

Dynamics System Analysis in Measuring English Language Performance

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ABSTRACT

Measuring the performance of language is a challenge to the education system in every education level. In measuring the performance of language, the analysis should be conducted in each individual to find the best understanding of the learners' real performance of language ability on language learning. Conventionally, the test evaluator is evaluating the achievement by using a one-time test to analyze the language achievement in a time-saving and simple evaluation. While the conventional evaluation method seems to be practical, the result of the evaluation is only revealing the language achievement on the day the test is administered by ignoring the dynamics of the language acquisition of the learners. The research is dealing with implementing a new method in understanding language acquisition of the performers. The research employs descriptive-quantitative method and gathering the data in a series of 4 times data collections by using specific task to the students in English department of UMM as the purposively selected subjects. Following the data collection, the analysis is conducted in a series of 4 analyses to show the 'movement' or the dynamics of the language performance and use. Based on the result, the research validates the dynamics system analysis as a new method of measuring language performance in detail.

Keywords: Dynamics System Theory, Language Performance, Language Learning

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INTRODUCTION

Understanding the way the people acquire the language requires an in-depth analysis on each elements of the language being used. The way a person acquire a language, or language acquisition, can be vary to each person including the environment of the language learning, the intelligence of the person, the willingness and choice of learning topics and methods, or the material that is being used in the language learning. Another point to be considered is the role of a teacher in the language acquisition in which varied from the provider to the evaluator of the language learning.

In the role of teacher as the evaluator, the evaluation process takes an intense time of the conduct in each individual learners to find the best understanding of the learners' achievement on language learning. In most condition, the teacher is evaluating the achievement by using a scheduled test to understand the language achievement to get an easy and time-saving evaluation. This problem happened mostly on human factor as it can be concluded from the previous research (Adityo & Wardani, 2019) that using tool for evaluation has similar strength to human evaluation. While the aforementioned evaluation method involving human seems to be practical, the result of the evaluation is only revealing the language achievement on the day the test is administered by ignoring the dynamics of the language acquisition of the learners.

The form of understanding the language acquisition can be varied to understanding the fluency, accuracy, or the complexity of the learning process in an in-depth analysis on each elements. It was proposed that complexity of the language is the goal of language learning as the role of language as a communication tools dictate us in using more complex utterances in delivering our meaning. In understanding the raise of complexity of the utterances, a research to find a new method of language measurement should be conducted by implementing the dynamics system theory in understanding the students' language performance.

In measuring the language, the view that language learning can be measured in one event must be further revolutionized to dynamics event as language performance is more to a complex activity involving social environment and personal reason in performing the language (Adityo, 2015), as well as its preferred application from its performer.

This research is focused in proposing a new method of measuring language performance by validating the implementation of dynamics measurement method to effectively measure the individual language performance in detail. This research is purposed to illuminate the application of using dynamics measurement method in measuring the language performance in proposing a new method of evaluation process of language learning.

LITERATURE REVIEW

Theoretical Framework

a. Dynamics Systems Theory and Language Acquisition

Language acquisition is a complex and unpredictable process with many variables attached to the process and that there is a crucial role of interaction between every variables related to the language learning (De Bot, Lowie, & Verspoor, 2007). In reconsidering the variables involved in a process of language learning, the use of simple pre-test and post-test to determine the succesfulness of the teaching and learning process is not appopriate enough and only capable to give a straight line of the process. As one of the challenges of working on second language acquisition (SLA) is to capture the ongoing emergence of complexity, fluency, and accuracy in learner language (Larsen-Freeman, 2006), most of the language measurement only covers one of the variable in one state. The Dynamics Systems Theory (DST), however, suggest to look at the variables as a cause-and-effect relation between the teaching and learing process with the language acquisition. The systems co-relate the interaction of the variables such as environment, motivation, and physical condition with a complex system as a inter-related relationship, that every change in one variable will affect the whole variables within the systems. The DST become the basic for a framework to measure how one single variable in language learning is affecting, and affected by another variable, an example of the acquisition of a new vocabulary can affect the forming of new phrases and clauses, hence, different strategy in describing an object in spoken, written, and cognitive form. Furthermore, to the best of our knowledge, no studies have compared processing times for translated L1 items, congruent items, and incongruent items in the same study. This is unfortunate because it prohibits us from gaining a better understanding of how the L1 affects the processing of L2 collocations(Wolter & Yamashita, 2017).

b. Language Performance in Dynamics System's Perspective

Language acquisition occurs normally in parallel to the environment supporting the language mastery. Support from the environment and learners' own attribute have a crucial role in how the learners approaches L2 learning and then to perform the language as a way of communication. Language performance including the issues of acculturation of culture and attitude towards the language surely have impacts on linguistic development of the individual learners(Polat & Kim, 2014).

Language performance is varied and dynamic in every individual. Different people have different rate of acquisition either given by their natural traits such the effect of first language (Park, 2013), ancestry of the target language, language intelligence, or high motivation; or environmental support from the surrounding such as the availability of the sources.

As the environment changes, language changes (Baronchelli, Chater, Christiansen, & Pastor-Satorras, 2013). The changes of the languages affect the performance of the language in individual level. Different environment resulted in different result even the performer is the same person and the given topic of the exam is the same. This changes affected by the environment is ignored in conventional test that observe the language ability based on one-time performance only.

METHOD

Research Design

As aforementioned in the research purpose, the research is dealing with application of a dynamics analysis in understanding language performance of the students by employing comparative-quantitative method. The data is gathered in a series of 4 data collections in one semester by using specific, yet similar, task to the students in English department of UMM as the selected subjects. Following the data collection, the analysis is conducted in a series of sub-analyses of four times data collection to show the 'movement' or the dynamics of the language acquisition and use; and to be further analyzed into quantitative description and analysis. In the final stage of the research, the result of the analysis is described in a chart with description for illuminating the movement of the language performance of the participants.

This research involves the participation of four students of third semester from English Department currently undergoing writing class and selected based on the specific criteria: 1. Currently undergoing writing class, 2. Have similar adequate knowledge of English, measured by the evaluation of their first and second semester English skill performance, 3. Willing to participate on the research, supplemented with legal research consent following the BERA guidance and research ethics guide from Dornyei (in Abbott, 2009).

Research Instrument

The instruments used in this research are document analysis taken from language test. The document analysis conducted from the writing product of the participant towards 4 writing test with same topic to avoid the bias of topic preference. The selection of similar topic is following the data collection method of Larsen-Freeman (Larsen-Freeman, 2006) with the purpose to measure the improved language elements over the time period. The document is used in quantitative approach to measure the lexical rarity of the utterances by providing language test' score as the evidence.

Data Collection Procedure

The data collection procedure were employed by conducting a meeting involving the researcher, research assistants, and the participant of the research to discuss the ethical consent, and the conduct of the research. Second, conducting the first test as the first stage of the analysis (1st data collection). Third, conducting 3 times dynamics tests in a series of analysis with the help of research assistants in total of 4 data collections. Fourth, collecting the data in the form of analyzed dynamics data.

The data were analyzed in a series of steps including, first, interpreting the data gathered from data collection. Second, measuring the result of the tests from the participants based on the four time data analysis and presenting the result in a form of chart. Third, drawing the conclusion and the discussion on the implementation of dynamics measurement method.

FINDING AND DISCUSSION

Based on the analysis, it can be presented that dynamics system analysis reveals the different score of the participants over the same topic. As shown in the figure 1, the participants are following a close-approximate pattern between their own performances in every data collection.

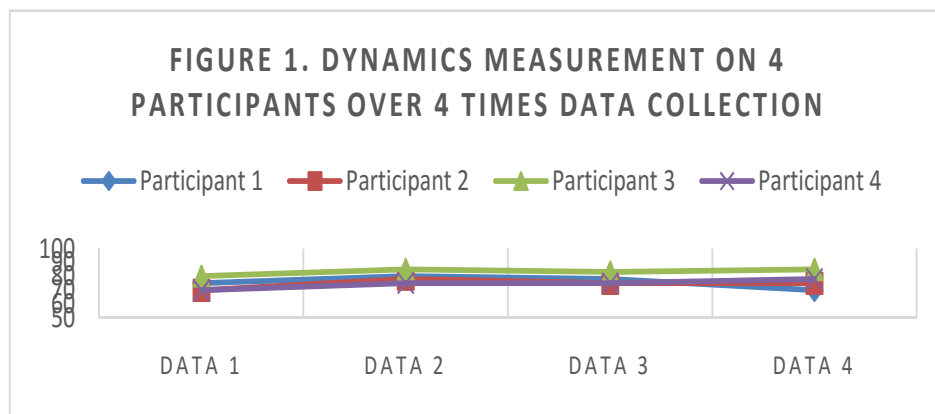


Figure 1. Dynamics Measurement on 4 Participants over 4 times Data Collection

This result showed that there are changes in the performance of each participant in individual level. The changes are following a pattern of performances over the 4 times period that formed a slightly-curved straight line. The changes are normal as performances are directly affected by certain conditions and create dynamics change. The dynamics change is caused by the environment as well as the personal reason of the participants affected their language performance. The changes are shown in the following table:

Table 1. The Participants Score Over 4 Times Data Collection

	Participant 1	Participant 2	Participant 3	Participant 4
Data 1	75	70	80	70
Data 2	80	78	85	75
Data 3	78	75	83	75
Data 4	70	75	85	78

The data can be described as follow:

- Participant 1 undergone changing in the scores over 4 time period with the pattern 75 in the first data collection, 80 in the second data collection, 78 in the third data collection, and 70 in the fourth data collection. The average score of participant 1 is 75,75 and proposed as the real performance score of the participant 1.
- Participant 2 undergone changing in the scores over 4 time period with the pattern 70 in the first data collection, 78 in the second data collection, 75 in the third data collection, and 75 in the fourth data collection. The average score of participant 2 is 74,5 and proposed as the real performance score of the participant 2.
- Participant 3 undergone changing in the scores over 4 time period with the pattern 80 in the first data collection, 85 in the second data collection, 83 in the third data

collection, and 85 in the fourth data collection. The average score of participant 3 is 83,25 and proposed as the real performance score of the participant 3.

- Participant 4 undergone changing in the scores over 4 time period with the pattern 70 in the first data collection, 75 in the second data collection, 75 in the third data collection, and 78 in the fourth data collection. The average score of participant 4 is 74,5 and proposed as the real performance score of the participant 4.

The research showed that performances are dynamically diverse and affected by environmental and personal factors. It is inaccurate to measure language performance by using a one-time test that only measure the performance on the day the test is administered. As the performances of the participants are different, the average score taken by the design of dynamics system analysis on specific time and topic are able to measure the diverse result and giving the closest approximate to the real language ability of the individual.

CONCLUSION

Dynamics system analysis is showing different approach from conventional scoring methods which solely focused on the performance of the participants on the day the test is administered. The conventional test completely ignored the condition of the test participants and scores them without revealing the real ability of the participants. In contrast, dynamics system analysis is analyzing the performance of each participant through a series of analysis to reveal the real ability of the test participants by considering the 'ups and downs' of the language performance affected by the environment. Therefore, administering dynamics system analysis design in measuring language performance is validated to be a better method in language measurement and evaluation.

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