Learner Autonomy Scale: A Scale Development Study

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ABSTRACT

The goal of the study is to develop a scale named “Learner Autonomy Scale” (LAS) for determining the learner autonomy of the students toward English lesson. The proposal scale, composed of 29 items, was applied to two study groups in Turkey. The group of Exploratory Factor Analysis that aims to determine the psychometric properties especially the construct validity and reliability of LAS consisted of 291 6th grade students. The group of Confirmatory Factor Analysis that aims to find out whether the factor structure demonstrated by LAS was confirmed or not consisted of 297 6th grade students. As a result of the analyses, it has been determined that the scale consists of 14 items and it has a structure composed of one factor. The study showed that LAS is a valid and reliable tool. Using LAS with other data collection tools on learner autonomy will be beneficial.

Keywords: learner autonomy, scale development, validity and reliability, attitude

INTRODUCTION

Learner autonomy has been receiving increasingly greater focus in recent years. In fact, the origin of the concept dates back many years. For centuries, many great thinkers such as Galileo, Rousseau, Dewey, Kilpatrick, Freire, Illich and Rodgers have approached the concept from many different angles. In fact, all of them brought to light that autonomy is a prominent area that has connections with Humanism, Constructivism and Experiential learning.

In Humanism, “Placing high respect and value on the learner, viewing learning as a way of self realization, giving learners considerable say in decision making and giving teachers the role of facilitator” can be said to promote learner autonomy. In Constructivism, knowledge is constructed by learners that take an active participation. In this process, students build information and create meaning and knowledge. Thus, students are at the center and teachers make learning easy. As Wang (2011) suggests, constructivist teaching and learning encourage learner autonomy. In Experiential Learning, Woolfe (1992) suggests four components of experiential learning. “Student” is the first one of it. It suggests that the students know the processes which are taking place, and which help learning. The second suggests that the students are involved in a reflective experience. The third one is about experience and content that includes what is being learned and how it is being learned that play a crucial role for the person. The last one is that the student is engaged as a whole person. All the components suggest that a student is an active participant of classroom environment and learns to become responsible for his/her own learning, which composes the basic units of learner autonomy concept. For example, Galileo showed his belief in autonomy by saying “You cannot teach anything.
You can only help him find it within himself” (Benson, 2001, p. 22). Rousseau is another prominent thinker about autonomy. According to him, teacher has a role that supports learner and learns with them. As for learners, they take charge of their learning that requires responsibility for their own actions. Dewey became one of the most prominent philosopher and educator that had a precursor of view informing Council of Europe on autonomy especially in language learning area. He made great contributions especially in three fields. These are: the relationship between education and social participation, education as problem solving and classroom organization.

When considered the earliest definitions of autonomy, it was given in the report of the council of Europe’s Modern Languages Project, established in 1971. With the outcome of the Project, the Centre de Researches et d’Application sen Langue (CRAPEL) was founded at the University of Nancy, France. Yues Chalon, the founder of CRAPEL, is thought by many to be the father of autonomy in language learning. Following Chalon’s death in 1972, the leadership of CRAPEL was passed to Henri Holec, a prominent figure within the field of autonomy today.

Holec (1981) defines “learner autonomy” as “the ability to take charge of one’s own learning” that includes determining the objectives; defining the contents and progressions; selecting methods and techniques to be used; monitoring the procedure of acquisition by properly speaking; and evaluating what has been acquired (Little, 1991, p.7). Many different scholars like Dickinson (1987), Little (1991), Benson and Voller (1997) have also defined autonomy. According to Little (1991, p.2), “autonomy is essentially a matter of the learner’s psychological relation to the process and content of learning”. Dickinson (1987) points out that autonomy is a concept in which the learner is completely responsible for all the decisions about his/her own learning and the implementation of those decisions. Benson (1997, p.29) also says that “autonomy is a recognition of the rights of learners within educational systems”. Of all the definitions, the most known definition used in the literature is the one by Holec. In fact, there are many reasons why learner autonomy is becoming prominent. These are as follows: the concept of life-long learning, information explosion that includes the increased quantity and quality of learning, growing student numbers that requires looking for alternative means of providing education to individuals with different needs, opportunities and preferences, commercialization of education in which private language teaching institutions consider student needs as consumer demands, developments in educational technology in which students no longer need to attend classes as well as the increased importance of language in education in general owing to internationalization of business and education (Benson, 2001; Marijana Marjanovikj, 2014)

There have been a lot of studies about autonomy in an extensive literature survey. These studies deal with learner autonomy in terms of many different viewpoints such as fostering learner autonomy through differentiation strategies, materials development with language learner autonomy, teaching with technology or the role of alternative assessment in fostering learner autonomy. It has been seen that most of the studies are about teaching English as a foreign language, were applied for university students studying English and are a kind of survey research (Barillaro, 2011; Fabela Cárdenas, 2012; Jiang, 2008; Kostina, 2011; Ma and Ma, 2012; Rungwaraphong, 2012; Shen, 2011).

As a result of an extensive literature survey, to the best of our knowledge there are almost no developing scale studies that measure 6th grade students’ autonomy towards English lesson. Therefore, this study will be unique at home and abroad as well as making contributions to the literature field. Within the context of this study, it has been aimed to develop a “Learner Autonomy Scale” (LAS) for 6th grade students. The reasons why 6th grade students were chosen are as follows:

- 5th grade students have just been enrolled in secondary school and are in an adjustment process.
- As 7th and 8th grade students are required to prepare TEOG (Transition from Basic Education to Secondary Education, it is quite likely that they are under exam pressure.
- In English Programmes prepared in 2013, the concept of “learner autonomy” in especially 6th Grade English Programme has been explained in a detailed way and it has been emphasized that the students that are in the 6th grade in a critical period.
To sum up, the most appropriate class was considered as 6th grade as it was not wanted to be influenced from the other variables.

The purpose of this study is to develop a scale that determines the level of learner autonomy of the 6th grade students in addition to describing its psychometric features (validity and reliability). For this purpose, the research questions below are addressed.

1. What are the exploratory and confirmatory factor analysis results of the “Learner Autonomy Scale” (LAS)?
2. What are the reliability test results of the “Learner Autonomy Scale” (LAS)?

**METHODODOLOGY OF STUDY**

This study is a descriptive study that aims to develop a scale for determining the level of learner autonomy of the students towards English language. In addition, how to develop it and the psychometric properties (validity-reliability) of this scale were also investigated by researchers.

**Scale Development Group**

The scale development group of this research consists of two groups. In order to determine the psychometric properties of the scale, data were collected from two different groups that are Exploratory Factor Analysis and Reliability Group and Confirmatory Factor Analysis Group. In this study, purposeful sampling was used as it was easily accessible to the researcher.

**Exploratory Factor Analysis and Reliability Group**

This group was used to determine the psychometric properties especially the construct validity and reliability of LAS. The participants of this group were the students going to schools in four different districts of Ankara (Altındağ, Çankaya, Mamak, Yenimahalle). This group consisted of 291 students. The participants of this group were students going to schools in four different districts of Ankara (Altındağ, Çankaya, Mamak, Yenimahalle). These districts have different level of income. This group consisted of 291 students. Of the 6th grade students constituting the group, 157 (54%) students were male and 134 (46%) female. As for the distribution of the study group in terms of the districts, 157 students (54%) were from Çankaya, 41 (14%) from Yenimahalle, 58 (20%) from Mamak and 35 (12%) from Altındağ. The scale was realized towards the second week of May. The scale was developed in the third week of April.

**The group of Confirmatory Factor Analysis**

This group was used to discover whether the factor structure demonstrated by LAS as a result of exploratory factor analysis was confirmed or not. The participants of this group were students going to schools in four different districts of Ankara (Altındağ, Çankaya, Mamak, Yenimahalle). This group consisted of 297 students. These districts have different level of income. This group consisted of 297 students. Of the 6th grade students constituting the group, 164 (55%) students were male and 133 (45%) female. As for the distribution of the study group in terms of the districts, 122 students (41%) were from Çankaya, 67 (23%) from Yenimahalle, 71 (24%) from Mamak and 37 (12%) from Altındağ. The scale was realized towards the second week of May.

**Scale Development Process**

It has been stated in the literature that the scale development process should have certain steps (Cohen & Swerdlik, 2013; Crocker & Algina, 1986; DeVellis, 2014; Şeker & Gençdoğan, 2014). In this study, scale development steps are: 1) Determining the goal of the scale (determining the level of learner autonomy of the students); 2) Defining the 6th grade students from Ankara to apply the scale; 3) Determining the nature and scope of the properties (learner autonomy level) intended to be specified in the scale; 4) Deciding on the types of items in the scale in the context of the features intended to be specified (learner autonomy level); 5) Writing test items in the type of items determined; 6) Review of the items and forming a questionnaire; 7) Asking field experts’ opinions about the legibility of the scale; 8) In accordance with the field experts’ opinions, giving the scale its
final form before the pilot application; 9) Scoring and analyzing the items; 10) Presentation of the psychometric properties of the scale (reliability and validity) at the end of the pilot application; 11) Forming the real scale based on the results obtained.

Data Collection Instrument
As a data collection instrument, “Learner Autonomy Scale” was used in the study with the aim of determining the autonomy level of students towards English lesson. After the literature on “Learner autonomy” and “autonomy” was reviewed, the scale was developed. Based on the information gathered from the review and expert opinions (an associate professor working in the field of English Language Teaching (ELT), a PhD student in ELT, and one doctoral student in the field of assessment and evaluation), the scale with 29 items was generated as a five point-Likert Scale Likert ranging from strongly disagree (1) through strongly agree (5). 15 items were extracted from the scale and 14 items were left as a result of the analysis. These 14 items provided a single factor structure for the scale. The highest score that can be obtained from the scale is 70, whereas the lowest score is 14. Items numbered 9 and 14 on the scale are reverse coded. These items are the ones that contradict with the term “learner autonomy”.

The left items of the scale are the ones that develop learner autonomy and include the basic components of it. When items numbered 9 and 14 on the scale are reverse coded, all the items of the scale show a congruity. Getting high score from the scale shows that students have a high level of learner autonomy, whereas getting low score from the scale shows that they have a low level of learner autonomy.

Analysis of Data
The data were analyzed by using analyzed using IBM-SPSS 22 and AMOS 22 software. In order to measure the validity and reliability of LAS, Kaiser-Meyer-Olkin (KMO) test, Bartlett Sphericity test, varimax rotation, anti-image correlation, Cronbach alpha reliability coefficient, and confirmatory factor analysis procedures were conducted (Büyüköztürk, 2013; Özdamar, 2013).

FINDINGS

Psychometric properties of LAS (validity and reliability)
Exploratory factor analysis was carried out to examine construct validity of LAS. In order to determine the validity and reliability of LAS, Kaiser-Meyer-Olkin (KMO) test, Bartlett Sphericity test, Varimax rotation, Cronbach alpha reliability coefficient, and confirmatory factor analysis were used (Büyüköztürk, 2013; Özdamar, 2013). Prior to factor analysis, item total correlations were calculated. Items numbered 7, 10, 11, 12, 22, 23, 24, 25, 26, 27, and 28 were extracted from the scale because their correlation values were below 0.300 and so the values of these items lowly contribute to the phenomenon which will be explained by the scale. In the factor analysis, it is pointed out that each factor should consist of at least three items. It has been found out that items 3, 8, 17 and 29 showed a load on multiple factors. For this reason, those four items were extracted from the scale. A total of 15 items were excluded from the scale. Psychometric properties about the left 14 items are summarized in Table 1.
The construct validity of LAS was determined by using principal component analysis. This analysis also includes Kaiser Meyer Olkin (KMO) and Bartlett Test, which were carried out to check the appropriateness of the data for factor analysis. As seen in Table 1, KMO value was found to be 0.932. This value should be at least over 0.50. The obtained KMO value shows that the data set is appropriate for analysis. The Bartlett Test result was \( X^2 = 3515.521; \) df = 91 (p < 0.01). The significance value was found lower than 0.05, which means factor analysis can be conducted.

The results of exploratory factor analysis obtained show that item-total correlations are between 0.692 and 0.916. The variance explained is 74% and this value is considered acceptable for the scale development studies in social sciences (Büyüköztürk, 2013). It has been seen in the exploratory factor analysis that the scale revealed only one factor. Therefore, the varimax rotation method was not realized (Büyüköztürk, 2013; Özdamar, 2013). The scree plot graph in Figure 1 confirms that the scale includes a single factor.
As a result of the items excluded from the scale, the remaining 14 items were clustered under a single factor. The numbers left (1, 2, 4, 5, 6, 9, 13, 14, 15, 16, 18, 19, 20 and 21) were renumbered as (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14). The final version of LAS measures the level of learner autonomy of students toward English lesson. Getting high score from the scale reveals that students have a high level of learner autonomy, whereas getting low score from the scale shows that they have a low level of learner autonomy.

Whether the scale is collectable or not has also been checked. The results were summarized in Table 2.

**Table 2: Cronbach’s Alpha and Additivity Test Results for LAS**

<table>
<thead>
<tr>
<th>Cronbach Alpha</th>
<th>Variance Root</th>
<th>Sum of Squares</th>
<th>Mean of Squares</th>
<th>F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.965</td>
<td>Nonadditivity</td>
<td>0.229</td>
<td>0.229</td>
<td>0.410</td>
<td>1</td>
<td>0.522</td>
</tr>
</tbody>
</table>

When Table 2 is examined, it can be seen that the reliability value of the scale is 0.965. For scales, 0.70 and higher values of Cronbach’s Alpha coefficient show high reliability (Özdamar, 2013). This factor has high reliability level and is also a collectable Likert type factor in terms of scoring (Tukey Nonadditivity p>.05).

According to the results of exploratory factor analysis of LAS, confirmatory factor analysis was carried out to determine whether it is confirmed or not. The model obtained from the analysis can be seen in Figure 2.

![Figure 2. LAS Confirmatory Factor Analysis Model (Standardized Values)](image)

When Figure 2 is examined, it can be seen that the values of Chi-square and degree of freedom obtained from Confirmatory Factor Analysis (CFA) are $\chi^2 = 112.08$, (df=53, $p<.01$), and the ratio of $\chi^2/df = 2.11$ is obtained. That the ratio obtained from the selected samples is less than 3 indicates a perfect consistency (Joreskog and Sorbom, 1993; Sumer, 2000; Kline, 2005). Thus, it can be asserted that the consistency between the data set and the model found in CFA is perfect. The other known goodness of fit values obtained via CFA are summarized in Table 3.
Table: 3 Goodness of fit values obtained from CFA

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</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$</td>
<td>sd</td>
<td>$\chi^2$/sd</td>
<td>RMSEA</td>
<td>AGFI</td>
<td>RMR</td>
<td>CFI</td>
</tr>
<tr>
<td>112,08</td>
<td>53</td>
<td>2.11</td>
<td>0.057</td>
<td>0.931</td>
<td>0.061</td>
<td>0.96</td>
</tr>
</tbody>
</table>

It can be said that one of the most commonly used goodness of fit indexes in CFA is RMSEA (rootmeanquareerror of approximation). In an CFA analysis, 0.05 or a lower value of RMSEA is an indicator of model-data fit. Even so, it is also stated that this value can be acceptable up to 0.08 (Browne and Cudeck, 1993; Hu and Bentler, 1999; Simsek, 2007; Vieira, 2011). The RMSEA value in this study is 0.057, which is considered acceptable. The AGFI (Adjusted Goodness of fit index) value higher than 0.80 and the RMR (Root- meansquareresidual) lower than 0.10 can be considered acceptable values that indicate the model-data fit (Anderson & Gerbing, 1984; Marsh, Balla & McDonald, 1988). The result of CFA determines AGFI as 0.931 and RMR as 0.061. According to these results, it can be asserted that model-data fit is acceptable. The main aim of CFA is to identify the goodness of fit between a model and previously obtained data (Sumbuloglu & Akdag, 2009). In this respect, it may be implied that one-factor structure of LAS was confirmed.

DISCUSSION

In consideration of the findings, it can be said that the scale developed as a result of this study has necessary psychometric features such as reliability and validity and could be applied in further research. However, further research should be conducted with various populations to enable a more powerful analysis and to generalize the results of this study. As Benson (2011) said, there has been an increased interest in autonomous language learning but it is not as required. It is very important to recognize and encourage learner autonomy in ESL classrooms. There has been a universally agreement in the field that the importance of the teachers’ role in autonomous language learning cannot be ignored (Benson, 1997; Little, 1991). In order to try to develop learner autonomy in the classroom, teachers should encourage students to be interdependent and to work collectively, ask students to keep a diary of their learning experiences, explain student roles from the beginning, progress step by step from interdependence to independence, give the students projects to do outside the classroom, have the students design lessons or materials to be used in class, instruct students on how to use the available resource centres, encourage the students to use only English in class, stress fluency rather than accuracy, and conduct sessions to help learners gain insights into their learning styles and strategies (MOE, 2006).

In addition, it is evident from some of the studies that teachers, students, parents, and administrators were not very familiar with the term autonomy in language learning (Dişlen, 2011 & Riihimäki, 2011). It is clear that if the stakeholders are not familiar with autonomous language learning, it is not likely that they would be able to realize it totally. In order to cope with that, an awareness should be created among stakeholders by means of model practices.

RESULT

In this study, a scale that aims to determine the level of learner autonomy of students was developed. A total of 15 items were removed from the scale because their correlation values were low and some of these items failed to comply with the rule that each factor should consist of at least three items in a factor analysis, It was determined that the remaining 14 items form only one factor in terms of the validity and reliability of the scale. The remaining 14 items forming only one factor were renumbered. The reliability value of the scale is above 0.95. The scale accounts for 74 % of the
variance in the level of learner autonomy of the students towards English lesson. This value is above acceptable values for the scale development studies in social sciences. One-factor structure model obtained as a result of exploratory factor analysis was also confirmed in confirmatory factor analysis.

SUGGESTIONS

In this study, it can be said that the desired sample sizes were reached for the scale development. Therefore, this scale can be used in other studies. In the field literature, there have been studies that aim to investigate learner autonomy of students. There have also been studies that collect data using a scale. However, there have been no developed scales or studies that aim to the level of learner autonomy of the 6th grade students. Therefore, using LAS with other data collection tools will make contribute to literature. In addition, LAS can also be applied to a broader audience as the application of the instrument.

REFERENCES


APPENDIX
Özürklik Ölçeği
Learner Autonomy Scale (LAS)

Aşağıda eğitim sürecine ilişkin özürklik durumlarınızı betimlemeye yönelik ifadeler yer verilmiştir. Lütfen sorularınızı cevaplarken İNGİLİZCE ÖĞRENMEYİ düşününüz. Her bir madde ile tanımlanan davranış gösterme sıklığınızı, aşağıda belirtilen beşli derecelendirme ölçeği üzerinde uygun gelen seçeneği (ölçek noktasını) işaretleyerek (X) belirtmeniz beklenmektedir.

<table>
<thead>
<tr>
<th>Sıra</th>
<th>İfadeler</th>
<th>Hiç Katılmıyorum</th>
<th>Katılmıyorum</th>
<th>Kararsız</th>
<th>Katılıyorum</th>
<th>Tamamen Katılıyorum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>İngilizce öğrenmemi sağlayacak en uygun aktiviteyi seçmek isterim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>İngilizce öğrenirken sorumluluk almak isterim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>İngilizce öğrenirken benim görüşlerim alınmasını isterim</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>İngilizce dersinde ögretilcek konularda söz sahibi olmak isterim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>İngilizce öğrenirken zayıf taraflarını tespit edebilirim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>İngilizce öğrenirken güçlü tarafını tespit edebilirim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>İngilizce derslerimle ilgili video/CD'leri sınıfta kullanmak isterim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>İngilizce iletişim kurmak için risk almayı severim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>9</td>
<td>İngilizceyi sadece öğretmenin yardımıyla öğrenebilibirim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>10</td>
<td>Seviyeme göre yazılmış İngilizce kitapları kendi isteğimle okurum.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>Kendi öğrenme ihtiyaçlarını belirleyebilirim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>İngilizcede yaptığı çalışmalarımı kendim değerlendirebilirim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>Yapılan aktivitelerde bana da seçim hakkı verilmesini isterim.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>14</td>
<td>İngilizce bir konuyu öğretmen anlatmazsa, onu öğrenemeyeceğim diye korkarım.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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