

# Integrating Complex Variables in the Measurement of L2 Speech Production: Focusing on Complexity, Accuracy, Fluency, and Creativity

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## Abstract

This study focuses on how the speaking performance of Japanese learners of English changes over time regarding creativity, as well as complexity, accuracy, and fluency (CAF). By adopting the perspectives from dynamic systems theory (DST), this study describes the nonlinear changes of learners' performance over a period of time. Moreover, focusing on creativity, in addition to CAF, enables us to investigate speaking performance from a different viewpoint.

The participants of this study are Japanese university students who learn English as a foreign language. They were assigned tasks to tell stories based on cartoons. Their speaking performance was recorded and transcribed. The data was then analyzed regarding the CAF of their English production. In addition, the creativity of participants' performance was evaluated based on a rubric containing categories such as image, characterization, voice, and storyline. The results indicated that learners' speaking performance did not improve linearly in terms of CAF which also explained language development from the perspectives of DST. Furthermore, although learners' speaking performance in terms of CAF fluctuated, the creativity showed a rather stable pattern. Based on these results, methods for providing speaking instruction to different developmental patterns is also discussed.

Keywords: speaking performance, complexity, accuracy, fluency, dynamic systems theory, creativity

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Dr. Naoko Ozeki is a professor at the School of Global Japanese Studies, Meiji University. Her areas of interest are ELT, speaking production, and learner autonomy. By giving lectures and workshops, she works actively to improve English education with organizations such as the ELEC and Eiken.

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