by lengthening the clause. Second and third year students' clauses were relatively short and so were their t-units. Sentence complexity ratio C/S confirms our speculation that second year and third year student's sentences were mostly compound; it is true that their sentences were less complex as compared to master students (particularly master two) but the mean still indicates that their sentences were not absolutely simple. Additionally, Second year and third year students were found to employ less coordination as gauged by CP/C. As far as phrasal complexity is concerned, sentence sophistication ratio CN/C shows that second year and third year students tend to elaborate at the sentence and the clause level rather than at the phrase level. With regard to master students, no differences were noteworthy except in one measure (C/S) where master two students outperformed master one suggesting that both levels have equal syntactic competence. One interesting finding that emerged from the analysis is that the level of coordination increased linearly across the four levels and remained constant which is quite confusing. If we consider Norris and Ortega' claim ( 2009) that as writing proficiency level advances the level of coordination decreases as a result to increasing subordination, it is made unequivocal that this finding needs a thorough consideration. Finally, CN/C progress from lower levels to upper levels, though there was an insignificant decrease from level three to level four, supports Norris and Ortega claim that advanced learners tend to elaborate more at the phrase level.

Regarding the second research question "which measures best discriminate between learners from varying writing proficiency levels", our findings go in line with those reported in (Lu, 2011; Ortega, 2003; Kim, 2014) for length measures; MLS, MLT



and MLC were found to increase as writing proficiency increases, though MLS insignificantly decreased from level three to level four. It is also worth mentioning that the differences in all these three measures reached the critical magnitudes proposed by Ortega (2003) for medium sized samples (4.5 for MLS, 2 for MLT and about 1 for MLC). In MLS the mean difference reached the magnitude of 4.85 between level one and level three and the magnitude of 4.54 between level one and level four. In MLT the mean difference between level one and level two reached the magnitude of 1.93 which is closer enough to 2; as for the mean differences between the last two levels and the first level, the magnitude was 3.186 and 3.88, successively. In MLC the mean differences reported between the last two levels and the first level were both above 1 (1.70 and 1.98, respectively). Corroborating the results reported in (Cooper, 1976) and disconfirming the results of Lu (2011), both MLS and MLC were found to discriminate between nonadjacent levels only, while MLT was found to also discriminate between one adjacent level (level 1 and 2). C/S was found to discriminate between one adjacent level (3-4) and two nonadjacent levels (1-3 and 1-4) and DC/C was found to differentiate between two nonadjacent levels (2-4 and 1-4), this contrasts with the results obtained from (Lu, 2011) where these two measures were shown to negatively discriminate between nonadjacent levels. CP/C was shown to discriminate between one adjacent level (1-2) and three nonadjacent levels (1-3, 2-4 and 1-4), in Lu (2011), however, CP/C was found to discriminate between two nonadjacent levels only. CN/C, like CP/C, is shown to differentiate between one adjacent (2-3) and three nonadjacent levels (1-3, 2-4 and 1-4) which is consistent with the findings reported in (Lu, 2011; Kim, 2014).

The last of our research questions sought to assess the relationship that might hold between learners' syntactic complexity and their writing proficiency level. The correlation study revealed that there is a positive correlation between syntactic complexity and writing

proficiency i.e. an increase in the latter unavoidably entails an increase in the former. As for the strength of this association it ranges between moderate to strong.

All in all, the obtained results validate both the first alternative hypothesis which says that there would be one or more mean differences in syntactic complexity between learners from varying writing proficiency levels and the second alternative hypothesis which states that there is a relationship between learners' syntactic complexity and their writing proficiency.

### **General Conclusion**

This study evaluated syntactic complexity across four writing proficiency levels. Corpora were taken from second year, third year, master one and master two students at the English department of Larbi Ben M'hidi University. The data were first parsed by means of a powerful corpus software; the corpus analysis was, then, followed by a set of statistical procedures. Results demonstrated significant between level differences in all the SCMs used and a perceptual increase in syntactic complexity as writing proficiency increased. This resulted in the confirmation of both the first and the second alternative hypotheses

### **Pedagogical Implications**

Findings of the present investigation suggest several courses of action for foreign language teachers. Since the reliability of syntactic complexity measures in differentiating between learners from varying writing proficiency levels has been validated, teachers are recommended to include syntactic complexity as a criterion in writing assessment. This would certainly help detecting patterns of development among learners from the same grade level which would in turn direct teachers' attention to weaknesses in their instruction

or in the curriculum as whole. This endeavour is easy to reach since various computational tools have been developed to automate syntactic analysis. It is hopefully expected that through regular evaluation of learners' syntactic complexity, teachers would, at least partially, shrink the gap and decrease the variability among learners. Teachers are also urged to use intensive sentence- combining practices with beginners and intermediate learners so as to help them produce more elaborate structures at an early stage of development.

### **Limitations of the Study**

As any investigation, some difficulties and setbacks were encountered at some points in this study. Perhaps the most important obstacle was students' low motivation to write which greatly hindered the data collection process. Furthermore, among many of the received essays only few were written by males which made it impossible for us to include writings by both genders; this led to greater bias in the sample. Moreover, due to time constraints and the nature of the analysis, the study used a medium sized sample which inescapably limited the generalisability of the findings.

### **Suggestions for Future Research**

Given the limitations that prevented this study from being more reliable, further research regarding the relationship between syntactic complexity and writing proficiency is required. Future investigations, nonetheless, are urged to consider the following points:

- Minimizing sampling bias by equally including writings of both males and females. This inclusion, would certainly pave the way for some illuminating comparisons that would offer new insights on how gender may affect learners attainment of syntactic complexity.

- Working on a more representative sample by enlarging the sample size;  
A larger sample size would allow for the employment of more powerful statistical analyses such as “discriminant function analysis”.
- Including other criteria in task design would also be of great interest, future researchers may use other writing genres and more complex tasks before assessing learners’ syntactic complexity.
- Selecting other measures of subordination, coordination and structure sophistication.
- Using the native writer as a criterion of comparison would provide a better description of EFL learners’ syntactic complexity.

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## **Appendix A: Writing Instruction**

### **Topic :**

Choosing a college major is unquestionably important step in anyone's life, simply because the decision one makes lays the foundation for establishing the initial directions of his or her young adult life, and hence determines his or her success afterwards. In a well organized essay discuss the particular causes that made you choose English as your college major.

### **Guidelines:**

- Your essay should not be less than 18 lines and shouldn't exceed 40 lines.
- Make sure you do not include any headings or subtitles .( directly start your essay)
- Pay close attention to punctuation marks.
- Indicate your gender and your grade level in the file's name.

## **Appendix B: Sample Essay of Second Year Students**

There is nothing important than choosing one's speciality at university ; this step not only determines person's success but more than that life in its broadest sense. Different reasons lay beneath my choice of English among which my constant love to English customs and culture. Other reasons include admiring travelling to English speaking countries and understanding moving without having to read subtitles.

Being able to speak English was a goal that i always attempted to achieve, this was the only way for me to visit an English speaking country like united states or England. By having a major in English i was sure that all the obstacles that stand in my way to the western word.

Furthermore, i like American culture with all its aspects, from food to drama to clothes and calibrations and i have always wanted to integrated within this multiput culture. Attaining a native like pronunciation would help me in this matter.

In a nutshell, my choice of college major was mainly based on three interrelated reasons namely: being a person who likes moving from and into different cultures, my constant love to English culture and finally my inability to understand English while watching films.

## Appendix B: Sample Essay of Third Year Students

Once high school is over , a more serious phase starts , one that would prepare you to face life and reality , and that's what happens during college years . Picking out a college major is one of the most important decisions you're ever going to have to make . Even though I've always loved english , i only chose it as a major because i couldn't achieve my original goal , and also for it being convenient , since i had a great passion for the language and for the american culture .

The original plan was becoming a pilot , but life got in the way of that , i couldn't join the academy where i would have that opportunity later on in life , so i just let my studies go downhill as a kind of rebellion . By the time high school was over , i haven't had an average high enough that would permit me to have much of a choice , since that's how things go in this country , i went with english . The possibility of having a scholarship motivated me to make it my first choice before other scientific majors .

Choosing english as a college major was probably the safe choice to make . Being familiar with the language and affected by the american culture and way of life definitely pushed me towards making it my major .I haven't struggled in my studies in anyway during the past four years , when i say studies i mean the concept of succeeding from one year to the next , and that just proves how convenient my alternative choice was . Four years later , i can't say i wasn't disappointed with my choice , it is safe and convenient for sure , but it wasn't what I've excepted it to be like . College made me lose my passion for english , one would think choosing english as a college major would be an enlightening experience , instead of it being that , all I've

experienced was a dull routine of continuous tests and exams , which i usually perform well in exams in order to become teachers , as if it was the only option there .

## **Appendix D: Sample Essay of Master One Students**

When you fell in love with something from the first glance, you remain faithful to it eternally. That “something” for me was the English language. When I recall the first word I ever heard in English I rather laugh. I used to watch American movies along my dad and despite the fact that I did not understand a word of what they were saying, I enjoyed every moment of those movies. By time, I made more efforts to follow the subtitles and understand the meanings. It is true that it was hard for an 11-year-old girl to catch up every single word, but I tried my best and it became my hobby: scanning subtitles. Nevertheless, it was not satisfying to read in my native language; I wanted something more. Therefore, I started coining the subtitles with the original English words. Only then, the real learning, as I like to call it, has begun. I suppose that it was clear enough for everyone who knew me that I would surely choose English as my future major. It was no surprise then that once I got my BAC I chose English as my first major.

Unlike many students who were, mainly, forced to select English as their major in University, my choice was out of passion and love. It was my desire right from the beginning to study English. Something that I am truly grateful for is my supportive dad. He never opposed me no matter what. He always favoured my own judgement over any other considerations. Because of that, I found it rather easy to invest efforts and learn more.

In my family, the main concern for most of my cousins and relatives is to select a major that guarantee the future job. Thankfully, I never made that naïve concern my number one priority. It is true that thinking about the future is as equally important as living in the present, but that does not mean to let that turn into a tormenting obsession. English as my major may help me find a job and so is the case of an Economy or a French student. As I firmly believe, we should first concern ourselves with learning and developing our prowess before jumping to the conclusions.

## **Appendix D: Sample Master Tow Student's Essay**

« Your choices determines your orientations, your passion determines your interests, your ambitions determines your success », a quote of my own which I put in mind whenever I have to decide on something significant in my life. Among these decisions I had to make was deciding about my major in college. Though it was very difficult to decide about what to choose, since it would be the first steps toward my career; I finally managed to decide to go on as an English student. Three main reasons pushed me to take such a decision: first my admire of the language, second the loyal statue of English in the world and third the possibility to gain a scholar ship to a foreign country.

First of all, my passion toward the English language derived me to choose it as a major in college. Listening to words and structures produced by native speakers on TV was melodic to me. I enjoyed watching programs and shows where English is used. I was fascinated by books, novel, shorts stories and every English piece of writing. Unfortunately I was too young and I couldn't read most of them. Though I knew that this language is more than an ink on a paper but it holds cultures, peoples and worlds between its lines.

Moreover, English rank as an international language is another reason that made me proceed my studies in the English department. I witnessed the world growing bigger and developing the day after the other. For the English language it was the same. This Germanic language dominated people's speeches and has become the world's first tongue. Youngsters, elders and different ethnic groups are speaking the language. It became a center of interest in institutes, schools and universities all over the world. Great conferences and world meetings are done through English. As for the new technological devices are programmed in this language. I personally felt the need to be part of such

revolutionary progress. And this can only be done via learning and studying the new dominating language.

Furthermore, gaining a scholar ship to a foreign county was a third reason behind my choice. In my home city university excellent students have an opportunity to travel outside the country and continue their studies in an English speaking country. This privilege was like a golden chance for me. I believe that speaking the language with non-native speakers is a superficial learning and it's like observing how things progress from above. However, speaking the language with its natives is like experiencing things from within. I was and I'm still eager to see the mother land of English where all the magic happens.

To sum up, many reasons led me to end up as an English student. Among which my passion toward the language, being amazed by its significant position and my eagerness to be part of a native English speaking world. If I had to admit something that would be choosing English as a college major is one the rightful decisions I have ever made and it's something I will never feel sorry or regret about.



## Résumé

Un nombre croissant de preuves stipule que la complexité syntaxique des apprenants d'anglais langue étrangère est largement déterminée par leur niveau de compétence à l'écrit. Concernant les apprenants en EFL à l'université L'arbi Ben M'hidi, aucun essai n'a été fait pour évaluer leurs écrits du point de vue syntaxique ou établir des liens possibles entre leur niveau de compétence à l'écrit et la complexité des structures qu'ils usent en anglais. Compte tenu de cette lacune, cette étude vise à déterminer si la complexité syntaxique des apprenants varie selon les différents niveaux de compétence à l'écrit. Une méthode fondée sur le corpus et un outil de calcul robuste, l'analyseur de complexité syntaxique L2, ont été utilisés pour calculer sept mesures de complexité syntaxique pour 52 essais. Les résultats ont démontré que la complexité syntaxique variait significativement entre les étudiants de master, de troisième et de deuxième année; les apprenants des niveaux supérieurs présentaient une syntaxe plus complexe que leurs homologues des classes inférieures. Les résultats ont également indiqué qu'il y avait une corrélation positive entre la complexité syntaxique des apprenants et leur niveau de compétence à l'écrit. En raison de ces résultats, un certain nombre d'implications pédagogiques ont été données, des limitations ont été discutées et des suggestions pour des recherches futures ont été identifiées.

## المخلص

تشير مجموعة متنامية من الأدلة إلى أن التعقيد التركيبي لمتعلمي اللغة الإنجليزية لغة أجنبية يتم تحديده بشكل كبير من خلال مستوى إجادة الكتابة لديهم. بالنسبة إلى متعلمي اللغة الإنجليزية لغة أجنبية في جامعة العربي بن مهيدي ، لم تُبذل أية محاولات لتقييم كتاباتهم من الناحية التركيبية أو لإنشاء تعالق محتمل بين مستوى إجادتهم للكتابة وتعقيد التراكيب التي يستخدمونها أثناء الكتابة بالإنجليزية. ونظرا إلى وجود هذه الفجوة ، تولت هذه الدراسة تحديد ما إذا كان التعقيد التركيبي للمتعلمين يختلف باختلاف مستويات إجادة الكتابة. وقد تم اتباع منهج يستند إلى مدونة وأداة حاسوبية قوية محلل التعقيدات التركيبية للغة الأجنبية 2 بغية حساب سبعة تدابير تعقيد تركيبية لـ 52 مقالة. أظهرت النتائج المتحصل عليها أن التعقيد التركيبي اختلف بشكل كبير بين طلاب الماجستير والسنة الثالثة و الثانية حيث أظهر المتعلمون في الصفوف العليا بناء أكثر تعقيداً من نظرائهم في الصفوف الدنيا. كما أشارت النتائج أيضاً إلى وجود علاقة إيجابية بين التعقيد التركيبي للمتعلمين ومستوى إجادتهم للكتابة. على أساس هذهالنتائج ، قدم عدد من الآثار التربوية ، وتمت مناقشة القيود وتم تحديد اقتراحات للبحوث مستقبلية