

Chapter 23

Dynamic Effects of Repeating a Timed Writing Task in Two EFL University Courses: Multi-Element Text Analysis with Coh-Metrix

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ABSTRACT

The longitudinal effects of repeating a timed writing activity on English as a Foreign Language (EFL) students' second language (L2) writing development were investigated. Data for 46 students in two university classes (23 in each class), each with a different course objective, were collected 30 times in the same way over one year. The students' compositions were analyzed for fluency, grammatical complexity, and lexical complexity. Text analysis using Coh-Metrix showed that task repetition had an overall effect on L2 writing development. The text analysis was supplemented with a visual analysis using moving min-max graphs. Grammatical complexity developed more prominently than the other aspects of writing in both classes. This counter-predictive result points to the significance of the writers' reflective consciousness towards their own writing. This study also emphasizes that it is important to study the dynamics in L2 writing development with multi-wave data.

INTRODUCTION

This study investigated the longitudinal effects of repeating a timed writing activity on English as a Foreign Language (EFL) students' second language (L2) writing development. Studies on task

repetition have shown that the quality of students' spoken language improves when the same task is repeated, because learners can pay focal attention to form the second time (Bygate & Samuda, 2005). However, it is unclear what effects repetition of a writing task brings about, assuming that learners are less pressured in writing.

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We have clarified a group of learners' developmental changes and focused on the non-linearity of writing development. We assessed which of the three principal aspects of L2 writing (fluency, grammatical complexity, and lexical complexity) develop in one year. To analyze L2 writers' texts, we used the web-based computational tool *Coh-Metrix* (Graesser, McNamara, Louwerse, & Cai, 2004). The development of sophisticated computer programs such as Coh-Metrix coupled with a large corpus has made it possible to identify notable features of L2 texts (e.g., Crossley & McNamara, 2009a; McCarthy, Lehenbauer, Hall, Duran, Fujiwara, & McNamara, 2007). However, the corpora used in previous studies largely consisted of texts written by advanced L2 writers (e.g., high intermediate to advanced writers in Crossley & McNamara, 2009a and L2 scientists whose work had been published in academic journals in McCarthy et al., 2007). The students we focus on in this study are basic writers who had few chances to write in L2 outside the classroom. Their writing is usually short and contains many grammatical errors. Therefore, it is worth inquiring whether Coh-Metrix can capture the changes in such basic writers' performance. We assessed if any textual features in their writing changed significantly during one year. These changes are further examined with a graphical method.

The Dynamic Nature of L2 Writing Development

The significance of longitudinal research on L2 learning is often emphasized (Ortega & Iberri-Shea, 2005), but there is still a dearth of such research. Research on L2 writing development is no exception, although many studies have identified various characteristics of L2 writing at different developmental stages (Hinkel, 2002). However, scant attention has been paid to how these features change over time. Some longitudinal studies have looked at changes in L2 writing, but they were often either cross-sectional (Henry, 1996; Kern

& Schultz, 1992), did not look at a variety of text features (Bardovi-Harig, 2002), or focused on a small number of writers (Larsen-Freeman, 2006; Verspoor, Lowie, & van Dijk, 2008).

Moreover, two-wave research designs have often been used to investigate developments in learners' L2 writing skills. Usually, a pretest and a posttest are conducted, and a t-test or ANOVA assesses the difference between the two time points (e.g., Ishikawa, 1995; Shaw & Liu, 1998). However, while such an approach reveals *whether* L2 writers have developed or not, it is difficult to detect *how* they developed their writing. The two-wave research design assumes linear development, and rules out the possibility that writing may develop in a non-linear way.

To explore the *how* of L2 writing development, this study focuses on the non-linearity of language development (Larsen-Freeman & Cameron, 2008). The exploration of non-linear language development requires multiwave data (Willett, 1994). That is, data is collected from each participant multiple times, which enables us to plot growth trajectories. To analyze these trajectories, various (especially visual) tools have been proposed, such as a polynomial trendline, moving min-max graph, and detrended representation of L2 development (Verspoor, et al., 2008).

Larsen-Freeman (2006) studied the development of oral and written production by five Chinese adults living in an English-speaking country in terms of their fluency, accuracy, and complexity over six months. She collected data from these participants four times during the period. Each time, they engaged in the same task, writing a narrative about their life story and then talking about it. As a group, there was overall progress in all aspects of the participants' writing, and each aspect showed a rather linear progress. However, Larsen-Freeman also revealed that paths to development widely diverged from individual to individual in terms of the rate of developmental speed and the relationship among different features of writing. For example, one participant developed

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