INTRINSIC AND EXTRINSIC MOTIVATION FOR ENGLISH LEARNING SCALE (IEM-ELS): A PSYCHOLINGUISTICS STUDY OF RELIABILITY AND VALIDITY

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ABSTRACT

Educational contexts without considering students' levels of their motivation cannot be thought of. Motivation is one of the best predictors of academic achievement, in some studies, it is better predictor than general intelligence of students. Two types of motivation – the extrinsic and the intrinsic one should be distinguished carefully. Intrinsic motivation is related to emotional aspect of learning. If students learn because it gives them pleasure and if they enjoy it, it can be said that these group of students have high levels of intrinsic motivation. In contrast, students who learn especially to gain some reward, acknowledgement or recognition are considered to be extrinsically motivated. Lots of scales which measure intrinsic and extrinsic motivation are general assessment tools i.e. they are not domain-specific tools. Because of that, the main aim of our study is to examine reliability and validity of Intrinsic and extrinsic motivation for English learning scale. This scale was made in order to measure levels of intrinsic and extrinsic motivation for learning English language. Hence, we anticipate its usefulness in English language educational context. Cronbach's alpha coefficients were calculated and factor analysis was conducted. These statistical and psychometric techniques yielded the following results: the reliability of both subscales was good and the IEM-ELS had two-dimensional latent structure.

 Keywords: *Intrinsic motivation, extrinsic motivation, reliability, validity.*

İNGİLİZCE ÖĞRENİMİ ÖLÇEĞİNDE İÇE VE DIŞA YÖNELİK MOTİVASYON: GÜVENİRLİĞİ VE GEÇERLİLİĞİ ÜZERİNE BİR RUHDİLBİLİM ÇALIŞMASI

ÖZ

Öğrencilerin motivasyon düzeyleri hesaplanmadan eğitimle ilgili bağlamsal konulardan bahsetmek mümkün değildir. Motivasyon, akademik başarının en büyük göstergesi olarak gösterilmektedir, öyle ki bazı çalışmalara göre öğrencinin genel zekasını ölçü alan belirleyicilerden daha iyi bir gösterge olarak dahi düşünülmektedir. İki tür olan içe ve dışa yönelik motivasyon birbirinden dikkatlice ayırt edilmelidir. İçe yönelik

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motivasyon öğrenmenin duyuşsal yönüyle ilgilidir. Öğrenciler öğrenmekten zevk aldıkları ve bu onlara haz verdiği için öğreniyorlarsa, bu tür öğrencilere yüksek düzeyde içe yönelik motivasyonlu öğrenciler denilebilir. Bunun aksine; bazı ödüller, kabül veya tanınma arayışı dışa yönelik motivasyon sağlayıcı unsurlar olarak nitelenmektedir. İçe yönelik ve dışa yönelik motivasyonu ölçen birçok araçlar alana özel olmayıp genel ölçme araçlarıdır. Bu yüzden, araştırmanın ana amacı, kısaltması IEM-ELS olan ve İngilizce Öğrenme ölçeği diye adlandırılan içe yönelik ve dışa yönelik motivasyonların geçerliliği ve güvenirliğini incelemektir. Bundan dolayı, İngilizce dili eğitimi bağlamında bahse konu ölçeğin faydası ve etkinliği öngörülmektedir. Cronbach alfa katsayısı hesaplanmış olup, araştırmada faktör analizleri uygulanmıştır. Bu istatiksel ve psikometrik teknikler aşağıdaki sonuçları vermiştir: Her iki alt ölçeğin güvenirliliği pozitif çıkmıştır ve IEM-ELS'in çift boyutlu gizli yapıya sahip olduğu sonucuna varılmıştır.

Anahtar Sözcükler*: İçe yönelik motivasyon, dışa yönelik motivasyon, güvenirlik, geçerlilik.*

1.Introduction

Educational process is influenced by various factors. Some of them are the following: teaching environment, teachers' personality traits and intelligence, students' intelligence and students' levels of motivation. In order to learn course materials, students should be motivated. Some students have high levels of intelligence, however, they do not want to participate in group discussions during classes. In addition, they get low grades. This is because they are not motivated for learning or course materials and they are not encouraging or stimulating enough. For these reasons and lots of other reasons, we have to deal with a phenomenon such as motivation.

Motivation is defined as someone's will and intention to do a particular task or an activity. This includes people's needs, intentions, drives, aspirations, commitment to their tasks and activities, drives, achieving aims and goals which were planned, etc. (e.g. Harackiewicz & Sansone, 2000; Locke & Latham, 1990; Deci, 1975; Atkinskon & Birch, 1970; Cofer & Appley, 1967; McClelland, 1953). Motivation helps us to start and maintain a particular activity or a set of our actions, intentions and behavioral patterns (Dornyei, 1998). Thus, we can easily come to the notion that motivation is a theoretical construct closely related to self-efficacy. Self-efficacy is one's belief on his/her capability or ability to succeed while doing some job or participating in an activity (Bandura, 1996).

There are two types (or dimensions) of motivation – intrinsic and extrinsic. The first one includes enjoyment while working on some task,

and the second one includes seeking for rewards and public recognition (e.g. Deci, Koestner, & Ryan, 2001; Deci & Ryan, 1980, 1985). Someone who is intrinsically motivated learns for the sake of learning itself. In contrast, someone who is extrinsically motivated learns in order to get better grades as well as to be rewarded and recognized as a student who is very successful. Therefore, the indicators of intrinsic motivation are: getting enjoyment from a particular activity, doing something without thinking on recognition and showing sincere interest in a particular field (e.g. Kruglanski, 1978; Ryan & Deci, 2000). On the other hand, there are ''signs'' of extrinsic motivation: doing something to be rewarded, having interest only in outcomes (e.g. high school grade, benefits, ...), and the pursuit of public praise (s/he wants others to see that s/he is the best student, the most prominent learner, the most able person, etc.).

Based on the foregoing considerations, it can be concluded that there should be a strong negative correlation between intrinsic and extrinsic motivation. However, this common-sense conclusion should be taken with caution. In fact, there are students who are motivated both intrinsically and extrinscially and their levels of these types of motivation are almost equal. On the other hand, there are those students who are intrinsically motivated for some school/academic subjects and at the same time they are extrinsically motivated for other school/academic subjects or topics. As can be noticed, the relationship between these two hypothetical (theoretical) constructs are very complex. Therefore, we should examine them with two different scales or subscales. After that, correlation can be calculated between them in order to make valid conclusions.

There are several psychological and educational instruments which serve for measuring motivation. One of them is the Motivational Orientation Inventory (Noels, Pelletier, Clement, & Vallerand, 2000). It is comprised of the seven subscales: amotivation (the lack of motivation), intrinsic motivation – accomplishment, intrinsic motivation – knowledge, intrinsic motivation – stimulation, external regulation, identified regulation and introjected regulation. The second, third and fourth subscale measure intrinsic motivation while the last three subscales measure extrinsic motivation. Similar scale (the Situational motivation scale - SIMS, Deci & Ryan, 1991) is created to measure four components of motivation: intrinsic motivation, amotivation, identified regulation and external regulation. That is, it includes one subscale for intrinsic motivation, a subscale of amotivation and two subscales related to extrinsic motivation. The third widely used instrument is the Academic motivation scale (Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1992), which measures similar components of motivation but in the academic context. The three mentioned scales (instruments) are made according to the expectations and explanations based on the Self-determination theory (SDT, Ryan & Deci, 2000b). This theory underlines

the relationship between intrinsic orientation (or motivation) and self-determination behavior.

Amotivation can also be assessed with subscales of extrinsic and intrinsic motivation because extremely low levels of these types of motivation indicate students' amotivation. Due to this consideration, it was decided to create the scale in a manner that it consists of two subscales -an extrinsic and an intrinsic one. The content of our scale is derived from the theoretical framework of motivation, taking into account its two types (i.e. extrinsic and intrinsic motivation).

2.Research questions

Our main purpose of this study is to determine factor structure of Intrinsic and extrinsic motivation for English learning scale (IEM-ELS). Specific research questions are:

1)Does IEM-ELS have two-factor latent structure (Intrinsic motivation factor and Extrinsic motivation factor)?

2)Does IEM-ELS have acceptable reliability (precisely, is it consistent internally?) ?

3.Hypotheses

Based on our research questions, four hypotheses have been proposed:

1)Considering all items of Intrinsic and extrinsic motivation for English learning scale, two factor solution will be extracted.

2)Internal consistency (reliability) of the IEM-ELS will be above the value .700 (i.e. is acceptable).

3)Internal consistency of potential Intrinsic motivation subscale will also be above the value .700.

4)Reliability of potential Extrinsic motivation subscale is acceptable (as in the previous cases, above .700).

4.Method

4.1.Participants

A total of 300 respondents participated in our research. The mean age of participants in this convenient sample was M = 18.10 (age ranged from 17 to 23 years), with standard deviation of SD = 1.87. The high school students were chosen from the fourth/last grade of an International college whose English levels were quite good.

Our sample can also be described by some sociodemographic variables: gender, nationality and the information whether they are at high school or at university. Gender distribution of our sample is displayed below, in Figure 1.

Figure 1. Sample distribution by gender

As can be seen (Figure 1), there were more women (n = 192, or 64% of the total sample) than men (n = 108, or 36% of the total number of subjects).

In the next figure (Figure 2) the frequencies of participants are shown referring to their nationality.

Figure 2. Sample distribution by nationality of respondents

Looking at Figure 2, it can be noticed that most of our participants were Bosnians (n = 138, or 46% of the total sample). There is a bit smaller number of Turkish people (n = 120, i.e. 40% of all participants) and there are 42 students (14%) who belong to other nations (Croatian, Serbian, Montenegrian, Indian...). The next graph (see Figure 3) displays the number of participants who attend to the last class of an international high school and a university.

Figure 3. Frequencies of participants depending whether they attend to high school or university

In Figure 3, it can be seen that 160 respondents attend to the fourth grade of high school at an International College whose mastery level of English is quite similar to those of university students (which is 53.33% of the total sample) and 140 participants are at an International university (that is, 46.67% of all subjects).

4.2.Instruments

4.2.1.Questionnare of sociodemographic variables. We made a questionnaire which consisted of the following questions (issues): nationality, gender, age and attendance of high school or university. These data were used for describing our sample.

4.2.2.Intrinsic and extrinsic motivation for English learning scale (IEM-ELS, Aydoğan & Repišti, 2014). 14 typical items were chosen for assessing extrinsic and intrinsic motivation in English learning. It has been done by referring to the previous research in this field and by theoretical framework of motivational processes in educational context. Items are short, accurate and defined in a manner that they could be easily understood by participants. Items which measure intrinsic motivation are related to enjoyment in learning and speaking English and to sincere interest in English. Items for extrinsic motivation cover these issues: We learn because others want us to do so (e.g. parents and teachers) and we learn in order to get award and recognition.

4.2.3.Procedure

The data was collected via Internet (online) softwares for survey studies. It took participants approximately five minutes to complete the scales. After that, they were automatically entered into MS Excel and the database was formed. The answers of respondents were coded and in order to conduct statistical analyses, they were transferred to SPSS for Win 17.0.

5.Results

Before the factor analysis (more precisely, the principal component analysis) was conducted, Kaiser-Meyer-Olkin measure of sample

adequacy was calculated and the significance of Bartlett's test of sphericity, too. The first measure was high enough (KMO = .889) and the second was statistically significant ($\chi2(91)$ = 2051.000, p < .001). Therefore, the prerequisites were met for factor analysis. Also, our sample-to-item ratio was more than 21, which is more than sufficient for conducting factor analysis.

The result of factor extraction was two-factor solution as we proposed in our first hypothesis. This solution is obtained regarding to Kaiser-Guttman's criterion (eigenvalues are over 1.00). We tried to confirm this result by looking at Cattell's scree plot (Figure 4).

As can be seen below, after the first two extracted components (factors), there is a significant decrease in explained variance by other factors. Hence, this finding suggests that we can accept our two-factor solution (two dimensional latent structure of IEM-ELS). That is, we can accept our first hypothesis.

Figure 4. Cattell's scree plot

These two factors explain 58.918% of variance of input variables or items (Table 1). In order to obtain interpretable results, our factors were rotated into Promax position (where we allow that our dimensions intercorrelate). The eigenvalues and percents of explained variance are displayed in Table 1.

Table 1. Explained variance and eigenvalues before and after Promax rotation

Factor	Before rotation			After rotation
	Eigenvalue	Explained variance (%)	Cumulative variance (%)	Eigenvalue
First	5.772	41.227	41.227	5.767
Second	2.477	17.691	58.918	2.509

As expected, the eigenvalue of the first factor is smaller after rotation than it was before. Also, the eigenvalue of the second factor increased after rotation.

The main part of our analysis is pattern matrix is showed in the form of Table 2.

Table 2. Pattern matrix for two-factor solution of IEM-ELS

Items	Intrinsic motivation (F1)	Extrinsic motivation (F2)
3. I dedicate lots of time to learn English because I am interested in it.	.819	.077
4. Generally speaking, I like English language.	.791	.088
13. I learn English because teachers want me to do so.	-.788	-.172

7. English learning is fun for me.   .777   .101
5. I do not learn English only to achieve good grades but also to get personal satisfaction in it.   .775   -.094
14. I learn English to fulfill parents' expectations.   -.765   .029
2. I write in English because I like it.   .734   -.060
6. I receive personal satisfaction in learning English. .730   .124
12. I learn English to achieve specific grade.   -.719   .231
1. I speak English because I enjoy it.   .677   -.186
9. I learn English to gain prestige.   -.057   .879
11. I learn English because it will increase my social acceptance.   .033   .796
8. I learn English to widen my environment.   -.022   .735
10. I learn English to reach upper level.   .028   .612

As can be noticed, 10 items are highly saturated by the first factor which we called Intrinsic motivation. The numbers of these items are: 3, 4, 13, 7, 5, 14, 2, 6, 12, and 1. Looking at the content of mentioned items, intrinsically motivated participants like English and they are: interested in learning it; according to their opinion, English is very fun; they get satisfaction from it, and they do not learn only to achieve good grades or to fulfill parents' expectations. Contrary to them, extrinsically motivated respondents learn English to: gain prestige; increase their social acceptance; widen their environment or to reach upper level. Therefore, last listed four items (9, 11, 8, & 10) correspond to the second factor, labeled as Extrinsic motivation. It must be noticed that some items that will measure extrinsic motivation (12, 13, & 14) are saturated by Intrinsic motivation factor. But, this finding is understandable because their factor loadings are negative (i.e. someone who scores high on them has low intrinsic motivation and vice versa).

The importance of intrinsic motivation in the sample of high school and university students can also be discussed. It was seen that the first factor (Intrinsic motivation) explains much more variance than the second factor (Extrinsic motivation). Hence, it can be concluded that intrinsic motivation is usual behavioural pattern during educational process of these students. However, their answers in favor of intrinsic motivation can be caused by their tendency to give social-desirable responses. In fact, they represent and introduce themselves as much conscientious and interested in learning than they really are. Therefore, we always need to collect their data on Extrinsic motivation subscale and (in spite of its limited range) get the correct picture of what they are and what kind of motivation they predominantly have.

To test the remaining hypotheses, Cronbach's alpha coefficient of internal consistency for the whole scale and for the two subscales were calculated. For this purpose, some variables were coded reversely. These

coefficients will indicate how reliable our scale is and its subscales are. The results are shown in Table 3.

Table 3. Cronbach's alpha coefficients

Scale/subscales	Cronbach's alpha	Number of items
IEM-ELS (overall)	.802	14
Intrinsic motivation	.917	10
Extrinsic motivation	.759	4

In Table 3, it can be seen that Intrinsic and extrinsic motivation for English learning scale has good internal consistency (α = .802, n = 14). Furthermore, Intrinsic motivation subscale has excellent reliability (α = .917, n = 10) and reliability of Extrinsic motivation subscale is acceptable (α = .759, n = 4). The second subscale consisted of only four items, and, despite this, it has adequate reliability. Hence, our second, third and fourth hypothesis have been confirmed.

6.Discussion

As mentioned before, our findings were in accordance with our expectations. Additionally, the indicators of intrinsic motivation (personal satisfaction, a feeling of enjoyment while learning English language, a positive attitude towards English language, as well as dedication and commitment to learning such a language) seemed to be totally covered by the Intrinsic motivation subscale. Therefore, the content of this subscale was in line with the indicators of intrinsic motivation proposed by Deci (1975), Deci and Ryan (1980, 1985), and Ryan and Deci (2000a).

The Extrinsic motivation subscale covered the following topics: reaching upper level, widening one's environment, gaining prestige, and increasing social acceptance. These factors are related to public/social reward as well as to external regulation. Hence, they reflect extrinsic orientation or motivation. These findings are in accordance with the list of extrinsic motivation indicators provided by Deci, Koestner, and Ryan (2001), Ryan and Deci (2000a), Noels et al. (2000), and Vallerand et al. (1992).

In addition, the whole scale is very reliable and its two subscales are reliable as well. In this context (i.e. by considering Cronbach's alpha coefficients of internal consistency of an instrument/measure), reliability can be understood as homogeneity. Therefore, the items in these subscales correlate to each other. These findings implies that they belong to the same group of indicators. To conclude, there are two groups of indicators – extrinsic and intrinsic.

It was also noticed that some items which were supposed to measure extrinsic motivation are negatively correlated with the factor (i.e.

component) of intrinsical motivation. Those items were: ''I learn English because teachers want me to do so'', ''I learn English to fulfill parents' expectations'', and ''I learn English to achieve specific grade.'' As can be seen, the content of these items (statements) refers to the expectations of other people (parents and teachers) and to the intention for achieving specific grades. Because intrinsic motivation is related to one's own expectations of himself/herself, the negative correlation is not a surprising result. Also, these items and their saturations with the factor of intrinsic motivation refer to negative correlation between extrinsic and intrinsic motivation of our participants.

Furthermore, the Intrinsic and extrinsic motivation for English learning scale (IEM – ELS) is a short instrument which can be used for specific purposes. It does not include general motivation; however, it comprises intrinsic and extrinsic motivation for learning English language. Hence, it is useful for English teachers (to assess students' levels of motivation for learning English) as well as for researchers because both extrinsic and intrinsic motivation are good predictors of different educational outcomes. English as the second language or the first foreign language (ESL/EFL) plays an important role in our society, communication and sharing information between people from all around the world. Thus, motivation for learning English is one of the most crucial factors to master it.

7.Conclusions
Considering our research questions and hypotheses, the following conclusions can be derived. Intrinsic and extrinsic motivation for English learning scale has two-factor latent structure. The first factor is Intrinsic motivation and the second is Extrinsic motivation. Therefore, it contains two subscales with previously mentioned labels (names). The content of these subscales is similar to the content of the motivation subscales created by Deci & Ryan (1980, 1991), Noels et al. (2000), and Vallerand et al. (1992). However, they provided some subdivisions of intrinsic and extrinsic motivation.

IEM – ELS is a very reliable instrument for measuring motivation for learning English, i.e. it has good internal consistency. Intrinsic motivation subscale is highly reliable measure of enjoying English and learning it without thinking of awards and prestige. Extrinsic motivation subscale has acceptable internal consistency and it successfully measures learning English because of social acceptance and external awards. As mentioned above, the homogeneity of the whole scale (and its subscales) is also high enough.

We recommend other researchers in this scientific field that they check the criterion validity of this scale, especially its convergent validity. That

is, they can examine correlations between participants' results on Intrinsic motivation subscale and Extrinsic motivation subscale with their scores on the subscales of the Motivational Orientation Inventory (Noels et al., 2000), the Situational motivation scale (Deci & Ryan, 1991), and the Academic motivation scale (Vallerand et al., 1992). If these correlations are positive and significant, the convergent validity of the IMS – ELS will be also satisfactory. In addition, it will be useful to calculate correlations between these types of motivation with English language skills and knowledge. If the values of these coefficients are high, it will indicate that the IMS –ELS has good criterion validity. In other words, it would help us to predict learning outcomes to acceptable extent.

REFERENCES

ATKINSON, J. & BIRCH, D. (1970). The dynamics of action. New York: Wiley.

BANDURA, A. (1996). Self-efficacy: The exercise of control. New York: Freeman.

COFER, C. N. & APPLEY, M. H. (1967). Motivation: Theory and research. New York: John Wiley & Sons.

DECI, E. L. (1975). Intrinsic motivation. New York: Plenum.

DECI, E. L. & RYAN, R. M. (1980). The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), Advances in experimental social psychology. Vol. 13, 39-80. New York: Academic Press.

DECI, E. L. & RYAN, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum Press.

DECI, E. L. & RYAN, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), Nebraska Symposium on motivation (vol. 38): Perspectives on motivation, 237–288. Lincoln: University of Nebraska press.

DECI, E. L., KOESTNER, R., & Ryan, R. M. (2001). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. Review of Educational Research, 71(1), 1-17.

DORNYEI, Z. (1998). Motivation in second and foreign language learning. Language Teaching, 31, 117-135.

HARACKIEWICZ, J. M. & SANSONE, C. (2000). Rewarding competence: The importance of goals in the study of intrinsic motivation. In C. Sansone & J. M. Harackiewicz (Eds.), Intrinsic and extrinsic motivation: The search for optimal motivation and performance. San Francisco: Academic Press, 82-103.

KRUGLANSKI, A. W. (1978). Endogenous attribution and intrinsic motivation. In M. R. Lepper & D. Green (Eds.), The hidden costs of

reward: New perspectives on the psychology of human motivation, 85-107. Hillsdale, NJ: Lawrence Erlbaum Associates.

LOCKE, E. A. & LATHAM, G. P. (1990). A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice Hall.

McCLELLAND, D. (1953). The Achievement motive. New York: Appleton-Century-Crofts.

NOELS, K. A., PELLETIER. L. G., CLEMENT. R., & VALLERAND. R. J. (2000). Why are you learning a second language? Motivational orientations and self-determination theory. Language Learning, 50(1), 57-85.

RYAN, R.M. & DECI, E.L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemporary Educational Psychology, 25: 54-67.

RYAN, R. M. & DECI, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist, 55.

VALLERAND, R. J., PELLETIER, L. G., BLAIS, M. R., BRIERE, N. M., SENECAL, C. & VALLIERES, E. F. (1992). The Academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. Educational and Psychological Measurement, 52(4), 1003-1017.