



Competence of Low-High Academic Control Focus and Its Place in Academic Success

Şükrü Ada¹

¹Uludağ University, Bursa, Turkey

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ABSTRACT

The main purpose of the study is the role of internal and external academic control focus on the success of prospective teachers. The study, which was designed to determine the role of academic control focus in general academic success (GPA) and competence, was carried out with 180 pre-service teachers, 44 of which are male and 136 are female. In order to make the focus of internal and external academic control categorically low and high, the median values are divided into two, and low and high internal and external academic control focus groups are obtained. Correlation analysis to examine the relationship between variables, t-test to determine whether GPA and competency variables differ from low and high internal and external academic control focus groups, to determine whether the t-test, GPA and competency variables predict low and high internal and external academic control focus groups. Binomial Logistic Regression analysis was performed. As a result of the analysis, it is seen that the external academic control focus has a negative relationship with GPA and competence, and the internal academic control focus has a positive relation with competence. According to the results of the t-test, GPA and competency were higher in the external academic control focus groups, while competence was higher in the internal academic control focus group. According to the results of the Binomial Logistic Regression analysis, it was seen that competence predicted both internal (towards high group) and external (towards low group) academic control focus, while GPA did not predict both internal and external academic control focus groups. It is seen that being in the low and high internal and external academic control focus group in the research results, the pre-service teachers differed in their belief in success and their academic success.

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Keywords:

Academic Locus of Control, Self-efficacy, GPA

1. Introduction

Some of the most important determinants of our success in academic life are our references to the source about the events that happened to me as much as our belief in our ability. The concept of locus of control has been defined by Rotter (1966) as a personality trait that expresses the responsibility of individuals, whether they are responsible for the good or bad situations and events they encounter in their daily lives. In the inner dimension of the locus of control, which has two dimensions, internal and external, people tend to blame others or luck and fate for the results they encounter in the external locus of control, while believing that they are responsible for the consequences such as success or failure. (Yeşilyaprak, 2004; Şeker, Yavuzer, 2017).

¹ Corresponding author's address: Department of Educational Sciences, Faculty of Education, Uludağ University, 16059 Bursa, Turkey

Telephone: +90-532-402-1220

e-mail: sukruada@uludag.edu.tr

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The Academic Check Focus gives a general idea of students' academic expectations and uploads. Academic internal control focus is the students' beliefs that their academic success or failure arises from their own behavior or personality traits (Akin, 2007).

Academic external control focus is the success or failure of the students; their beliefs that they are caused by factors (such as luck, difficulty of task) outside their control.

When the literature on academic control focuses of teachers and prospective teachers is examined, gender differences (Wehmeyer, 1993; Sarıcam, Duran, & Çardak, 2012), equality of education opportunity (Coleman, 1966), coping strategies and emotional well-being (Elfström and Kreuter, 2006), academic achievement (Hsieh and Dwyer, 2009), and problem-solving skills (Yalçın, Tetik and Açıkgöz, 2010; Şara, 2012).

Self-efficacy, one of the concepts of Social Learning Theory and brought to the field by Bandura (1997); It is defined as a quality that is effective in the formation of behaviors and the individual's own judgment about the capacity to organize and successfully perform activities necessary to perform a certain performance (Zimmerman, 1995; Bandura, 1997). Self-efficacy can also be defined as a product of individuals' judgments about what they can do using their skills, not as a function of their skills (Gürcan, 2005). Studies conducted by Bandura show that the person's perceptions about their skills are not limited to their behaviors, but also their motivation and success (Saracaloğlu, Yenice, Özden, 2013).

Teachers' self-efficacy beliefs and teacher self-efficacy (Friedman & Kass, 2002), interpersonal relationship competence and burnout in teaching (Friedman, 2003), self-concept and academic performance (Choi, 2005), classroom management (Ekici, 2008), academic motivation (Saracaloğlu & Dinçer, 2009), self-efficacy belief (Taşkın & Hacıömeroğlu, 2010) and professional self-efficacy belief (Güvenç, 2011).

In this study, it was determined as the main aim to investigate the role of internal and external academic control focus on the success and competencies of teacher candidates.

2. Method

2.1. Participants

The study group consists of 180 students at Muğla Sıtkı Koçman University. 44 of the participants are men (24.4%) and 136 are women (75.6%). The ages of the participants vary between 17 and 29 and the average age is 20.5 (SS: 1.64).

2.2. Scales

General Academic Grade Averages (GANO) were used to determine the academic success of university students, Academic Control Focus Scale was used to determine academic control foci, and Self-Efficacy Scale was used to determine their competencies.

2.2.1. Academic Locus of Control Scale (ALCS): The scale developed by Akin (2007) is a 5-point Likert type and consists of 17 items and 2 sub-dimensions. The answers to the items in the scale are arranged as strictly disagree (1), disagree (2), indecisive (3), agree (4) and strongly agree (5). It was stated that as the scores obtained from the internal and external sub-dimensions of the SPS increase, the student has a high level of characteristics related to the relevant dimension. Exploratory and confirmatory factor analyzes were conducted to determine the factor structure of the scale and it was observed that the scale items were collected in two factors. The internal consistency reliability coefficients for the sub-dimensions of the scale were found to be .94 for the academic internal control focus and .95 for the academic external control focus.

2.2.2. Self-efficacy Scale (SeS): It was developed by Schwarzer and Jerusalem (1995) and adapted to Turkish by Yeşilay (1996). The high scores obtained from the items of the scale containing 10 items indicate that the self-efficacy perception is high. As a result of the factor analysis conducted for the validity of the scale, the factor loads of the scale vary between 0.63 and 0.76. Cronbach Alpha reliability values obtained in various studies varying between 0.94 and 0.75 increase the reliability of the scale.

2.3. Data Analysis

Pearson moments correlation coefficient was calculated to determine the relationship between internal academic control locus, external academic locus of control, competence and GANO variables. In order to determine whether the competency and GANO variables change according to the levels of the students' internal-external academic control focus, t-test was performed. In order to determine the magnitude of the possible significant difference in the t-test, cohen's d value was calculated. In order to understand whether GPA and competency predict low-high internal-external academic control focus, Binomial Logistic Regression analysis was performed. In order to determine the cutoff scores of the internal-external academic control locus, the median value of both variables was calculated and the median of the external control locus was found 27, and the score below 27 was considered as low and above. The median of internal control locus was found 26 and below 27 points was considered as low above high. Jamovi (2019) program was used for data analysis. Jamovi is a free program that uses R (2018) packages that have determined the philosophy of open science. Jamovi program "car: Companion to Applied Regression" (Fox and Weisberg, 2018) and "MASS: Support Functions and Datasets for Venables and Ripley's MASS" (Ripley, Venables, Bates, Hornik, Gebhardt and Firth, 2018) were used in the analyzes.

3. Results

3.1. Descriptive statistics

Descriptive statistics of internal academic control locus, external academic locus of control, competence and GANO variables were calculated. Analysis results are given in table 1.

Table 1. Descriptive statistics

	Group	Internal Academic Locus of Control		External Academic Locus of Control	
		GPA	Self-Efficacy	GPA	Self-Efficacy
Mean	Low	2.43	27.30	2.57	29.10
	High	2.56	29.7	2.37	27.3
Median	Low	2.49	27.0	2.60	29.0
	High	2.59	30.0	2.43	27.0
Mode	Low	2.50	27.0	2.50	32.0
	High	2.50	32.0	2.50	26.0
Standard deviation	Low	0.60	4.56	0.55	5.43
	High	0.61	5.79	0.66	4.84
Skewness	Low	-0.09	0.19	-0.20	-0.21
	High	-0.22	-0.39	0.05	0.22
Std. error skewness	Low	0.24	0.24	0.25	0.24
	High	0.28	0.27	0.28	0.27
Kurtosis	Low	-0.52	-0.11	-0.20	0.34
	High	0.02	0.28	-0.41	-0.28
Std. error kurtosis	Low	0.48	0.47	0.49	0.48
	High	0.56	0.54	0.55	0.54
Shapiro-Wilk	Low	0.68	0.38	0.46	0.31
	High	0.49	0.21	0.89	0.27

When Table 1 is analyzed, the average, median and peak values are close to each other in both the high and low groups of internal academic control locus of GPA; Similarly, it is seen that the competence variable is close to average, median and peak values. This can be accepted as evidence that the variables show normal distribution. In addition, when looking at the Shapiro-Wilk value, which is one of the normality indicators, it is seen that there is a normal distribution in the low and high groups in both internal control and external control focus scores. When the significance tests of the normal distribution are decided, it is stated that the small differences between the observed and expected distributions, as the sample size increases, tend to be significant, and should be used in conjunction with graphical or descriptive methods (Çokluk. Et al. 2010; Hair. Et al. 1998; Sprent and Smeeton 2007). Based on this view, the histograms of the variables are drawn with the Jamovi program and are given in figure 1.

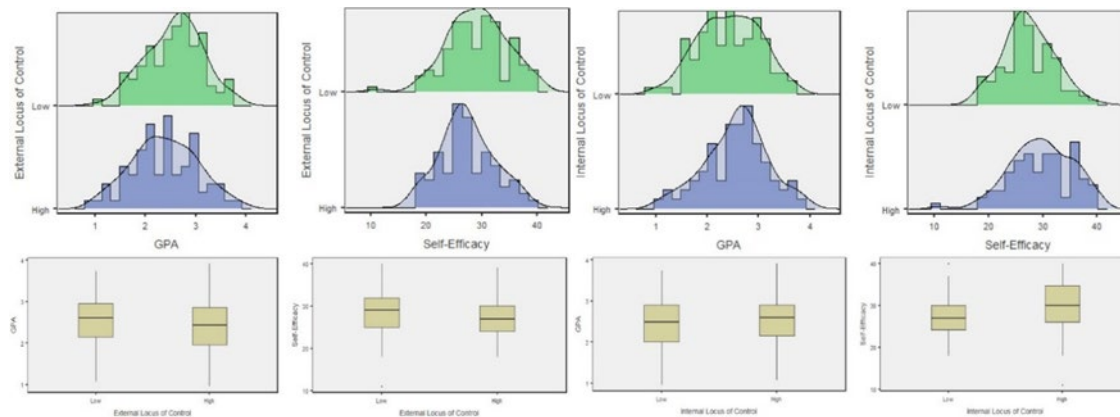


Figure 1. High-Low Internal-external academic control focus competence and histograms and boxplots of GANO variables

When the histograms in Figure 1 are examined, it is seen that the low external academic control focus is skewed from the left in the GPA, while other variables and groups show normal distribution. When the histograms of the competency variable are analyzed, it can be seen that the external academic control focus is in competence, and the internal academic control focus is gathered at average close values where the GPA is sharp. When the boxplots are examined, it is seen that all the boxplots are close to average, and the high group of competent internal academic control focus is above average. Based on these data, we assume that all variables are normally distributed.

3.2. Relationship Between Variables

In this part of the study, the relationship between competence and GANO variables was tried to be determined in the focus of internal-external academic control. Correlation values of competence and GANO variables in the internal-external academic control focus are given in table 2.

Table 2. Relationship between competence and GANO variables in internal-external academic control focus

			Pearson's r	p	Lower 95% CI	Upper 95% CI
GPA	-	EALC	-0.198 **	0.009	-0.338	-0.050
GPA	-	IALC	0.125	0.103	-0.025	0.270
GPA	-	Self-Efficacy	0.070	0.361	-0.081	0.218
EALC	-	IALC	-0.204 **	0.006	-0.340	-0.060
EALC	-	Self-Efficacy	-0.185 *	0.013	-0.323	-0.040
IALC	-	Self-Efficacy	0.255 ***	<.001	0.113	0.387

* $p < .05$, ** $p < .01$, *** $p < .001$, GPA= Grade Point Average, EALC= External Academic Locus of Control, IALC= Internal Academic Locus of Control

When Table 2 is analyzed, negative and significant between GPA and EALC ($r = -0.198$, $P < 0.05$), EALC and IALC ($r = -0.204$, $P < 0.01$), EALC and self-efficacy ($r = -0.185$, $P < 0.05$) It is seen that there is a positive and significant relationship between IALC and self-efficacy ($r = 0.255$, $P < 0.001$). There is no significant relationship between GPA and IALC ($r = 0.125$, $P < 0.05$) and GPA and self-efficacy ($r = 0.070$, $P < 0.05$).

3.3. t-test Results

At this stage of the study, a t-test was performed to determine whether the Competency and GANO variables differed by high-low internal-external academic control focus groups. The averages of the groups were first examined to determine whether they differ from competence and GPA high-low internal-external academic control focus groups. Values for the averages are given in Table 3.

Table 3. Estimated Marginal Means

	Group	N	Mean	Median	SD	SE	
EALC	GPA	Low	96	2.57	2.60	0.55	0.06
		High	75	2.37	2.43	0.66	0.08
	Self-Efficacy	Low	96	29.17	29.00	5.45	0.56
		High	75	26.98	27.00	4.70	0.54
IALC	GPA	Low	98	2.43	2.49	0.60	0.06
		High	73	2.56	2.59	0.61	0.07
	Self-Efficacy	Low	98	27.21	27.00	4.50	0.45
		High	73	29.54	29.00	5.86	0.69

EALC= External Academic Locus of Control, IALC= Internal Academic Locus of Control

Looking at Table 3, it is seen that GPA's average of EALC low group is 2.57, average of low group is 2.37, competency is average of EALC low group is 29.17 and average of high group is 26.98. GPA's IALC low group's mean is 2.43, low group's average is 2.56, competency's IALC's low group's average is 27.21, high group's average is 29.54. When Table 3 is examined, it is seen that there is a difference between the averages in terms of both variables. The results of the t-test to understand whether the differences are meaningful are given in table 4.

Table 4. t-test results regarding whether GPA and competence change according to low and high intrinsic-external academic control focus level.

		Statistic	df	p	Mean difference	SE difference	95% CI Lower	95% CI Upper	Cohen's d
EALC	GPA	2.13	169	0.03	0.20	0.09	0.01	0.80	0.33
	Self-Efficacy	2.76	169	0.01	2.19	0.79	0.62	3.75	0.43
IALC	GPA	-1.40	169	0.16	-0.13	0.09	-0.32	0.05	-0.22
	Self-Efficacy	-2.94	169	0.00	-2.33	0.79	-3.89	-0.76	-0.45

EALC= External Academic Locus of Control, IALC= Internal Academic Locus of Control, CI= Confidence Interval

When GPA is examined in Table 4, it is seen that it differs between low EALC group and high EALC group in favor of low EALC ($t = 2.13$, $p < 0.05$) and it is understood that the difference is moderate by cohen's d value ($d = .33$). It is understood with the cohen's d value that the competence is higher in the low EALC group compared to the high EALC group and this difference is statistically significant ($t = 2.76$, $p < 0.05$) ($d = .43$). When GPA is examined in terms of IALC variable, there is no statistically difference between high IALC group and low EALC group ($t = -1.40$, $p > .05$). It is understood with the cohen's d value that the competence is higher in the high IALC group compared to the low EALC group and this difference is statistically significant ($t = -2.94$, p

<.05) ($d = .45$). The difference between the low and high intrinsic-exogenous academic control focus groups of GPA and competency variables is given in Figure 2.

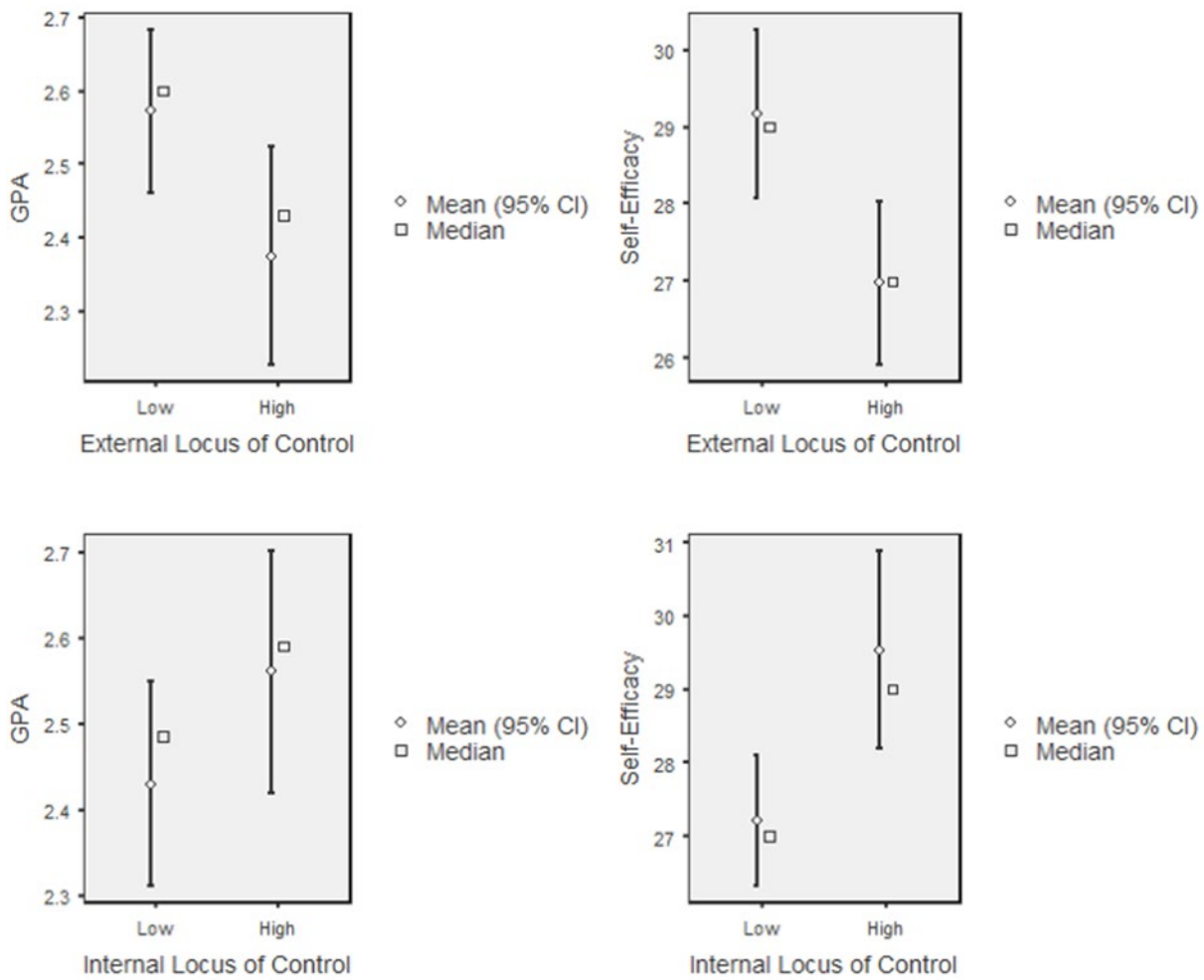


Figure 2. Graph of the change of GPA and competency scores according to low and high internal-external academic control focus groups.

In Figure 2, there is a visualized form of the t-test results. EALC low group has higher GPA and competency scores than high group. In other words, those in the low EALC group have both high GPA and high competency scores. In terms of IALC, the competencies in the high IALC group are higher than in the high IALC group. However, there is no difference in terms of low and high IALC in terms of GPA.

3.3. Binomial Logistic Regression

Binomial Logistic Regression analysis was performed to determine whether GPA and competency predict low-high internal-external academic control focus. The results for the Binomial Logistic Regression analysis are given in table 5.

Table 5. Model Coefficients – External-Internal Locus of Control

	Predictor	Estimate	SE	Z	p	Odds ratio	95% CI Lower	95% CI Upper
EALC	Intercept	385.758	-308.263	2.98	0.003	26.995	3.092	235.715
	GPA	0-.5153	0.268	-1.92	0.055	0.597	0.353	1.010
	Self-Efficacy	-0.081	0.032	-2.54	0.011	0.923	0.867	0.982
	Model X ²	11.4	P<.05					
	R ² McF	0.0485						
IALC	Intercept	-3.6269	1.1384	-3.19	0.001	0.0266	0.0029	0.2480
	GPA	0.3327	0.2683	1.24	0.215	1.3948	0.8244	2.3600
	Self-Efficacy	0.0881	0.0320	2.75	0.006	1.0921	1.0257	1.1630
	Model X ²	10.1	P<.05					
	R ² McF	0.0432						

EALC= External Academic Locus of Control, IALC= Internal Academic Locus of Control, CI= Confidence Interval

When Table 5 is examined, low group is taken as reference in our dependent variable, high and low EALC, as well as high and low IALC. When EALC is examined, it creates a significant difference between low and high EALC groups in terms of competency and the probability of falling to low EALC group increases 0.923 times as competence increases ($p < .05$). However, it is seen that GPA cannot predict low-high EALC (Odds = 0.597, $p > .05$). When the IALC is examined, it makes a significant difference between the low and high EALC groups in terms of competence, and as the competence increases, the probability of falling into the high EALC group increases 1.0921 times ($p < .05$). However, as in EALC, it is seen that GPA cannot predict low-high IALC (Odds = 1.3948, $p > .05$).

4. Discussion

The main purpose of this study was to examine the role of internal and external academic control focus on the success of teacher candidates. Looking at the results of the research conducted to determine the role of academic control focus in general academic achievement (GPA) and competence, it was found that pre-service teachers' GPA's were higher in the low academic control focus than in the lower group. In other words, prospective teachers decrease their grades as they search for the source of the events that happen to them academically, but if they decrease this trend, their grades increase. But the same cannot be said for the focus of internal academic control. Considering the research findings in terms of competency, it gives similar results in both internal and external academic control groups. These results coincide with the findings of Duke and Nowicki (1974), who suggested that there was a positive relationship between the focus of internal control and academic achievement. In addition, academic self-efficacy is effective in achieving students' grade targets directly and indirectly. Prospective teachers are in the high competence group when they search for the source of the events that happen to them academically, and they are in the low competence group when they look for the source of the events that happen academically. This result is also seen in Binomial Logistic Regression analysis. As Bandura (1995) mentioned about the effects of perceived self-efficacy on perseverance, it can be assumed that students who have a high sense of competence in realizing a responsibility will work more than low ones. This emphasizes the importance of internal academic control and self-efficacy for students.

The limitation of the research is that it has been carried out with a limited number of students, so it may be suggested that researchers carry out this study with a larger number of prospective teachers.

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