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## Ecological Investigation of Iranian Students' Locus of Control Based on Complex Dynamic Systems Theory

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### Abstract

Locus of Control (LOC) is a psychological construct that deals with people's perception of the extent to which they are in control of what happens to them and it has been proved to play a crucial role in one's success or failure in various aspects of life. Although LOC is by no means a stable construct, the current body of research had a linear one-shot cause-effect perspective towards it. Hence, framed within a Complex Dynamic Systems Theory (CDST), this case study tries to revisit Iranian university students' LOC through the application of Dynamic Ensemble (DE). To this end, five students from Bojnord university who were attending their General English (GE) course participated in this study. The data collection was done through semi-structured interviews, task-motometers, students' journals, and participant classroom observations during seven classroom sessions. The collected data were qualitatively content analyzed by the application of MaxQDA software. Having analyzed the collected data, several macro-systemic, micro-systemic, and contextual factors were identified as being influential on the students' internality or externality of LOC. Considering the fact that many scholars believe internal LOC is the healthier attribute, this study focuses on the factors which can help teachers lead their students to become internalizers.

**Keywords:** Locus of Control (LOC), Ecological investigation, Complex Dynamic System Theory (CDST), Dynamic Ensemble (DE)

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## 1. Introduction

Locus of Control (LOC) is a psychological construct, which refers to peoples' beliefs about the control they have over the situations and experiences affecting their lives (Rotter, 1966). Rotter (1966) introduced a model for LOC with two dimensions namely, internal and external LOC. He asserted internalizers ascribe the reasons for their success or failure to some internal factors such as their own attempts, abilities, activities, and behaviors. In contrast, externalizers think that some external factors like fate, powerful others, and chance or luck, that is out of their control, affect their fate and achievements.

LOC is a multidimensional psychological construct and it has a dynamic nature, which means that it changes over different situations (Ghonsooly & Elahi Shirvan, 2011). This dynamicity underscores the nonlinearity of changes, which means there are almost no predictable cause-effect relations in the systems behavior (Larsen-Freeman, 2016; Waninge et al., 2014). Thus, in order to get a better and deeper understanding of LOC in interaction with its surrounding environment, this study focuses on the contextual and intra/interpersonal factors which can help a student improve their state of internal LOC.

### *Research question*

How can the underlying variables of students' LOC in a course of General English be defined in light of Complex Dynamic System Theory (CDST) through the application of Dynamic Ensemble ?

### *Dynamic ensemble*

Hiver and Al-Hoorie (2016) applied the underlying tenets of CDST in a research study to propose the dynamic ensemble, which is a list of complexity considerations that tries to make CDST easily applicable in the field of applied linguistic research.

## 2. Methodology

The purpose of this study was to delve deep into the procedural, individual and contextual factors; therefore, in order to allow for the intensive concentration and observation in part of the researchers a limit of five Iranian university students who were attending their GE course (two males and three females) was decided. One of the main aims of this study is to provide evidence for the dynamic nature of LOC . Thus, deviant or extreme case sampling strategy (Dornyei, 2007) was employed in order to select our participants from the highest and lowest scoring students on a specific version of the Internal Control Index (Duttweiler, 1984) which was translated into Persian and validated for the Iranian context by Ghonsooly and Elahi (2010).

On the basis of the main purpose and the qualitative nature of this study, different types of data collection including interviews, observation, journals, and task-motometers were applied by the researchers to ensure the data collection is done thoroughly and every environmental aspects of the participants were taken into account.

## 3. Results

The findings of this study revealed the dynamic and multidimensional nature of LOC which means it changes over and over under the influence of different situations and circumstances and in relation with some other factors. This finding is in accordance with what Larsen-Freeman (2016) asserted in her seminal paper about non-linearity and complexity of students' behavior in classroom studies. In fact, analyzing the collected data indicated that during the process of language learning, the students experienced fluctuations in their LOC and these fluctuations occur even during a single class under the influence of different intra/interpersonal or environmental factors which is in line with what Waninge et al. (2014) introduced as the

dynamic nature of psychological constructs. The dynamic nature of students' LOC underscores the nonergodicity of human's behavior (Lowie & Verspoor, 2019). Application of dynamic ensemble revealed the fact that the student's LOC was under the influence of many factors.

At the micro-structural considerations level, learner's beliefs and motivations, their positive and negative attitudes, and the students' learning expectations affected the students' internality and externality of LOC. It was recognized that the motivational factors and students' positive attitudes toward the effectiveness of learning English reinforced students' internal LOC. Learning English seemed to play an important role in helping the students reach their future goals such as traveling abroad or being accepted in higher level of educational degrees. These sorts of motivating factors helped the students try more and be more self-reliant and it helped them believe today's struggles would positively affect their future.

In addition, the students' beliefs about the teacher's responsibility were among the factors which in most cases led them towards being externalizers. The source of this effect was in the teaching expectations that the students had but they received little or no answer to these expectations on the part of their teacher. The students' increased knowledge was another motivating factor which helped the students to rely on themselves and consequently become internalizers. This finding is in accordance with what Peek (2016) highlights about the positive effects of students' knowledge and learning skills on their internal LOC.

At the micro-structural considerations level, cognitive, linguistic, and affective factors influenced the students' LOC differently. It was indicated that the students with rich background knowledge were more internalizers. However, in some occasions the knowledgeable students preferred to be silent to immune themselves from their classmates' laughter and judgements. Furthermore, topical interest in some of the tasks was another reason for making the students internalizer. Also, speaking in front of the others, being

laughed at, and negative judgment by teachers as well as classmates were among the affective factors making students' more externalizers.

We also found that curriculum design and course assessment were sometimes planned in a way that hurt students' full concentration on the process of learning (e.g., being tired due to participation in hard practical classes just before attending their English language classes) and led them towards being externalizers.

