



## VALIDATING MYSELF-AS-A-LEARNER SCALE (MALS) IN THE TURKISH CONTEXT

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**Abstract:** This study aims to explore the construct structure of the Turkish version of the *Myself-As-A-Learner Scale (MALS)*, which was designed to measure academic self-concept. A translated version of MALS was administered to 483 participants (mean age = 14.31, SD = 2.08) in six different cities across Turkey. An exploratory factor analysis revealed a five-factor structure, explaining 50.99% of the total variation in MALS scores. A confirmatory factor analysis indicated acceptable levels of goodness of fit for the five-factor model. The instrument appeared to distinguish contrasting groups of students according to their English, Turkish, and Maths scores, with more successful students reporting higher MALS scores. The MALS scores also attained significant moderate correlations with achievement in those courses. Further, the instrument yielded a high internal consistency ( $\alpha = .82$ ). The study concludes that MALS can be an effective tool in endeavours to explore academic self-concept in relation to various related constructs.

**Keywords:** Academic self-concept, Myself-As-a-Learner Scale, translation, construct validity, reliability

**Özet:** Bu çalışma, akademik benlik algısını ölçmek için geliştirilmiş olan Öğrenci Olarak Ben Ölçeği'nin (*Myself-As-A-Learner Scale, MALS*) Türkçe çevirisinin yapı geçerliliğini araştırmayı hedeflemektedir. MALS'ın Türkçe versiyonu Türkiye'nin çeşitli şehirlerinde 483 katılımcıya (ortalama yaş = 14.31, SS = 2.08) uygulanmıştır. Açımlayıcı faktör analizi, MALS skorlarındaki toplam varyansın %50.99'unu açıklayan beş faktörlü bir yapı ortaya çıkarmıştır. Doğrulayıcı faktör analizi de bu beş faktörlü yapı için kabul edilebilir uyum iyiliği değerleri vermektedir. Ölçeğin İngilizce, Türkçe ve matematik derslerinden alınan notlara göre zıt grupları ayırt edebildiği; bu derslerden daha yüksek not alan öğrencilerin daha yüksek MALS puanına sahip olduğu gözlenmiştir. MALS puanlarının ayrıca bu derslerdeki başarı puanları ile orta seviyede bir korelasyona sahip olduğu tespit edilmiştir. Ayrıca MALS yüksek bir alfa iç geçerlilik katsayısını vermektedir ( $\alpha = .82$ ). Bu çalışma, MALS'ın akademik benlik algısı araştırmalarında etkili bir ölçek olarak kullanılabileceği sonucuna varmaktadır.

**Anahtar sözcükler:** Akademik benlik algısı, Öğrenci Olarak Ben Ölçeği, çeviri, yapı geçerliği, güvenilirlik

### 1. Introduction

It has long been widely recognised that the most important contributing factor to successful learning outcomes is motivation. However, there has been far less agreement amongst scholars and researchers as to what motivates a person to learn and how to measure it. An analysis by Williams and Burden (1997) of a wide range of theoretical perspectives nevertheless suggested that the different contributing factors to motivation could be subsumed under three main headings – a person's attitudes towards what is to be learnt, their sense of agency or competence in completing the required task(s), and their perceptions of themselves as learners. None of these sets of factors are discrete in itself, but all must be taken into account in understanding and affecting why and how people are motivated to learn.

The purpose of the present paper is to describe a widely used scale for the assessment of students' academic self-concept, the Myself-As-a-Learner-Scale (Burden, 1998; 2012) and report on a study conducted to validate this instrument on a Turkish school population.

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## 2. Literature Review

Since the beginning of the 20<sup>th</sup> century, the important role of the self-concept in learning has been recognised by such eminent educational psychologists as William James and John Dewey, but it was the seminal work of Burns in the UK and Harter, Shavelson, and Marsh in the US that really brought it to the attention of the broader educational community (Burns, 1982; Harter, 1986; Marsh, 1993; Shavelson & Bolus, 1982). A considerable number of research studies have subsequently attested to the significance of their self-perceptions in people's lives. For example, Ruvolo and Markus (1992:96) argue that it is the individual's self-concept, in other words, "specific representations of what is possible for the self that embody and give rise to generalised feelings of efficacy, competence, control, or optimism, and that provide the means by which these global constructs have their powerful impact on behaviour". That is, how we perceive ourselves also determines how possible and realistic we perceive our future goals reflecting on our strengths (Dörnyei, 2009), affecting our motivation to act or give up.

Self-concept measurement can be problematic because of its multifaceted nature. This is simply because there are literally dozens of ways in which people can perceive themselves. Psychologists have suggested that there are six or eight major categories into which these perceptions can be grouped but they are not always in agreement as to the relative power of these. An adolescent girl's physical or social self-image may be far more important to her than her academic self-concept, for example. Thus, attempts to provide one all-embracing self-concept or self-esteem scale may serve to tell us very little. What is needed, therefore, are scales to measure different aspects of a person's self-concept, each of which may play a more or less important part at different times in that person's life (Marsh, 1993). Self-concept can therefore be said to be a multidimensional construct (Heaton & Duerfeldt, 1973) subsuming domains like academic, social, and emotional self-concept (see Marsh, 1990 for further details).

One aspect of the self-concept that has been found to be important in the school years has been the academic or learning self-concept (Burden, 2008), which has even been broken down by some researchers into sub-areas such as mathematical self-concept, language learning self-concept etc. (Helmke & Van Aken, 1995; Lawrence, 2006). Of such attempts, the *Myself-As-a-Learner-Scale (MALS)* (Burden, 1998) is of immediate significance for this study.

MALS (Burden, 1998) has been designed to overcome difficulties and complexities in measuring self-concept as a one-dimensional construct and offer an instrument that can be used to focus only on the learning self-concept of learners. *Myself-As-a-Learner-Scale (MALS)* was constructed as a 20 item questionnaire, which was easy to administer, score and interpret by busy classroom teachers. Although the scale taps into different aspects of learning, the total score is treated as a holistic indicator of levels of academic self-concept held by individual learners.

The initial standardisation study in the UK, involving 389 secondary school students, showed MALS to be both valid and reliable, and factor analysis revealed 5 underlying factors contributing to 54% of the variance. In a more recent analysis of data over a thousand participants in the UK, results from Burden (1998) were very closely confirmed with very similar mean and standard deviation values (Burden, 2012). This latest standardisation revealed a three-factorial construct: sense of agency; learned helplessness; and enjoyment and involvement in learning (see the Methods section below for further details).

Since its construction in 1998, MALS has been employed in a vast number of schools and educational research studies (Armstrong & Humphrey, 2009; Burke & Williams, 2008; Chalk & Bizo, 2004; Dewey & Bento, 2009; Eaton & Bell, 2006; Kaufman & Burden, 2004; Roberts & Norwich, 2010; Trickey, 2007; Trickey & Topping, 2006; Topping, Campbell, Douglas, & Smith, 2003) where the MALS was utilised as a ‘before-and-after’ measure and found to have predictive validity in explaining outcomes of interventions. In a growing number of studies, MALS has been effectively and usefully employed as one aspect of pre-post intervention designs whereby changes to participants’ academic self-concepts have been viewed as important aims of the intervention. For example, Kaufman and Burden (2004) explored the effects of mediation training and utilised MALS (Burden, 1998, 2012) to measure the learning self-concept of students with learning difficulties. Chalk and Bizo (2004) investigated the effects of praise on student academic self-concept as measured by MALS as well as on other variables. Similarly, Trickey and Topping (2006) and Trickey (2007) explored the effects of being involved in collaborative philosophical enquiry and measured effects of their treatment on participants’ academic self-concept through MALS. MALS was also instrumental in Eaton and Bell’s (2006) study in which they tried to assess the effects of implementing a cognitive acceleration programme in mathematics learning on their participants’ self-perceptions as learners and problem solvers. Burke and Williams (2008) and Dewey and Bento (2009) made use of MALS to explore the effects of teaching thinking skills, among others, on the academic self-concept of students. More recently, MALS was employed as a measure of self-concept in a literacy research project (Roberts & Norwich, 2010) that attempted to measure the effects of precision teaching on reading accuracy as well as their participants’ academic self-concept.

Permission has also been given for translating and using MALS in a number of ongoing research studies worldwide, in a range of different educational and linguistic contexts although results of these studies have not yet been published (Burden, 2012: personal communication). However, MALS, to the best of our knowledge, has not been used in a Turkish context. Nor has it been translated into Turkish and tested for reliability and validity. With this in mind, translating MALS into Turkish and verifying its construct properties and thereby presenting the instrument to Turkish researchers and teachers can be conducive for a better understanding of the relationship between students’ learning self-concept and their school achievement as well as other important cognitive, affective and socioeconomic variables involved in the process of learning.

In view of the potential for further self-concept-based research in Turkish schools, it was decided to translate MALS into Turkish and to explore the construct validity and reliability properties of the Turkish version of the Myself-As-a-Learner Scale (MALS) [Öğrenci Olarak Ben Ölçeği: Appendix A] (Burden, 1998, 2012).

### **3. Method**

#### **3. 1. The instrument itself**

MALS is a one-dimensional scale consisting of twenty Likert-type items. It purports to measure a person’s academic self-concept, more specifically their self-perception as a learner and problem solver. The scale was designed to be used in schools with learners between the ages of 9 and 16, but has been found to be useful for working with adult learners as well (Burden, 1998, 2012). Each of the items in the scale relates to some aspect of the respondent’s thoughts and feelings about their approach to learning and their perceived learning capabilities (e.g. I am good at doing tests; When I get stuck with my work, I can usually work out what to do next; Learning is difficult). Respondents are required to assess themselves

against each item on a 5-point scale ranging from ‘*Definitely true of me*’ to ‘*Definitely not true of me at all*’. The maximum possible score is 100 and the minimum is 20.

The instrument was subjected to scrutiny as to what constitutes academic self-concept. Although it was designed to be a one-dimensional instrument, three meaningful factors emerged in an exploratory factor analysis, explaining a 43% of variance (see Burden, 2012). These major factors were labelled as *sense of agency: learned optimism*; *learned helplessness*; and *enjoyment and involvement in learning*. Items related to sense of agency: learned optimism mainly reflected positive judgment of one’s capabilities (e.g. I am good at doing tests; Learning is easy; I am good at discussing things; etc.) while learned helplessness items echoed one’s perceived weaknesses (e.g. I find a lot of school work difficult; I need lots of help with my work; Learning is difficult; etc.). The enjoyment and involvement in problem solving represented one’s opinions concerning how they feel about having to work around a problem (e.g. I like having problems to solve; I am very good at solving problems; I think that problem solving is fun; etc.).

MALS has been shown to have high internal consistency. Burden (1998) reports that in his standardisation study in the UK, MALS yielded encouraging reliability figures ( $\alpha = .85$ ). A test-retest reliability measure with a group of 22 mixed ability 12 year old children generated strong correlations between two occasions of measurement ( $r_{(22)} = .96$ ), indicating good figures of reliability. A second test-retest reliability study with 19 Year 6 students on two occasions also yielded promising reliability figures ( $r_{(19)} = .70$ ).

MALS has been shown to correlate well with other related measures such as the Connell Children’s Perception of Control Scale (Connell, 1985), achieving small to medium sizes of correlation coefficients (Burden, 1998). MALS in a number of studies has been found to respond to interventions used in experimental settings (e.g. Dewey and Bento, 2009; Roberts and Norwich, 2010), proving to be instrumental in research studies. Burden (2012) reports medium size correlation coefficients between MALS scores and some achievement tests ( $r = .38$  with reading age;  $r = .34$  with mathematics;  $r = .41$  with verbal reasoning; and  $r = .35$  with non-verbal reasoning). Further, Erten and Burden (2014) identified Academic Self-concept as measured by MALS to be one of the key predictors of achievement in English classes, explaining, along with ability attribution to course achievement, a unique 27% of the variation in participants’ latest English exam scores. A similar strong relationship was also documented between sixth graders’ end of the term Turkish course marks and their MALS scores (Bayraktar-Erten & Erten, 2014).

### **3. 2. Translation process**

Both translation and back translation methods were performed to make sure no significant semantic loss/shift emerges between the Turkish and the original versions in English (Brislin, 1980). Equivalence between the two versions was checked at both levels. Firstly, the original MALS was translated with the purpose of making the best sense and expressing the content in as natural Turkish as possible. The translation was done by three different professional English majors whose translations were later pooled for naturalness of Turkish by an academic Turkish specialist and the author. Care was requested not to produce a mechanical translation as it is not always possible to convey the message effectively and naturally in a word for word translation. Secondly, a back translation was done by a different set of three translators with similar qualifications. Translation was done from the Turkish version with no reference to the original English version (Geisinger, 1994). Translations were compared and combined into one single version by two academic professionals for the equivalence check.

Semantic equivalence between the Turkish and English versions was checked through a double-fold translation-back-translation procedure. Initially, the match between the original English version and its Turkish translation was tested. To do this, six expert bilingual raters majoring in and holding a minimum of a Master's degree in English were invited to rate the synonymy between individual items in the English and Turkish versions on a scale of 10, 10 being 100% synonymous and 1 being not related at all. Getting bilingual raters to respond to both language versions of an item reduces the problem of item translation difference (Şireci & Berberoğlu, 2000). An examination of raters' responses as to how synonymous the two versions were on a scale of 10 revealed a mean score of 9.4/10, indicating a high level of semantic correspondence between the original English version and its Turkish translation.

Secondly, synonymy between the English A version (the original) and the English B version (back-translated from the Turkish version) was examined by a different set of 6 expert raters with the same qualifications as the first group of raters. A different set of raters were employed to avoid any previous knowledge bias. The raters were requested to rate the correspondence between the two English versions. To do this, they were instructed to rate the semantic match between corresponding items in each version on a scale of 10, 10 being 100% synonymous and 1 being not related at all. An analysis of raters' responses revealed a mean score of 8.8/10, still a satisfactorily high level of equivalence despite the blind back-translation procedure. Therefore, it is safe to believe that the Turkish version used in this study to collect data sufficiently represented the content presented in the scale items of the original MALS.

### **3. 3. Setting and participants**

Data were collected in six different cities across Turkey: Bayburt, Çanakkale, İstanbul, Manisa, Mersin, and Samsun. Cities were selected to provide a spread across Turkey. Schools were all in the city centres. 483 participants (Mean age = 14.31, SD = 2.08, minimum = 11; maximum = 17) took part in the study. Of these, 259 were Grade 10 students while 224 attended Grade 6. Of the participants, 285 were female and 198 were male.

### **3. 4. Instruments and procedures for data collection and analysis**

A background questionnaire was added to the Turkish version of MALS, through which demographic data and students' first term marks in Turkish, Math and English courses as measures of first term school achievement were collected. A total of 980 instruments were sent out to 17 schools in six cities, where they were administered by the class teacher. 640 instruments were returned, with a return rate of a satisfactory 65.3%. Students with missing data with regards to MALS items were excluded from the study. Further, a closer care check based on two items embedded in the instrument made it necessary to exclude some more participants as they failed to comply with the two antonymous questions and thus were not usable for research purposes, thereby leaving a total of 483 participants for the second phase of the statistical analysis.

Data were initially checked for normality assumptions for parametric tests. Both Kolmogorov-Smirnov ( $p < .119$ ) and normal Q-Q plot indicated a normal distribution within the data, fitting neatly into a normal distribution.

The Turkish version of MALS was checked for construct validity through an exploratory factor analysis, results of which were then compared to the structure of the original instrument. A factor structure yielded by the exploratory factor analysis was also tested through a confirmatory factor analysis procures on AMOS/SPSS for goodness of fit. The

concurrent (predictive) validity was checked through an analysis of group differences between two contrasting groups of students (top 27% and bottom 27% according to students' first term marks from English, Turkish, and Mathematics courses) through a series of independent samples t-test procedure. Further, a correlational analysis was employed to crosscheck the relationship between MALS scores and course achievements. Reliability of the Turkish version of MALS was examined through internal consistency measures and split-half reliability measures. SPSS 21.0 was employed for analysis purposes.

## 4. Results

### 4.1. Descriptive Findings

A descriptive analysis revealed similar but slightly higher values than reported in the UK standardisation studies (Burden, 1998, 2012). However, the between group nature of the descriptive statistics was congruent with the UK data. As this study involved two distinct age groups, descriptive data are presented separately below in Table 1.

*Table 1*  
*Descriptive statistics*

Class	Gender	N	Age	SD	MALS	SD
Grade 6	Female	137	12.17	.480	76.53	12.17
	Male	87	12.11	.515	74.57	12.11
	Total	224	12.15	.494	75.77	10.63
Grade 10	Female	148	16.13	.472	70.47	9.05
	Male	111	16.24	.677	69.93	9.12
	Total	259	16.18	.571	70.30	9.07
TOTAL	Female	285	14.23	2.03	73.38	10.46
	Male	198	14.43	2.14	71.97	9.77
	Total	483	14.31	2.08	72.84	10.20

Participants in this study reported a mean MALS score of 72.84 (SD = 10.20). This was slightly higher than what was reported in the UK standardisation (Burden, 1998, 2012) that was found to be 71.0 (SD = 10.05). There appeared to be some discernible group differences as congruent with the original scale (Burden, 1998, 2012). There was a clear age effect (Grade 6, mean = 75.77, SD = 10.63; Grade 10, mean = 70.30, SD = 9.06) on MALS scores, which reached significance level ( $t_{(481)} = -6.12; p < .05$ ) also yielding a large effect size  $d = .56$  and  $r = .27$ . This was in keeping with what was observed in the UK, where younger learners tended to report better perceptions of academic self-concept (Burden, 2012). Further, although some degree of gender difference was found in both class groups, with females (Grade 6 mean = 76.53; Grade 10 mean = 70.47) having slightly higher MALS scores than males (Grade 6 mean = 74.57; Grade 10 mean = 70.24), this difference did not carry any statistical significance in either groups ( $t_{(222)} = 1.345, p > .05$ ;  $t_{(257)} = .311, p > .05$  respectively), which was also the case in the UK studies (Burden, 1998, 2012).

### 4.2. Construct Validity

Construct validity of the Turkish version of MALS was initially tested through an exploratory factor analysis (EFA) procedure. Factors were extracted using an exploratory principle component analysis. Kaiser-Meyer-Olkin Measure of Sampling Adequacy was found to be .83, indicating almost a perfect adequacy of scale items for Factor Analysis (Barlett's Chi square = 2105;  $p < .01$  with suitable variance). Varimax rotation extracted 5 factors

(eigenvalues > 1) that explained a 50.96% of the total variance in MALS scores. Table 2 shows factor loadings and variance explained by each factor while Figure 1 illustrates the screeplot.

Table 2  
Rotated Component Matrix

Items	Factors				
	1	2	3	4	5
Item 2: I like having problems to solve.	<b>.754</b>	.030	.049	.111	.065
Item 9: Problem solving is fun.	<b>.750</b>	.025	.085	.122	.021
Item 12: I am not very good at solving problems.*	<b>.667</b>	.156	.083	-.105	.310
Item 7: I like having difficult work to do.	<b>.502</b>	.071	.143	.064	-.150
Item 17: I am clever.	.008	<b>.778</b>	.027	-.050	.192
Item 19: I like using my brain.	.050	<b>.671</b>	-.037	.318	-.002
Item 18: I know how to be a good learner.	.046	<b>.583</b>	.256	.207	-.192
Item 5: I am good at discussing things.	.144	<b>.419</b>	.190	.233	.129
Item 1: I am good at doing tests.	.283	<b>.403</b>	.278	-.076	.377
Item 15: I know how to solve the problems that I meet.	.237	<b>.353</b>	.308	.275	.175
Item 20: Learning is difficult.*	.138	.062	<b>.865</b>	.090	.143
Item 11: Learning is easy.	.181	.226	<b>.827</b>	.029	.084
Item 4: I think carefully about what I have got to do.	.260	.030	.003	<b>.630</b>	.021
Item 14: Thinking carefully about work helps you to do better.	-.007	.297	.066	<b>.625</b>	.175
Item 13: I know the meaning of lots of words.	-.102	.269	-.004	<b>.486</b>	.049
Item 3: When I am given a new work to do I usually feel confident I can do it.	.414	.215	.182	<b>.453</b>	.183
Item 10: When stuck with my work I can usually work out what to do next.	.407	-.126	.219	<b>.450</b>	.007
Item 6: I need lots of help with my work.*	.063	.133	-.057	.031	<b>.760</b>
Item 8: I get anxious when I have to do new work.*	-.155	-.049	.205	.318	<b>.605</b>
Item 16: I find a lot of school work difficult.*	.160	.046	.315	.105	<b>.467</b>
Eigenvalues	4.702	1.814	1.395	1.193	1.090
Variance explained	12.549	10.954	9.874	9.385	8.204
Total variance	50.966				

\* Reversed items

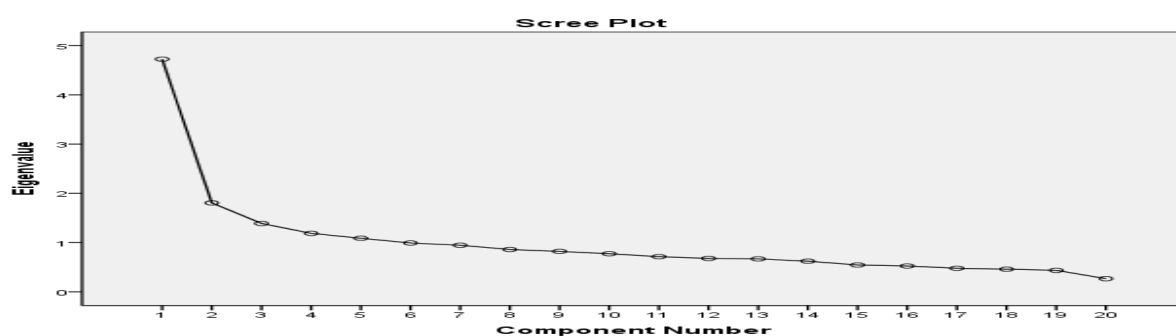


Figure 1. The screeplot of factor loadings

These findings are slightly different from those obtained in the original UK standardisation of MALS, where 3 main factors were identified (Burden, 2012). In the Turkish version, items appear to have loaded on five main factors. In seeking to identify labels for these factors in line with the original MALS factors, the following would seem to be appropriate:

Factor 1: *Enjoyment and involvement in learning and problem solving.*

Factor 2: *Sense of agency.*

Factor 3: *Feelings about the nature of learning.*

Factor 4: *General feelings of competence/ability.*

Factor 5: *Feelings of learned helplessness and anxiety.*

Factor 1 included items related to the joy of learning along with a confidence item, therefore labelled as *Enjoyment in learning and problem solving*, while items in Factor 2 on the other hand involved being in charge and capable of learning, thereby reflecting a sense of agency, so was labelled as *Sense of agency*. Factor 3 described perceptions of ease or difficulty in learning and was thus called *Feelings about nature of learning*. Items in Factor 4 consisted of items reflecting being competent and were named *General feeling of competence/ability*. Items in Factor 5 clearly reflected being less able and anxious about learning so was labelled *Feelings of learned helplessness and anxiety*.

A closer examination of the match between factor loadings in the original MALS study and those in this study reveals that the largest factor (Factor 1) reported by Burden (2012) that denotes a *sense of agency: learned optimism* appeared to have broken into three different but thematically related factors in the current study. All the items included in the original Factor 1 were neatly distributed to Factor 2: *Sense of agency*; Factor 3: *Feelings about the nature of learning*; and Factor 4: *General feelings of competence/ability*, which collectively represented a sense of *learned optimism*. The only exception was Item 20 (learning is difficult), which originally loaded with items of *learned helplessness* (Burden, 2012). In this study, however, it loaded together with Item 11 (Learning is easy) and formed Factor 3: *Feelings about the nature of learning*.

A confirmatory factor analysis based on the data from MALS in this study revealed that goodness of fit indices for the factors produced in the exploratory factor analysis are within acceptable limits. Maximum likelihood estimation was employed to estimate goodness of fit for the model. The chi-square test came to be significant,  $\chi^2(156, N=483) = 361.00, p < 0.1$ . The  $\chi^2/df$  was 2.31. The GFI (goodness-of-fit index), CFI (comparative fit index) and RMSEA (root mean square error of approximation) values were 0.93, 0.91 and 0.05, respectively. These findings indicate that the 5-factor model of MALS had acceptable goodness of fit indices. Figure 2 illustrates significant coefficients in the standardized form.

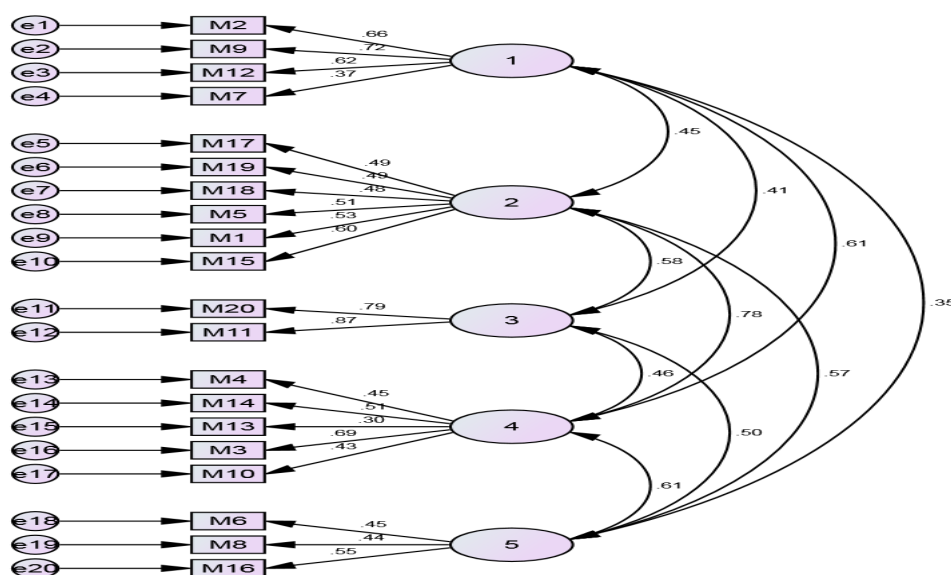


Figure 2. Significant correlations



### 4. 3. Concurrent validity

To explore the concurrent validity of the instrument, a contrasting group analysis and a correlational analysis were conducted. Initially, three contrasting group analyses were performed on MALS scores between the top 27% and bottom 27% of students who were grouped according to their end of the first term marks from English, Turkish, and Mathematics courses. With regard to the English course, the top group reported clearly higher MALS scores ( $n = 130$ ; mean = 77.50, SD = 11.20) than the bottom group in ( $n = 117$ ; mean = 69.49, SD = 10.07) resulting in a highly significant difference ( $t_{(245)} = 5.885$ ,  $p < .01$ ) with a large effect size (Cohen's  $d = .75$ ;  $r = .35$ ). A very similar result was found concerning Turkish where the top group ( $n = 151$ , mean = 76.54, SD = 10.98) had a higher MALS scores than the bottom group ( $n = 130$ ; mean = 68.67, SD = 9.26;  $t_{(279)} = 6.434$ ;  $p < .01$ ), also indicating a large effect size (Cohen's  $d = .67$ ;  $r = .32$ ). In the same line, the grouping of participants according to their Mathematics course mark also yielded a significant difference ( $t_{(225)} = 5.603$ ,  $p < .01$ ) and a large effect size (Cohen's  $d = .73$ ;  $r = .34$ ), whereby the upper group ( $n = 106$ ; mean = 77.86, SD = 11.47) reported clearly higher MALS scores than the lower group ( $n = 121$ ; mean = 70.27, SD = 8.91).

Secondly, a comparison was made of MALS scores across school year groups of students. An independent samples t-test showed that in this study Year 6 students ( $n = 224$ ; mean = 75.77, SD = 11.63) reported significantly higher total MALS scores than their Year 10 peers did ( $n = 260$ ; mean = 70.22, SD = 9.05). The difference between the two groups was significant ( $t_{(482)} = 6.194$ ,  $p = .000$ ), yielding a large effect size (Cohen's  $d = .53$ ;  $r = .25$ ).

As another indicator of concurrent validity, the relationship between students' first term cumulative marks in Turkish, Mathematics, and English courses and their MALS scores was assessed. Pearson correlation coefficients showed statistically significant correlations of moderate size between MALS scores and their first term marks, the strongest relationship being with English marks ( $r_{(429)} = .357$ ,  $p < .01$ ) followed by Turkish marks ( $r_{(422)} = .337$ ,  $p < .01$ ), and Mathematics marks ( $r_{(392)} = .301$ ,  $p < .01$ ).

### 4. 4. Reliability Analysis

The reliability of the Turkish version of MALS was initially checked by means of Cronbach's Alpha Internal Consistency Procedure which revealed that the instrument had high internal consistency ( $\alpha = .82$ ,  $n = 483$ ), with no item exhibiting a very low item-total correlation coefficient and/or jeopardising the alpha coefficient of the scale. Table 3 shows item-total statistics.

Table 3  
Item-total statistics

	Scale Mean	ifScale Variance	ifCorrected	Item-Cronbach's Alpha
	Item Deleted	Item Deleted	Total Correlation	if Item Deleted
Item 1	69.33	94.327	.468	.806
Item 2	69.18	93.201	.413	.809
Item 3	68.98	91.432	.572	.800
Item 4	68.45	97.279	.346	.812
Item 5	69.04	94.582	.412	.809
Item 6	69.53	96.254	.272	.817
Item 7	70.33	95.806	.263	.818
Item 8	69.67	96.345	.258	.818
Item 9	69.26	92.656	.409	.809
Item 10	69.21	95.634	.365	.811
Item 11	69.15	90.947	.530	.802

Item 12	69.38	93.002	.442	.807
Item 13	68.90	98.006	.232	.818
Item 14	68.74	96.249	.399	.810
Item 15	69.21	93.860	.503	.805
Item 16	69.57	93.479	.387	.810
Item 17	68.90	96.345	.335	.813
Item 18	68.64	96.541	.349	.812
Item 19	68.42	97.743	.369	.812
Item 20	69.19	89.903	.492	.804

The scale reliability was also checked through a Split Half reliability method which revealed that when the instrument was divided into two equal parts, both parts a) still retained internal consistency (Part 1, the first 10 items, mean = 34.96, SD= 5.995; alpha= .686; Part 2, the second 10 items, mean = 37.83, SD= 5.901, alpha=.728); and b) correlated highly with each other ( $r^2 = .631$ ). Spearman-Brown equal length and Guttman split half coefficients were found to be  $r^2 = .774$ . The total mean for the whole instrument was 72.79 (SD=10.19).

## 5. Discussion and Conclusion

This study aimed to introduce the Myself-As-a-Learner-Scale (Burden, 1998), which purports to measure the academic self-concept of learners, as a part of their multifaceted general self-concept (Marsh, 1990; Marsh & Martin, 2011), and verify its Turkish translation through a series of validity and reliability tests. The data were collected from a diverse range of educational contexts in various cities spread across Turkey to better represent the population. The results obtained in this study show remarkable consistency with those previously obtained in the UK. High synonymy levels achieved between English and Turkish versions demonstrate that the Myself-As-a-Learner-Scale (MALS) translates readily from English into Turkish. It can be safe to argue, therefore, that the original content validity established in MALS has been retained in the Turkish version.

The analysis also shows that the Turkish version of MALS, like its original version in English, exhibits robust qualities of validity and reliability. Construct validity was examined through a Factor Analysis on the responses of a substantial number of Turkish school students, which reveals five main factors accounting for half of the variance. Although the number of factors appeared to have increased in this study, they are still in line with previous research findings (Burden, 1998, 2000, 2012). Items that fell under the three factors reported by Burden (2012) appeared to hold neatly together. However, Factor 1 identified in the original study did seem to generate three sub-factors with inherently related properties, all highlighting a sense of agency. A word of caution here is that MALS was not designed to comprise multiple diverse constructs but was designed as a one-dimensional holistic instrument. Therefore, different factors that emerged in this study should not interfere with its construct value. Factors identified in this study indicate that enjoyment and involvement in learning and problem solving make a significant contribution to academic self-concept, as also does a sense of agency in knowing how to perform under pressure and confidence in one's ability to do so. Considerations about the nature of learning also have a part to play, but all this can be offset by feelings of anxiety or 'learned helplessness'.

This study appeared to suggest a five-factor model inherent in participants' academic self-concept. Goodness of fit of such a model was tested through the confirmatory factor analysis. Types of goodness-of-fit indices that are often referred to are chi-square test, goodness-of-fit index (GFI), comparative fit index (CFI) and root mean square error of approximation (RMSEA). However, Chi-Square ( $\chi^2$ ) index is not so reliable in interpreting the results since it is too sensitive to the sample sizes larger than 200. Researchers, therefore, often use

normalized chi square (NC) or  $\chi^2/df$  (Schumacker & Lomax, 2004). Regarding GFI and CFI, values above .90 are generally considered as indicative of good fit (Hu & Bentler, 1999). As for RMSEA, values smaller than .08 is acceptable and the lower is the better index of goodness of fit for the model (Byrne, 2001; Hair et al., 2006). The results indicated that the five-factor model displays acceptable levels of goodness of fit.

Academic self-concept has been shown in many studies to be related to academic achievement (Marsh & Martin, 2011). More specifically, previous research has demonstrated significant correlations of a moderate effect size between MALS scores and success in various school subjects (see Burden, 2012). MALS has been found to function well within experimental studies with an acceptable predictive validity as a measure of intervention effectiveness (Armstrong & Humphrey, 2009; Burke & Williams, 2008; Chalk & Bizo, 2004; Dewey & Bento, 2009; Eaton & Bell, 2006; Kaufman & Burden, 2004; Roberts & Norwich, 2010; Trickey, 2007; Trickey & Topping, 2006; Topping, Campbell, Douglas, & Smith, 2003). In this study, too, MALS appeared to have a direct relationship with participants' first term achievement in several school subjects. This shows that there is likely to be a reciprocal relationship between MALS and school achievement. The nature of correlations makes it impossible to infer cause or effect from such findings (Marsh, 1990; Marsh & Martin, 2011), however, it seems highly likely that the relationship is reflexive, with academic success or failure contributing to academic self-concept and vice-versa in an ongoing manner (see Williams & Burden, 1997 for review of motivational factors).

The literature reports younger learners having more positive self-perceptions and higher motivation and, through maturation, older learners develop to become more critical of themselves thereby yielding lower scores (Burden, 1998, 2012; Cain & Bracken, 1994). Therefore, the slight fall observed in MALS scores as students grow is explicable in terms of the growing ability to reflect accurately on one's learning capabilities as one enters adolescence (Burden, 2012). It also reinforces the point that self-concept differs from self-esteem in that it represents the nature of a person's self-reflections rather than how they may be feeling at any one particular time.

In the present study, MALS emerged as having a discriminating property as a measure. Contrasting group analysis expectedly confirms that lower achieving and higher achieving students do tend to have differing levels of academic self-concept. This was true in all courses that were taken into account in this study. Further, there was a within measure variability between top 27% and bottom 27% of students in terms of their MALS scores, all indicating a working instrument to measure learners' self-concept as learners.

As for the reliability properties of MALS, it can be said that the Turkish version of the scale has a matching level of internal consistency as what has been reported for the original (Burden, 1998, 2012). This study did not however employ a test-retest reliability procedure. A split-half reliability procedure was used which revealed a very high level of correlation between the two parts (Pallant, 2010). Therefore, we find it reasonable to assume that both versions of the scale have truly acceptable levels of reliability.

The overall conclusion that can be drawn with some confidence from this data and its analysis is that the Turkish version of MALS meets a number of necessary criteria for use in Turkish schools. MALS surely offers a simple and straightforward way of examining how any individual or group of students perceive themselves to be functioning academically by means of expressing their self-concept as a learner. By extending their assessment portfolios to

include measures of this kind, which go beyond measures of ability and attainment, to consider wider aspects of the whole child, schools can strengthen their learning policies, particularly with regard to assessment for learning. Further, MALS can be instrumental in a number of different ways in experimental endeavours of Turkish researchers in their efforts to better understand cause and effect chains of innovations and their implementations in educational contexts.

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## Appendix

### Öğrenci Olarak Ben Ölçeği (Myself-as-A-Learner Scale)

1. Sınavlarda başarılıyım.
2. Çözülecek problemler verilmesinden hoşlanırım.
3. Yeni bir çalışma konusu verildiğinde, genellikle onu yapabileceğime dair kendime güven duyarım.
4. Yapılacak işle ilgili dikkatlice düşünmek onu daha iyi yapmamıza yardımcı olur.
5. Kendimi ifade etmede başarılıyım.
6. Çalışmalarımnda genelde çok yardıma ihtiyaç duyarım.
7. Zor ödevler verilmesinden hoşlanırım.
8. Yeni bir çalışma yapacağım zaman kaygı duyarım.
9. Problem çözmenin eğlenceli olduğunu düşünüyorum.
10. Yaptığım çalışmada sıkışırsam genellikle bir sonraki aşamada ne yapmam gerektiğini bulabilirim.
11. Öğrenmek kolaydır.
12. Problem çözmede başarılı değilim.
13. Türkçe birçok sözcüğün anlamını biliyorum.
14. Genellikle ne yapmam gerektiğini dikkatlice düşünürüm.
15. Karşılaştığım problemleri nasıl çözeceğimi biliyorum.
16. Ödevlerin birçoğu bana zor geliyor.
17. Zekiyim.
18. Nasıl iyi bir öğrenci olabileceğimi biliyorum.
19. Aklımı kullanmaktan hoşlanıyorum.
20. Öğrenmek zordur.