



The impact of artificial wall climbing as a recreational activity on children's locus of control¹

Güçlü Özen²
Ahmet Özsoy³
Nuh Osman Yıldız⁴

Abstract

The aim of this research is to determine the effects of artificial wall climbing - which was performed by primary school students- as a recreative activity on children's locus of control. Artificial wall climbing represents itself as a learning point beyond a sportive activity while creating an opportunity for participants to discover the limits of their own and that of others', and opening a path for learning through experience by rendering the participants active rather than passive.

The research was designed as one group pre-test – post-test model. The sample of the study is the same as the study population. 40 (15 female, 25 male) students studying in 7th and 8th grades of primary school attended voluntarily in this study. Climbing practices were determined according to students' free time. Climbing practices were planned to be 90 minutes each. It is organized two days in a week between at least twenty-four hours. The test lasted 6 weeks in total. The activity which started with warm-up exercises suited for the age group was configured as a developmental schema as it started with top rope and extended to lead climbing route again on the climbing routes suited for the age groups. During the practice, it was ensured to provide knowledge and skills for not only climbing skills but also for other topics such as basic knowledge of climbing techniques, basic knots and belaying. The practice lasted six weeks and the questionnaire was applied before and after.

To determine whether participants had a tendency towards externalizing or internalizing bias, "Nowicki-Strickland Locus of Control Scale" was used.

As a result of the statistical analysis, it was observed that there are significant differences between pre-test and the difference of differences regarding the gender discrepancy and between pre-test and post-test scores regarding the total scores ($p < 0.05$).

The group of activities carried out for the artificial wall climbing led to a positive development in the children's perception of locus of control and it was seen that children's beliefs on what's happening around them is under their control and they can turn their lives in whichever direction they want were positively influenced.

Keywords: Control; Locus of control; Learning by experience; Climbing; Artificial wall climbing.

¹ This study was presented as a Oral Presentation at the 15th Sports Science Congress.

² Assist. Prof., Izmir Demokrasi University, Department of Sport Science, guclu1234@yahoo.com

³ Graduate Student, University of Sakarya, Institute of Social Sciences, ahmettozsoy@hotmail.com

⁴ Researcher Assist. Abant Izzet Baysal University, Department of Sport Management, nuhosmanyildiz@gmail.com

Introduction

Locus of control can be defined as “ an individual’s tendency of perceiving the events that effect him/her either good or bad as the results of one’s own abilities, characteristics and behaviours or as the work of luck, fortune or other strong people”. This concept which was originated from Social Learning Theory is about expectations that was developed by individuals regarding what happens in consequence of one’s behaviour (Aksoy and Mağden, 1994).

When the individuals comprehend that their actions are resulted with a negative or positive intensifier, they will form an expectation concerning that the same behaviour will be followed by the same intensifier in the future as well. One might create a generalized intensifier expectation as a result of the intensifier perceiving experiences which he/she went through in all areas of the development process. Depending on that formation, individuals can adopt a general belief relating that the intensifiers are under control of either themselves or the forces other than themselves as well as luck or fate. It was conceptualized that the individuals believe in “the internal” locus of control in the first case and “the external” locus of control in the second case (Dağ, 2002).

People who believe that the events which effect them are generally under their control are being mentioned as internally controlled, and who believe that what happens to them is mostly under control of forces other than themselves are being referred as externally controlled (Dönmez, 1986). In another words, individuals who are closer to the internally controlled edge believe that their environment is under their control and they can shift their lives to any direction if they want to. However, people who are closer to the externally controlled edge believe that they are incapable of influencing the events that are happening around them and fate decides their lives, so they are not able to do anything (Cüceloğlu, 1999).

When this differentiation which is based on the individuals locus of control is considered, it can be said that internally controlled people who give their own efforts importance tend to work to have a better life and to gain self-improvement and to take responsibility, while on the other hand externally controlled individuals are far from having control over their own lives for mainly being in a fatalistic mentality (Çolak, 2006).

It was observed that compared to the externally controlled individuals, the internally controlled individuals are more successful at school and get higher grades, need more independency and desire to search for the information towards problem solving, and have more resistance against social influences (Çolak, 2006).

In this context, problem solving, communication, self-sufficiency etc. When the factors affecting the skills are examined; it is also stated in the literature that outdoor activities such as climbing and camping have a positive effect (Özen and Vatansever, 2016, Yıldız et. al., 2016, Korkmaz et. al., 2017, Whitacre, 2018)

Method

In this research which aims to determine the effects of artificial wall climbing performed by primary school students for recreative purposes on their locus of control, artificial wall climbing emerges as not only a sportive activity but a learning point as well by providing an opportunity to the participants to find out their own and other’s limits and leading them to learn through experience by making the participants become active rather than passive.

One group (Uncontrolled group) pre-test – post-test design was employed for the research. The group of the study is the same as the study population and it was consisted of 40 (15 female, 25 male) primary school students studying in 7th and 8th grades who were selected with convenience or accidental sampling method and attended the research voluntarily. For the study, permission forms which include detailed explanations regarding the research and test procedures were sent to the parents of the children who wanted to attend voluntarily after taking permission from the headmasters and the teachers. Only the children of parents who signed these documents were included in the study.

In order to control different variables in terms of the validity of the study, participants who had no experience of climbing before were included in the study. Climbing practices were determined according to students' free time. Climbing practices were planned to be 90 minutes each. It is organized two days in a week between at least twenty-four hours. The test lasted six weeks in total.

The study started with warm-up exercises that fit the age groups and organized as a developmental schema as it started with top rope and extended to lead climbing route again on the climbing routes suited for the age groups. During the practice, it was ensured to provide knowledge and skills for not only climbing skills but also for other topics such as basic knowledge of climbing techniques, basic knots and belaying. The practice lasted six weeks and the questionnaire was applied before and after.

Content of the test: First week, Basic grip techniques, second week, three point rule and bouldering (side pass), third week, Basic safety and climbing skills fourth week, top-rope (safe from the top) study fifth week, basic moves techniques and dynamic and static moves, sixth week, leader climbing.

When the related literature is examined, it is observed that there is a one-day or a half-day experimental study on attitudes and behavior changes in the field of psychology (Bogner, 2010; Bogner and Sellman, 2013; Drissner et al, 2013; Yildiz et al, 2016). Furthermore, it is supported by studies that adventure-based activities are effective for learning by experience. In this context, it is thought that the duration of the experiment is sufficient.

With purpose of designating whether the students are internally or externally controlled, "Nowicki-Strickland Locus of Control Scale (1973)" which was adapted in Turkish by Yeşilyaprak (1993) was employed.

Nowicki-Sfrickland Locus of Control Scale (1973) is a scale with two options, yes or no. The scale is developed to measure generalized expectations for internal or external control of the consolidation and consists of 40 items. The Turkish validity and reliability study of the scale was performed by Yeşilyaprak (1993). The high score on the average indicates the existence of the external locus of control and the low level of the internal locus of control. The Cronbach's alpha internal consistency coefficient for pre-test and posttest were found to be 0,77 and 0,88 respectively, in this study. In order to analyze the findings of the study, t-test was used to determine the difference between the pretest and posttest. In addition, Mann-Whitney U test was used to examine the participants' control focuses in terms of gender variable.

Findings

Results of the statistical analysis regarding the participant's locus of control development is shown below:

Table 1: Locus of Control Scores of the Children

Groups	N	\bar{x}	ss	t Test		
				t	Sd	p
Pre-Test	40	13,6500	1,49443	-6,382	39	,000
Post-Test	40	11,8000	1,75704			

Table 1 shows that there is a statistically significant difference between pre-test and post-test scores. When the arithmetic means are examined to find the source of the difference, it was seen that there is a decrease in the post-test scores. This indicates that the children's locus of control is shifted from external to internal and they experienced a positive development.

Table 2: Mann-Whitney U Test Table for Examining the Locus of Control Scores with Regard to Gender Distribution

	Gender	N	X	SD	U	Z	P																				
Pre-Test	Female	15	14,3333	,81650	119,500	-2,020	,043																				
	Male	25	13,2400	1,66533				Post-Test	Female	15	11,6667	1,17514	175,500	-,344	,731	Male	25	11,8800	2,04776	Difference	Female	15	-2,6667	1,17514	107,000	-2,329	,020
Post-Test	Female	15	11,6667	1,17514	175,500	-,344	,731																				
	Male	25	11,8800	2,04776				Difference	Female	15	-2,6667	1,17514	107,000	-2,329	,020	Male	25	-1,3600	1,99750								
Difference	Female	15	-2,6667	1,17514	107,000	-2,329	,020																				
	Male	25	-1,3600	1,99750																							

After the analysis of the participant children's locus of control in terms of gender discrimination, a statistically significant difference between the pre-test and the difference in differences was seen. Checking the arithmetic means showed that while it was monitored that the male students of the participant children are more internally controlled, at the end of the study, it was observed that the control shifted from external to internal for both genders but this development was higher within female students.

Discussion

As the result of the statistical analysis, it was noted that there are statistically significant differences between the pre-test and the difference in differences with regard to gender discrimination, and between the pre-test – post-test scores in terms of total scores ($p < 0.05$).

The results of the various studies on locus of control are shared in the following:

In a study about the elite athletes' locus of control conducted by Koca et. al. (2003) a difference was found in terms of gender distribution and it was noted that the origin of the difference was that while female athletes linked the reasons of their success or failure with internal motives such as effort, the male athletes linked their success or failure with external motives such as luck. The study on athletes who participated in university sports researched by Certel and Konak (2017) showed that there is a difference between the academic locus of control of the athletes regarding the gender. It was also pointed out that female athletes' locus of control are more internal while male athletes' locus of control are more external and team players' external locus of control is higher than individual athletes. In another study exercised by Yaycı (2016), the relationship between the high school students' locus of control and the social support they receive from their parents was examined and it was seen that the locus of control differentiates between genders. Climbing activity is known as a power-based activity. Physical difference between men and women when it is known that the difference in favor of men. Therefore, women can feel stronger and more self-confident when themselves realize that after the activity of climbing. And it was thought that the difference in the mentioned study is arising from the reason that the female participants feel stronger after the activity completed. On a meta-analysis study, while Neil and Richards (1998) emphasized the significant effect of the programs duration on educational attainment, they also stressed that the gender variable doesn't effect the program's outcomes. However, it was suggested that there is a difference between participants' internal perceptions due to gender distinctness and it was indicated that male participants correlate their success with their abilities while female participants associate their success with luck or an extra effort. As a result of this outcome it was asserted that females are mainly looking for mental development and the males are looking for adventure (Kenzie, 2000). Kimonen and Nevalainen (2005) and Gülbahar et. al. (2012) stated in their research that while students' active participation in their own learning process is increasing their motivation, it was also mentioned that it would encourage the participants -who received feedback about how their abilities are being developed

as well as the information for how effort enhances the learning within the frame of experiential learning- to improve their skills even more (Gülbahar et. al., 2012). It has become an expected case that the locus of control of the participants whose self-sufficiency increased in this process would be shifting from external to internal. Therefore it is being considered that the findings of the study are important in the sense of showing the teachers why student-centered education, learning by experimenting and experiencing are fundamental and how this approach increases the student achievement.

It is being told that the bond of mutuality which is being developed gradually within the group during the adventure activities based on challenging and experiential learning methods has a significant effect on the personal growth of the group members (Hopkins and Putnam, 1993). It was indicated for many years that various experiences such as rock climbing, canoeing, orienteering, camping are feeding the personal qualifications for instance entrepreneurship, collaboration, determination, resolution, constancy, resistance, locus of control and dexterity (Sheard and Golby, 2006 ; Özen, 2015).

The feeling of “I can deal with the problems with my inner powers” which was gained as a result of the activities might be the reason to why the search of mental development is more improved within females rather than males while it’s causing a positive progress for both men and women.

It is been a frequently stressed fact in the literature that educations which includes these kind of activities would have positive effects on students’ self improvements by making them leave their comfort zones (Brown, 2008). It was explained that while different life experiences would create opportunities for participants’ leadership characteristics to emerge, they would also cause positive advancements on social patterns such as problem solving, communication, confidence and locus of control (Özen, 2015).

When the regarded literature is investigated, it has come to light that the results of the previous studies and the results of this one coincide with each other and they support this very research.

Conclusion

Series of activities which were intended for artificial climbing wall has caused a positive development on children’s perception of locus of control and it was seen that children’s belief of thinking their experiences and what’s happening around them are under their control and they can turn their lives in whichever direction they want are effected positively.

Employing these kind of activities besides traditional curriculums has become a growing trend in the recent years. Nowadays, having suitable fields for those activities in a lot of private educational institutions in big cities and having those institutions to employ qualified people as instructors can be seen as an indicator that shows in which direction the future educational studies will take. It has great importance in our city to ensure that the young age groups come across such activities by way of out-of-school events and to make them continue systematically. Necessity of extending the similar projects especially in the regions with low income with support of various public bodies is being considered.

Suggestions

- Popularization and enlargement of the artificial climbing walls for similar activities
- Developing similar programs and projects especially for the outlying schools with low income
- To support these projects economically (particularly providing transportation for the participating children)
- Reaching the larger masses with help of Provincial Directorate of National Education and specifically with help of physical education teachers must be ensured.

References

- Aksoy, A., Mağden, D., (1994). "Lise Son Sınıf Öğrencilerinin Denetim Odağını Etkileyen Bazı Değişkenlerin İncelenmesi". 1. Eğitim Bilimleri Kongresi, Çukurova Üniversitesi Eğitim Fakültesi, 28-30 Nisan 1994, Balcalı- Adana.
- Bogner Franz X. (2010) The Influence of Short-Term Outdoor Ecology Education on Long-Term Variables of Environmental Perspective. *The Journal of Environmental Education*, 29:4, 17-29, DOI: 10.1080/00958969809599124
- Brown, M. (2008), Comfort zone: model or metaphor? *Australian Journal of Outdoor Education*, 12(1), 3-12.
- Certel Z., Kozak M., (2017) The Examination of Relationships between Academic Self- Efficacy, Academic Procrastination, and Locus of Academic Control of Athletes in Different Sports", *THE SPORT JOURNAL*, 19: 1-10)
- Çolak, E. (2006). Meslek lisesi makine bölümü öğretmenlerinin denetim odaklarının medeni durum, yaş, anne ve babanın eğitim düzeyi değişkenleri açısından incelenmesi. *Edu*:7, 2(1).
- Cüceloğlu, D.(1999), İnsan ve Davranışı, Remzi Kitabevi. İstanbul
- Dağ, D. (2002). Kontrol Odağı Ölçeği (KOÖ): Ölçek Geliştirme, Güvenirlilik ve Geçerlik Çalışması. *Türk Psikoloji Dergisi*, 17 (49), 77 – 90.
- Dönmez, A. (1986). Denetim odağı: Temel araştırma alanları. *Eğitim Bilimleri Fakültesi Dergisi*, 18(1-2), 259-280.
- Drissner Jürgen, Hans-Martin Haase, Annette Rinderknecht, Katrin Hille. (2013) Effective Environmental Education through Half-Day Teaching Programmes Outside School. *ISRN Education 2013*, pages 1-6.
- Gülbahar, Y., Avcı Ü., Ergün E. (2012). Yapararak Öğrenme: "Hedefe Dayalı Senaryo Yaklaşımı" Uygulamasına Bir Örnek, *Eğitim Ve Bilim*. 37 (165), 293-306
- Hopkins, D., Putnam, R. (1993). *Personal growth through adventure*. London: David Fulton.
- Kenzie, M. (2000). "How are Adventure Education Program Outcomes Achieved?: A review of the literature", *Australian Journal of Outdoor Education*, 5 (1): 19-28
- Kimonen, E., Nevalainen, R. (2005). Active Learning İn The Process Of Educational Change. *Teaching And Teacher Education*, 21, 623–635
- Koca, C. Aşçı, C. H., Oyar, Z. B. (2003), Elit Sporcuların Denetim Odağı Ve Fiziksel Benlik Algısının Cinsiyete, Yapılan Spor Branşına Ve Spor Deneyimine Göre Karşılaştırılması, 4: 3-12
- Korkmaz Nimet, Serkan Pancar, Tuncay Alparşlan and Ayça Ayan. (2017). Influence of Physical Activity Level to Problem Solving, *Sport Mont* 15 2: 15–19
- Neill J.T. & Richards G.E. (1998), Does Outdoor Education Really Work? A Summary Of Recent Meta-Analyses, *Australian Journal of Outdoor Education*, 3 (1)
- Nowicki, S., & Strickland, B. (1973), A Locus of Control Scale For Children. 1. *Consult Clinical Psychology*, 40, 148-154.
- Sellmann Daniela, Bogner Franz X. (2013) Effects of a one-day environmental education intervention on environmental attitudes and connectedness with nature. *European Journal of Psychology of Education* 28:3, pages 1077-1086.
- Sheard, M., Golby. J. (2006). Efficacy of an out-door education curriculum on selected aspects of positive psychological development. *Journal of Experiential Education*, 29, 2, 87-209.
- Özen G. (2015). The effect of climbing community activities as a leisure on university students social anxiety. *The Anthropologist*, 21(3), 558-564
- Özen Güçlü, Vatansever Şerife. (2016). Doğa Eğitimi Tabanlı Serbest Zaman Etkinliklerinin Üniversite Öğrencilerinin Denetim Odağı Üzerine Etkisi. *Uluslararası. Türk Eğitim Bilimleri Dergisi*.4(6), 103-112.
- Whitacre, Jay A. (2018). Exploring the Relationship Between Technology and Decision Making by Investigating Perceptions of Safety in Outdoor Adventure Activities (Doctoral dissertation, Indiana University).
- Yaycı, L. (2016) Lise Öğrencilerinde Aileden Algılanan Sosyal Destek ile Denetim Odağı Arasındaki İlişkinin İncelenmesi, *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 12(3): 829-843
- Yeşilyaprak, B. (1993). "A Critical Assessment of Locus of Control Scales and a Test of Nowicki-Strickland Scale in Turkey" III. *European Psychology Congress*, 4-9 July Tampere-Finland.
- Yıldız, N.O., Özen, G., & Bostancı, T.G.(2016). The effects of one-day outdoor education on self-efficacy. *Journal of Human Sciences*, 13(3), 6098-6103. doi:[10.14687/jhs.v13i3.4296](https://doi.org/10.14687/jhs.v13i3.4296)