ELSEVIER

Analysis of syntactic complexity in secondary education ELF writers at different proficiency levels

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ARTICLE INFO

ABSTRACT

The present study examines differences in syntactic complexity in English writing among lower intermediate and intermediate secondary education writers by means of quantitative measures of syntactic complexity, and compares the scores on the selected syntactic complexity measures with holistic ratings of learners' overall writing quality. We examined the writing of 188 students at years 3 (lower intermediate) and 4 (intermediate) of secondary education including gender in the analysis. Essays were evaluated by holistic ratings of writing quality and quantitative measures gauging complexification at the sentential, the clausal, and the phrasal level of syntactic organisation. Data revealed significant strong correlations between the holistic ratings and all but one of the complexity metrics. The scores on the general quality of the writings and on all syntactic complexity measures increased from grade 3 to grade 4 and for all but one sentential complexity measure (compound-complex sentence ratio) the increase was statistically significant. Girls obtained a higher score in the general quality of the compositions and in all the measures examined, and for four measures the difference in score was significant.

1. Introduction

In recent years L2 writing has started to play an important role in EFL/ESL research, and complexity has become a salient construct to assess and investigate L2 writing performance and development (Bulté and Housen, 2014; Wolfe-Quintero, Inagaki and Kim 1998). As Bulté and Housen (2014: 43) state: "In L2 research, as in L1 research, complexity has been proposed as a valid and basic descriptor of L2 performance, as an indicator of proficiency and as an index of language development and progress".

Complexity is an intricate construct, made up of several sub-constructs and components, each of which can be independently assessed (Norris and Ortega, 2009). An attempt to capture this multidimensionality is Bulté and Housen (2012, cited in Bulté and Housen, 2014). Bulté and Housen (2012, cited in Bulté and Housen, 2014: 43) distinguish between three components of L2 complexity: propositional complexity, discourse-interactional complexity, and linguistic complexity.

Linguistic complexity, the focus of the present study, has clearly received the most attention in L2 writing research. It has been defined as "the extent to which language produced in performing a task is elaborate and varied" (Ellis 2003:140). As Bulté and Housen (2012, in Bulté and Housen, 2014: 43–44) argue, "linguistic complexity can be investigated at the level of the language system as a whole (or of its major subsystems) and at the level of the individual linguistic features (forms, structures, patterns, rules) that make up such (sub-)systems. The complexity of these structures can in turn be studied from a formal and functional dimension. All these different components and subdimensions of complexity can be studied across various domains of language such as the lexicon, syntax, and morphology".

The present study focuses on syntactic complexity, understood broadly, as "the range and the sophistication of grammatical

resources exhibited in language production" (Ortega, 2015:82). For the present purposes, complexity means that "the more components a feature or system consists of, and the more dense the relationships between its components, the more complex the feature or system is" (Bulté and Housen, 2014: 46). As Ortega (2015: 82) states, "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".

The aim of the present study is to examine the relationship between syntactic complexity and both successful L2 writing and L2 proficiency. There is a wealth of complexity measures available in the L2 acquisition literature and, as Bulté and Housen (2014: 44) point out, most L2 studies use only one or two complexity measures. As a result, L2 complexity research studies suffer from low content validity (Bulté and Housen, 2012, cited in Bulté and Housen, 2014).

Thus, from an approach to complexity that regards it as a highly complex construct, consisting of several components, our study on secondary-level writers at different levels of proficiency will incorporate measures that capture different aspects of syntactic complexity: at the sentential, the clausal and the phrasal level.

Within this approach, the present paper intends to clarify the contrasting findings in the literature regarding the relationship between holistic rating of composition quality and complexification at multiple levels of syntactic organisation. In addition, the focus on secondary education EFL learner writing in the present paper makes a novel contribution, as it has received very little attention as regards syntactic complexity in writing in the literature. Finally, the focus on gender is also a novel contribution of the present study, and the scarcity of research into the differences in syntactic complexity between males and females calls for further research.

2. A review of the literature

The importance of syntactic complexity in second language (L2) writing research is now widely acknowledged. Before we focus on the several areas of research covered in this domain, we will refer to the tools for syntactic complexity measurement in L2 writing research.

2.1. The conceptualization and operationalization of syntactic complexity measurement in L2 writing research

According to Norris and Ortega (2009), L2 learners complexify the sentential, the clausal, and the phrasal levels of syntactic organisation at different stages of development, therefore all three levels must be measured to fully examine L2 development. Following this recommendation, a series of recent studies select various sets of measures capturing these levels of complexity to gauge syntactic complexity. Bulté and Housen (2014:47) select ten measures based on the average length of different linguistic units and on a ratio of a specific subtype of a linguistic unit to a more general subtype or a higher-order unit. These measures are intended to target sentence complexity in terms of the mean length of sentential unit in words, in terms of clauses, and of proposition combining and clause integration strategies. They also focus on syntactic complexity at the clausal and phrasal level. Yang, Lu, & Weigle (2015:55) also approach syntactic complexity as a multi-dimensional construct and select eight measures divided into global and local-level complexity measures. These measures represent several interconnected sub-constructs including clausal coordination, clausal subordination, phrasal coordination, and noun phrase complexity. Mazgutova and Kormos (2015:6) also examine multiple measures representing the many dimensions discussed above. They use five measures to assess clausal elaboration, embedding, phrasal complexity and syntactic structure.

Three sets of measures on sentential syntactic complexity taken from Bulté and Housen (2014) were selected in the present study, each representing a different but interrelated aspect of sentence complexity. We decided to use the sentence instead of the T-unit to assess syntactic complexity in our study. The reason is that the literature suggests that the sentence is more adequate for the description of syntactic complexity in the writing of older learners whereas the T-unit is particularly useful for oral production and the description of syntactic complexity in the writing of children (e.g., Bardovi-Harlig, 1992). The first set of measures gauged sentence complexity in terms of the mean length of sentential unit in words. This is an overall length measure defined along the work of Bulté and Housen (2014) and Yang et al. (2015) as "number of words divided by number of sentences". The second set measured sentence composition in terms of clauses. It is intended to apprehend the different types of sentences as defined by traditional grammars (simple and dependent sentences). The third set of measures gauged sentential syntactic complexification in terms of the combination of propositions and clause linking. It intends to capture clausal coordination and subordination, along the work of Bulté and Housen (2014). Finally, in order to look at multiple measures at different levels, we included one measure of syntactic complexity at the phrasal level: mean length of noun phrase defined as "number of words divided by number of noun phrases". The syntactic complexity measures in this study target both the sentence level of syntactic organisation as well as the phrasal and clausal level, and both global (mean length of sentence) as well as local-level complexity measures (coordinate clause ratio, dependent clause ratio and mean length of noun phrase) are represented in the study.

The set of syntactic complexity measures in this study include measures that have been commonly used in the writing literature together with measures of syntactic complexity at the phrasal level, which constitute a recent approach in L2 complexity research. All these measures are consistent with the criterion formulated above that we need to look at multiple measures at different levels of syntactic organisation, levels that are intended to be represented distinctly with the measures selected.

Several areas of research have been covered in the domain of syntactic complexity in second language (L2) writing research. What follows is an exploration of such areas in the literature.