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Error Competence and Structural Competence in EFL Context

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Abstract

This investigation was conducted with the intention of possibly recognizing error competence as a new variable related to advanced learners' structural weakness. Error competence as one of the psychological levels of error orientation is the active knowledge to recover from errors immediately and reduce the error consequences. And error orientation shows how learners cope with and react to their own mistakes and errors. The purpose of the study has been to determine the existence of any meaningful relationship between the error competence and the structural competence of the EFL students. The target population of the research included the English students at Islamic Azad University, Roudehen Branch. A sample of 200 EFL senior students was selected based on the multistage random sampling. They were administered the two instruments of the research: The Structural Error Competence Questionnaire (SECQ) and the structure section of a standard TOEFL test. The research has been conducted based on a descriptive correlational study in Iran and resulted in the existence of significant correlation between the two variables. The correlation coefficient amounted to 0.228 which was significant and positive at the 0.01 level. In conclusion, this investigation has paved the way to support the idea of having error competence as a strategy which needs training and management.

Keywords: error competence, error orientation, structural competence

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Introduction

Unfortunately, now teachers are facing students who suffer from some structural ignorance. And even those who gained fluency in spoken English are somehow ignorant of their own mistakes. Consequently, focus on formal aspect of language learning has become a concern for methodologists and practitioners once again, and error correction and providing proper feedback have also been considered to be part of such a focus (Crookes & Chaudron, 2001, p. 40). On the importance of this problem, Swan (2002) states that this ignorance of grammar has led to a generation of teachers many of whom are ignorant of the structure of the language they teach. And accordingly, some advanced learners that are expected to be linguistically competent but commit serious errors in their production. Of course, this symptom has different degrees in different students. Much of this may belong to individual learner differences which most scholars and practitioners such as Hadley (2003) have recognized its significant impact on both the rate and the degree of language learning. Although many factors may affect the structural ignorance from which students suffer in their production and comprehension, learners' error competence as a new variable seems to have the potential to be one of the effective individual difference parameters. In the present study, the researcher aims to investigate the possible meaningful relationship between the EFL learners' error competence as a part of their error orientation and their structural competence. This has been done in order to propose some possible ways to enhance structural healing for those weaknesses based on individual differences.

In order to define error orientation, Rybowiak, Garst, Frese, & Batinic (1999) stresses that it shows how learners cope with and react to their own mistakes and errors. It can be seen as having two main appraisals. One is referred to how negatively learners perceive their own errors and mistakes and to what extent they can anticipate the occurrence of them. And the second appraisal is related to how learners cope with and challenge their own errors and mistakes (Rybowiak et al., 1999, p. 529).

Error orientation as a unique individual difference variable can also be defined in a broad way in the domain of error treatment. It is for decades that error treatment is one of the main concerns of teachers to help learners overcome their weaknesses. Error treatment can be depicted and defined as having three layers in this broad view. It concerns first, how and when teachers should treat learners' errors and which errors should be treated. Second, what the learners' and teachers' attitudes are toward correction, and third, how learners react to their own mistakes and corrected errors. The first phase has been the main concern of researchers in the past couple of decades and the second phase has been partially attended to. However, the third phase of error treatment has not been investigated directly which concerns error orientation. Based on this new definition, error orientation is seen as an inseparable and neglected part of error treatment which is open to further research.

The notion of error orientation seems closely related to Krashen's monitor hypothesis. Krashen (1981) believed that monitoring is the consequence of explicit and intentional learning. He believed that monitoring is a tool for watchdogging one's output for the purpose of editing and making alterations or corrections (Brown,

2007). And "this monitor operates only when there is sufficient time, the focus is on form and the language user knows the rule being applied" (Hadley, 2003, p. 51).

Nonetheless, Krashen (1981) has also claimed that this monitoring system which is based on the knowledge of consciously learned language is totally distinct from unconsciously acquired language and there is no interaction between them. He also stressed that only acquisition can be deployed in spontaneous language use, and not learning (Doughty & Long, 2003, p. 258). In other words, Krashen's monitor theory proscribes traditional instructional devices such as grammar teaching, Linguistic grading and error correction. There is no need to say that this denotes Krashen's position against systematic teaching and the use of the grammatically structured syllabuses (Nunan, 2001, p. 56).

However, error orientation is highly different from Krashen's monitoring system. This monitor is a watchdogging system to trace the mistakes which occur in ones output; however, error orientation is the reaction of language learners to their own mistakes and errors. In other words, monitoring system is the prerequisite to error orientation, but what follows the monitoring is error orientation to tackle these mistakes and errors. In spite of this difference, practicality of error orientation in second and foreign language learning can be a good support for the positive effect of the monitoring system as the outcome of systematic instruction.

Based on the studies conducted by Rybowiak et al. (1999), eight psychological constructs have been identified and validated for error orientation through a complex factor analysis. These psychological levels of error orientation are error competence, error learning, error risk-taking, error strain, error anticipation, error covering, error communication and error thinking.

Error competence as the first psychological level of error orientation is the independent variable of the study. And it is defined as the active knowledge to recover from errors immediately and reduce the error consequences. In other words, it is the knowledge and capability to deal with errors when they happen, and it is directed at short term goals (Rybowiak et al., 1999). Bandura (1986) believes that error competence is significantly correlated with self-efficacy and self-esteem. Moreover, it is also positively related to action orientation after failure, need for achievement and initiation (Kuhl, 1983).

The notion of error competence is different from error learning. The latter one denotes learning from errors for the future which optimizes the learning in the long term while the first one is the knowledge and capability to recover from errors in the short term. Consequently, a positive meaningful correlation between error learning and plan orientation can be estimated (Frese, Stewart, & Hannover, 1987). Plan orientation is the tendency to plan actions for a long period and in detail. Nevertheless, it is also interesting to know that error competence and error learning, apart from their difference, are highly correlated (McClelland, 1987).

On the other hand, grammatical competence is defined as that part of the communicative competence which encompasses "knowledge of lexical items and of rules of morphology, syntax, sentence-grammar semantics and phonology" (Canale and Swain, 1980, p. 29). As the dependent variable of the study; however, by structural competence that part of the grammatical competence which is called syntax is intended. Syntax is traditionally defined as a component of grammar rules which determines how words combine to form sentences.

On the importance of teaching syntax and grammar, Savignon (2001) asserts that involvement in communicative events also requires attention to form. For "development of communicative ability, research findings overwhelmingly support the integration of form-focused exercises with meaning-focused experience. Grammar is important, and learners seem to focus best on grammar when it relates to their communicative needs and experiences" (p. 25). Fotos (2001) also stresses that pure communicative approach to language teaching is not useful especially in EFL contexts "because adequate access to communicative use of English is usually not available, and students need to develop accurate English grammar, vocabulary, and translation skills to pass high school and university entrance examinations" (p. 268).

Regarding effective variables on grammar learning, Celce-Murcia (1985) refers to two major parameters: learner variables and instructional/ situational variables. Among these variables, prompting a language awareness dimension to grammar teaching as an instructional variable seems somehow related to Krashen's monitoring system and error orientation (Richards, 2002). This awareness results in more fluency in communicative activities and more accuracy through removing fossilized errors which might be difficult to be eradicated later. This awareness-raising in the process of language acquisition is based on recognizing three processes in the acquisition of implicit knowledge:

1. Noticing: when the learner becomes conscious of the presence of a linguistic feature in the input, whereas previously she had ignored it.
2. Comparing: when the learner compares the linguistic feature noticed in the input with her own mental grammar, registering to what extent there is a gap between the input and her/his grammar.

3. Integrating: when the learner integrates a representation of the new linguistic feature into her mental grammar. (Ellis, 2002, p. 171)

Larsen-Freeman (2001) also adopts the same stance that in the communicative approach, grammatical points under instruction should be addressed in order to raise learners' awareness and attention (pp. 256-58). She refers to some techniques for awareness-rising:

1. Simply bring issues to learners' attention, for example recast students' errors.
2. Enhance the input by simply highlighting the particular structure in the text.
3. Lead students to induce grammatical generalizations from the data they have been given.
4. Give students some information about the structure without giving them the full picture.
5. Push learners to notice properties of language during activities.
6. Help learners have output production.

This awareness-rising in grammar teaching is not a one way system in which merely the teacher is the initiator who transmits information. But it's a two way system in which learner needs play an important role. When a learner commits an error, it is a clue for the teacher that there is a gap between the language and the learner's interlanguage. And this really calls for some techniques for awareness-rising.

Moreover, moving from behaviorism to cognitivism and constructivism changed the outlook on errors in the process of language learning. This great shift turned us to believe in the inevitability of occurrence of errors and mistakes in the

process of learning and acquisition. Thus we should accept that there is a need for error monitoring and having some strategies to face errors both as a teacher and as a learner:

1. as a teacher to properly correct learners' errors,
2. as a learner to trace the errors and to use the proper error strategies which is in the domain of error monitoring and error orientation.

In this study, an attempt has been made to determine the possible meaningful relationship between error competence and structural competence in the EFL context. Therefore, the research question of this study is worded as: Is there any significant relationship between learners' error competence and their structural competence in EFL context? And accordingly the research null hypothesis turns out to be: There is no significant relationship between learners' error competence and their structural competence in EFL context.

Methodology

Participants

The target population of this research included a subset of the student population at Islamic Azad University, Roudehen Branch who were female and doing BA in the field of English language. The samples were selected based on a multistage random sampling. Owing to the research need which required the participants to be female and senior students, twenty two classes at Islamic Azad University, Roudehen Branch were specified as having the required conditions. And then out of these classes, five classes were selected randomly. To be precise, it was decided to have 200 Iranian students as participants. After the administration of the

two instruments; however, 174 students answered the instruments carefully and effectively.

Instrument

There were two instruments implemented in this research so as to obtain as valid data as possible. First, The Structural Error Competence Questionnaire (SECQ) was intended as a part of the Structural Error Orientation Questionnaire (SEOQ). The SEOQ was designed based on the eight error orientation constructs: error competence, error learning, error risk-taking, error strain, error anticipation, error covering, error communication and error thinking. Furthermore, this questionnaire was designed based on The Error Orientation Questionnaire (EOQ) as a standard Questionnaire which was proposed by Rybowiak and his colleagues (1999).

The questionnaire was designed and revised with the help of a group of psychologists and linguists, and piloted to a homogeneous group of learners to enable the researcher to revise the items more practically. In the pilot study, fifty homogeneous students were asked to participate, but 39 of them answered the questionnaires in an acceptable way, and merely 31 answered the three sections of the TOEFL test completely. Undoubtedly, the content validity, the criterion related validity and the construct validity along with the reliability of the questionnaire were taken into consideration in order to have a valid and reliable instrument. Concerning concurrent validity of the SEOQ, the amount of the correlation coefficient between the total scores of SEOQ and EOQ amounted to 0.812 which was highly significant at the 0.01 level. This high correlation between the two questionnaires; therefore, assured fairly high concurrent validity as a form of criterion related validity for SEOQ. Moreover, SECQ was also found concurrently valid based on the correlation

coefficient of 0.623 between the error competence sections of SEOQ and EOQ. In the next step, in order to estimate the test-retest reliability of SEOQ, the results of the two administrations of the SEOQ were correlated. The correlation coefficient was 0.680 and significant at the 0.01 level. Finally, in order to estimate the internal reliability of the SEOQ, the Cronbach's alpha approach was implemented to the results of the pilot study. The obtained alpha was nearly high and equal to 0.7036.

Second instrument was a standard TOEFL test out of which the structure section was extracted to be used as an instrument to evaluate the EFL senior English students' structural competence. In the process of analyzing the items of the structure section, the item facility (IF) and the item discrimination (ID) indices of the 40 structure items were calculated. The validity and reliability of the TOEFL test had been also assessed through administering it to a pilot group. In order to calculate the reliability of the structure section of the TOEFL test, it was decided to use KR-21 method. The internal reliability of the whole TOEFL test was higher than the reliability of the structure section. This reliability was to the tune of 0.92 as compared to 0.74 of the structure section. A factor analysis was also run in order to investigate the possible underlying constructs of the TOEFL test. The results obtained from the whole TOEFL test were analyzed based on the Principal Component Analysis as a popular factor extraction method. The results showed that the TOEFL test enjoyed high construct validity.

Table 1
Total Variance Explanation of TOEFL

Component	Initial Eigenvalues			Extraction Sum of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.319	77.294	77.294	2.319	77.294	77.294
2	0.383	12.753	90.047			
3	0.299	9.953	100.000			

Extraction Method: Principal Component Analysis

Table 2
Component Matrix Based on Rotation Varimax

	Component
	1
Structure section	0.897
Listening section	0.870
Reading section	0.870

Extraction Method: Principal Component Analysis

It is clear from Table 1 that there is just one factor extracted in the column of Extraction Sums of Square Loadings; therefore, the three sections of the TOEFL test merely tap on one underlying construct. In Table 2, the Rotation Varimax method was employed in order to specify the loadings of the three sections of the TOEFL test on the only extracted construct, and clearly they loaded highly on a single variable. Since the TOEFL test was developed to assess language proficiency as a single trait, it could be concluded that the test proved to be valid.

Design and Procedure

This investigation benefits from descriptive correlational design. Actually, the design of study enabled the researcher to find the degree of correlation between the

learners' error competence as the independent variable and the learners' structural competence as the dependent one in an EFL context.

The procedure of the study can be depicted in three steps briefly. First, the two valid and reliable instruments of the study were organized. Second, a reasonable number of Iranian senior English students were selected based on a multistage random sampling. Generally two hundred participants were invited to answer the two research instruments in order to gather the required valid data. Finally, in the statistical phase, the scores from the two instruments were correlated and out of this statistical procedure, the researcher got enabled to generalize, draw inferences and decide on the proposed hypothesis.

Results

In order to answer the research question: "Is there any significant relationship between learners' error competence and their structural competence in EFL context?" the researcher correlated the scores of the SECQ with the scores of the structure section of the TOEFL test. The result is presented in the following table.

Table 3
Correlation between the SECQ and the Structure Section of the TOEFL Test

Error competence	**Structural competence**
Pearson correlation	0.228
Significance (2-tailed)	0.002
Number	174
Correlation is significant at the 0.01 level (2-tailed).	

There are also other issues which are required to be discussed before moving to the interpretation section. Howell (1989) stresses on some important considerations in evaluating and interpreting the results of correlational analysis. First, the Pearson product-moment correlation merely deals with the linear

correlation between variables; therefore, it is not recommended for calculating the correlation between nonlinear and curvilinear data. Due to this fact, when the correlation is nearly zero, it cannot be interpreted that there is no relationship between the variables, but it rather means that there is no linear relationship between those variables. The second issue is the fact that the existence of a significant correlation between variables cannot be interpreted in the way that one causes the other one.

In order to crystallize the idea of statistical significance of a correlation coefficient and its relation to null hypothesis, Best & Kahn (2003) indicates that statistical significance is not a measure of the magnitude of a variable relationship, but it is merely an estimation of the probable influence of sampling error (p. 408). In other words, an observed correlation may result from chance or sampling error which really calls for a test to determine the statistical significance of that correlation. One simple and practical test of significance is determined by comparing the r-observed with the critical value of r that can be read directly from tables which are usually available in statistical books. This can be done much more easily by using statistical computer programs. For instance, SPSS, which is used in this research, has an option for calculating correlation coefficients which flags automatically the significant amounts at 0.01 or 0.05 levels of significance in the result table. In fact, the standard significance levels refer to the risk of error we are willing to take in drawing conclusions from our data.

Moreover, the two-tailed test of significance indicates that the researcher does not seek a direction of difference or relationship between the variables in the

hypotheses of the study, but what is really concerned is the existence of some meaningful difference or relationship between the variables (Best & Kahn, 2003).

Based on the correlational analysis which was conducted between the two variables, error competence and structural competence, the r-observed was 0.228. The r-observed refers to the observed correlation coefficient between the two variables. This amount was positive and significant at the 0.01 level; therefore, the null hypothesis which stressed the nonexistence of any significant relationship between error competence and structural competence was rejected. The correlation between the two variables has been plotted in the following Figure.

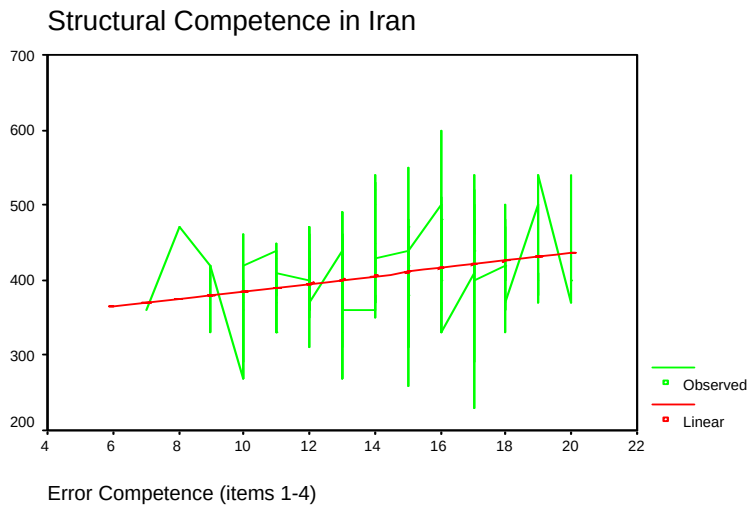

Figure 1. Scatter plot of the relationship between error competence and structural competence

Discussion and Conclusions

The result of the correlational analysis between the two variables showed a positive and significant amount at the 0.01 level which helped the researcher to

reject the null hypothesis. Therefore, it was concluded that a significant correlation between error competence and structural competence exists in this context.

This section focuses on some possible pedagogical implications of the study. However, these remarks are not meant to be viewed as thorough conclusions but rather suggestions which are based on the researcher's understanding and the findings of this investigation.

First, since English language teachers occasionally reprimand their advanced learners' for their structural weakness, the significance of the correlation between error competence and structural competence can lend itself partially to deal with this problem. In other words, in the light of this investigation, error competence was found related to form-focused instruction. Thus it should be given due consideration in teaching and learning language structures. And this really calls for further research to find how to practically implement this variable in order to boost structure learning.

In order to employ error competence in form-focused instruction, it should be considered as a strategy which needs training and management. Thus error competence strategy training can be recommended as a practical approach in Task-Based Form-Focused Instruction (TBFFI). It can be implemented in syllabus designing and also as a class technique by teachers to reinforce accuracy in language learning. Oxford (1990) supports the idea of strategy training and defines strategies as "behaviors or actions which learners use to make language learning more successful, self-directed and enjoyable" (p. 235). In other words, students' active contribution toward promoting their own learning success is truly echoed by implementing learning strategies (Dornyei & Skehan, 2003, p. 607).

In order to improve learners' error competence as a strategy, different techniques can be utilized which can be a good source for experimental research. For instance, when teachers are supposed to check students' grammar drills and activities or homework, they can ask students to underline the answers which they are not sure about and give them a second thought and also write one more possible answer for each. This technique can be also implemented in the direction of the grammar activities by syllabus designers. Another measure and technique which can be taken by syllabus designers is arranging the questions of the grammar section in two identical columns in order to allow learners to write their answers in the first column and write the corrected answers in the second. This allows the learners to see better the possible gap between their answers and real ones which can improve the active knowledge to recover from errors immediately and reduce the error consequences. Figure 2 presents a sample grammar activity following this technique.

-Complete the conversations in the left column with ***am, is*** and ***are***. After teacher's correction, write the correct answers in the right column and then compare them.

1. A: ……. Ms. Ahmadi from Iran?	A: ……. Ms. Ahmadi from Iran?
B: Yes, she ……**.**	B: Yes, she ……**.**
2. A: ……. you and Ali from England?	A: ……. you and Ali from England?
B: No, we ……**.**	B: No, we ……**.**

Figure 2. A sample grammar activity

Second, more positive error culture environment can be developed in classes by teachers who have benefited from error strategy training programs. The lack of this positive error culture environment may lead to concealing errors,

avoiding free communication or losing learners' cooperation in learning tasks. On the other hand, this positive error culture environment can positively influence learner's risk-taking and self-confidence. It can also promise more negotiation, productivity and outperforming competence in language classes which is desirable for communicative atmospheres.

Finally, Structural Error Competence Questionnaire (SECQ) as a section of Structural Error Orientation Questionnaire (SEOQ), which was designed as a valid and reliable instrument for this study, turned to be a standard questionnaire which could be implemented in future studies.

Moreover, the researcher found it useful to reveal some of the limitations of the study to slightly depict what challenges he experienced in conducting this research. First, only girl students were asked to participate in this study due to their very high ratio as compared to boy students in the field of English language learning. Second limitation which was imposed by the researcher to subjects was inviting merely senior English students to participate since students with reasonable English backgrounds were required. Actually, the researcher favored not to use advanced learners instead of seniors because this differentiation might have negatively affected the correlation between error competence and structural competence as part of communicative competence and language proficiency. Third, the age of the participants was also limited to the range of 20 to 25. This limitation of age might have been fruitful to the research due to the fact that age can serve as an intervening variable.

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