

*Full Length Research Paper*

## Determining learning styles of the professional mountaineers

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**This study aimed to explore learning styles of the professional mountaineers. The research was carried out according to the survey model. The research group composed of 61 professional mountaineers ( $n_{(men)}=45$ ,  $n_{(women)}=16$ ) who attended Advanced Snow Ice Education Camp in Rize on September 1-7, 2012, the last camp of Mountaineering (Alpinism) Winter Education within Turkish Mountaineering Federation's activity program for 2012. As a data collection instrument, this study employed 'Kolb Learning Style Inventory' developed by Kolb (1985) and adapted to Turkish by Aşkar and Akkoyunlu (1993). Percentages and frequencies were used for analysis of data. As a result of the research, it was determined that professional mountaineers had following learning styles: 57.4% assimilating (35), 24.6% converging (15), 14.8% diverging (9), 3.3% accommodating (2).**

**Key words:** Sports, mountaineering, learning styles.

### INTRODUCTION

The concept of "learning style" has been first used by Rita Dunn (Güven, 2004) and later on defined by researchers in various ways. In general, learning style describes learning characteristics of an individual. According to Dunn and Dunn (1993), learning style is the way of acquiring and processing information in which each individual begins to concentrate on new and difficult information.

David A. Kolb is one of the researchers who made extensive studies about learning styles and contributed to the relevant body of literature to a great extent. Kolb defined the learning styles according to the experiential learning theory that he developed by himself. For him, learning style denotes individuals' preferred ways of acquiring and processing information within the course of learning (Jonassen and Grabowski, 1993).

According to Kolb's learning theory, learning as a cycle comprised four stages: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC) and active experimentation (AE) (Kolb and Kolb, 2005). Composition of these four elements determines

the learning style of an individual. While concrete experience and abstract conceptualization refer to an individual's way of acquiring information, reflective observation and active experimentation denote an individual's way of processing information. According to Aşkar and Akkoyunlu (1993), Kolb and Kolb (2005), Joy and Kolb (2009), Yamazaki (2005), there are four learning styles here, which are as follows: diverging style (reflective observation and concrete experience), assimilating style (reflective observation and abstract conceptualization), converging style (abstract conceptualization and active experimentation) and accommodating style (active experimentation and concrete experience). The characteristics of Kolb's learning styles are explained as follows.

Diverging learning style: "The diverging style's dominant learning abilities are concrete experience (feeling) and reflective observation (watching). They acquire information by concrete experience and process it through reflective observation. People with this learning are best in viewing problems from different points of view. Instead of acting, they prefer to observe. Besides brainstorming,

they are also good at focusing on ideas and finding relations between them” (Aşkar and Akkoyunlu, 1993; Kolb and Kolb, 2005).

**Assimilating learning style:** It comprises abstract conceptualization (thinking) and reflective observation (watching). Creating theoretical models is the most defining characteristic of this learning style. People with this learning style focus on abstract concepts and ideas when learning new things (Kolb, 1984; Paraphrased by Aşkar and Akkoyunlu, 1993). They are best in understanding wide-ranging information and organizing it in a clear logical format. In general, people with assimilating learning style are more attuned to logically sound theories than approaches based on practical value (Kolb and Kolb, 2005; Lofland, 2009).

**Converging learning style:** It comprises abstract conceptualization and active experimentation. Its main characteristics are problem solving, decision making, logical consequences of ideas and systematic planning. People with this learning style are best in solving problems. When an individual solves a problem, he also involves systematic planning. It is important to learn by doing (Kolb, 1984; Aşkar and Akkoyunlu, 1993).

**Accommodating learning style:** “Accommodating style’s dominant learning abilities are concrete experience (feeling) and active experimentation (doing)”. People with this style acquire information by concrete experience and process it through active experimentation (Kolb and Kolb, 2005). They integrate experience with implementation, and learn by trial and error. These people are open minded and easily adapt to change. Their style is learning by doing and feeling (Kolb, 1984; Aşkar and Akkoyunlu, 1993).

Learning styles help individuals through their learning processes. An individual who knows his learning style also knows when and how to learn. In return, it increases the control of individual over learning process (Güven, 2004).

While education in nature provides a distinct learning environment for an individual; it will also accentuate various and different feelings evoked by nature in people, besides the feeling of freedom. Nature education allows the participants to explore themselves in such a natural environment by taking them away from the monotonous life of cities and letting them face the basic phenomena like stones, snow, weather conditions, deep valleys, lakes and wild life. A number of activities can be carried out during nature education. The most common activities are as follows: Trekking, camping, rock climbing, canoeing, rafting, river kayaking, orienteering, speleology, sailing, paragliding (Özen, 2004).

Mountaineering is the sport of reaching the highest point of a predetermined mountain by using all or any of the methods of climbing on rock, snow or ice (Şen, 2002). Mountaineering education aims to help people gain new skills like approaching personal problems, dealing with them individually, problem-solving; to increase their self-

confidence in daily life, assist them to become people with integrity, to bring their unconscious qualities into the open (Vatansever, 2003). The popularity of mountaineering grows each day, as this branch of sport becomes increasingly widespread in the universities of our country (Özkan and Sarol, 2008).

A number of studies on mountaineering (Mazıcıoğlu et al., 1999, 2000; Özen, 2004; Özkan and Sarol, 2008; Köse, 2009; Kurt, 2010; Toros et al., 2010) can be found in the literature.

In the last couple of years, there has been a significant increase in studies on learning styles of different workgroups within the field of sport sciences (Çağlayan, 2007; Çağlayan and Taşğın, 2008; Koç, 2010; Çağlayan, 2011; Çetin, 2013; Bektaş, 2013).

Nevertheless, we could not find any study on the learning styles of mountaineers within the relevant body of literature.

Education means helping people to develop their skills to the highest level by unearthing their hidden potentials and capabilities (Araci, 1999). Mountaineering education is also a type of education which aims to render the latent powers of individuals. In this respect, the purpose of this study was to determine learning styles of people who participated in the mountaineering education within the field of nature education. Within this framework, this study sought to answer the following question: Which learning style do professional mountaineers prefer most?

We hope that research findings will make a great contribution to the literature on learning styles of athletes involved in professional mountaineering and provide important information for further studies on this sport.

## MATERIALS AND METHODS

### Study method

This study, which aimed to determine learning styles of the professional mountaineers, is designed according to the survey model.

With regard to the determination of learning styles of the professional mountaineers, the study sought to describe the views of mountaineers in their own circumstances, as they are (Yalız and Erişti, 2009).

### Population and sample

Turkish Mountaineering Federation organizes eight Mountaineering Education Camps in two and half years starting with summer basic education camp each year. Four of them are summer camps and four of them are winter camps. These camps are as follows respectively:

1. Summer Basic Education Camp
2. Summer Development Camp
3. Advanced Rock Education Camp
4. Summer Search and Rescue Camp
5. Winter Basic Education Camp
6. Winter Development Camp

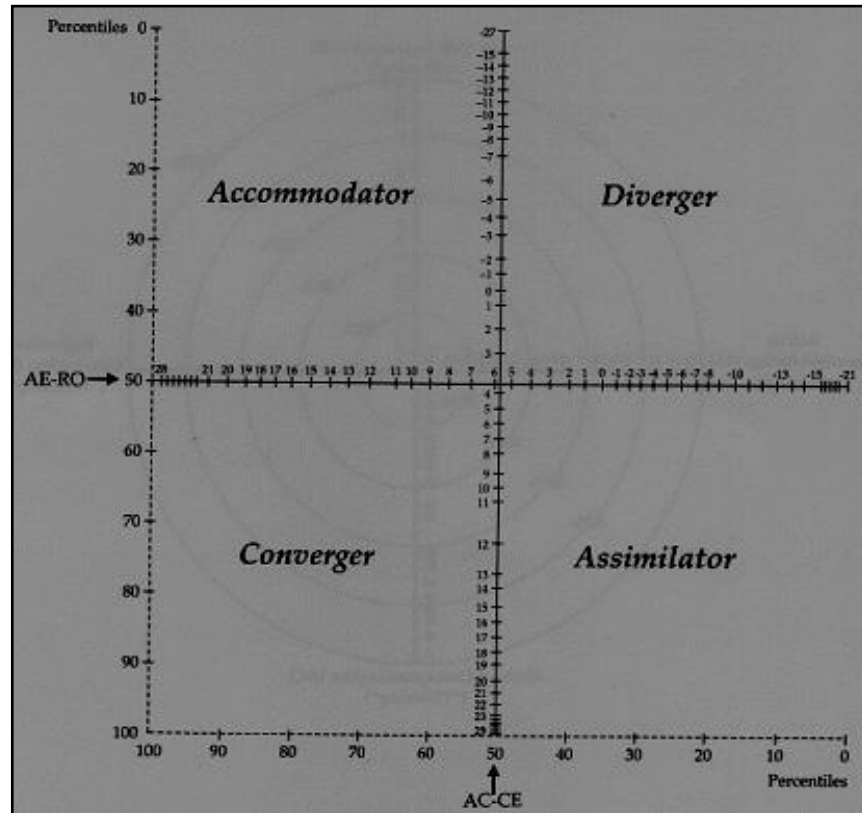


Figure 1. Kolb's Learning Style Diagram (Kolb, 1999).

#### 7. Winter Search-Rescue Camp

#### 8. Advanced Snow Ice Education Camp (TDF, 2012)

The research group consisted of 61 professional mountaineers ( $n_{(male)}=45$ ,  $n_{(female)}=16$ ), who attended the last camp, the Advanced Snow Ice Education Camp, in Rize on September 1-7, 2012, after completing seven basic education camps of Mountaineering (Alpinism) Winter Education within Turkish Mountaineering Federation's activity program for 2012.

#### Data collection tools

As a data collection tool, Kolb's (1985) "Learning Style Inventory" was used in order to determine learning styles of the students. The scale developed by Kolb (1985) and adapted to Turkish by Aşkar and Akkoyunlu (1993), consists of 12 items, which have 4 options each, asking individuals to rank four learning styles that describes their learning style best. Each expression in four options represents a learning style in the scale, which are as follows: 1. Concrete Experience (CE), 2. Reflective Observation (RO), 3. Abstract Conceptualization (AC), 4. Active Experimentation (AE). After receiving participants' responses to each option, total score for each of them range from 12 to 48. Two composite scores are calculated by subtracting concrete experience from abstract conceptualization and subtracting reflective observation from active experimentation. Calculated scores are between -36 to +36. While a positive composite score of AC-CE indicates an active learning, a negative score shows a reflective learning. Learning styles are found by determining the intersection points of composite scores with the help of a diagram (Figure 1).

In the research carried out by Aşkar and Akkoyunlu (1993),

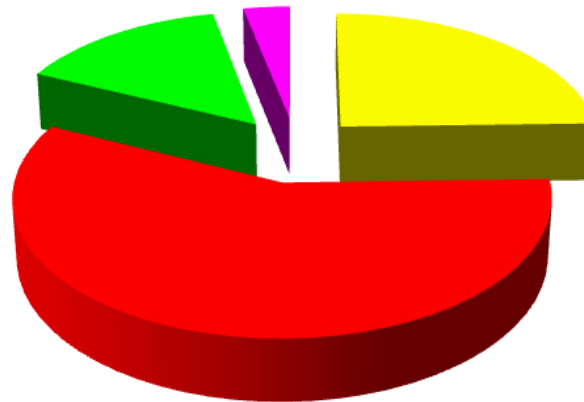
Cronbach-alpha reliability coefficients of the inventory were calculated as follows: Concrete experience (CE)=.58, Reflective observation (RO)=.70, Abstract conceptualization (AC)=.71, Active experience (AE)=.65, Abstract-concrete (AC-CE)=.77, Active-reflective (AE-RO)=.76. In this research, Cronbach-alpha reliability coefficients of the inventory were calculated as follows: concrete experience (CE)=.76, reflective observation (RO)=.54, abstract conceptualization (AC)=.77, Active experience (AE)=.65, Abstract-concrete (AC-CE)=.65, active-reflective (AE-RO)=.63.

#### Analysis of data

Frequencies ( $n$ ) and percentages (%) were used for the analysis of data. It was attempted to determine whether mountaineers' learning styles differed according to a number of variables (gender, age, socio-economic status, how they perceive the camping environment) with "chi-square test"; nevertheless, the relationships between variables were not examined since the condition of "if any expected frequency is below 1 or if the expected frequency is less than 5 in more than 20% of your cells" cannot be met (Büyüköztürk, 2007).

## RESULTS

As it can be seen from Table 1, 73.8% of the mountaineers were male (45), and 26.2% of them were female (16). In the distribution among age groups, it was shown that 52.5% of the participants (32) were 32 and older, 13.1% (8) were between 23 to 25, 26 to 28 and 29 to 31,



■ Converging ■ Assimilating ■ Diverging ■ Accommodating

**Chart 1.** Distribution of learning styles among mountaineers.

**Table 1.** Personal characteristics of the mountaineers participated to the research (n= 61).

	Personal characteristics	n	%
Gender	Female	16	26.2
	Male	45	73.8
Age bracket	Age of 20-22	5	8.2
	Age of 23-25	8	13.1
	Age of 26-28	8	13.1
	Age of 29-31	8	13.1
	Age of 32 and over	32	52.5
Socio-economic status	Low	4	6.6
	Middle	53	86.9
	High	4	6.6
Their perception of camping environment	Authoritative-oppressive	10	16.4
	Democratic-tolerant	41	67.2
	Protective-watchful	10	16.4

**Table 2.** Distribution of learning styles among mountaineers.

Learning styles	N	%
Converging	15	24.6
Assimilating	35	57.4
Diverging	9	14.8
Accommodating	2	3.3
Total	61	100.0

indicated low and middle socio-economic status. 67.2% (41) of the respondents found camping environment democratic and tolerant, 16.4% perceived it as authoritative and oppressive.

As it can be seen from Table 2 and Chart 1, assimilating learning style (57.4%) ranked highest among mountaineers. It was followed by converging (24.6%), diverging (14.8%) and accommodating (3.3%) learning styles respectively.

8.2% (5) were between 20 to 22.

While 86.9% (53) of the mountaineers participated in the research expressed that they considered themselves with high socio-economic status, 6.6% (4) of them

## DISCUSSION AND CONCLUSION

The following conclusions have been reached in this study, which sought to explore learning styles of the professional mountaineers.

It was determined that mountaineers were mostly Assimilators (57.4%), which was followed by Convergents (24.6%), Divergers (14.8%) and Accommodators (3.3%).

According to Kolb's learning styles, abstract conceptualization (thinking) and reflective observation (observing) are dominant learning abilities of individuals with an assimilating learning style. Forming conceptual models is the most prominent quality of people with this style. They learn by watching and thinking through concepts. Their greatest strength lies in their ability to create theoretical models. They are not very interested in people. These individuals are mostly seen in planning and research departments. They are more interested in abstract concepts and ideas. People with this learning style are very good at understanding a broad range of information and putting them into a logical whole. Creating conceptual models, organizing information, testing theories and ideas are strengths of the individuals with an assimilating learning style (Kolb, 1984). "The assimilating learning style is important for effectiveness in information and science careers. In formal learning situations, people with this style prefer readings, lectures, exploring analytical models, and having time to think things" (Kolb and Kolb, 2005).

Their weaknesses are imagination, insufficiency of practical application, lack of planning with regard to work, and leadership. People with this learning style focus on abstract concepts and ideas when learning new things (Kolb, 1984).

Based on research findings we can say that assimilating learning style, which has the above mentioned characteristics, is more dominant among the professional mountaineers.

It can be seen that there are several studies related to people engaged in mountaineering sport in the relevant literature (Mazıcıoğlu et al. 1999; Mazıcıoğlu et al. 2000; Özen, 2004; Özkan and Sarol, 2008; Köse, 2009; Kurt, 2010; Toros et al. 2010). Nevertheless, in the body of literature, no study was found that examined learning styles of mountaineering. Within this scope, it was hoped that this study shed a light on the literature about learning styles of sportsmen taking part in mountaineering and it provided important data about this sport.

Our findings were partially or fully parallel to the studies in literature that focused on learning styles of athletes or people educated in in sports sciences in general. In these studies following results have been reached: Aktas and Mirzeoglu (2009) who studied learning styles of II. Stage (6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grades) elementary school students that took physical education classes, determined that most students were converging (37.4%) and assimilating (24.0%) learners; Yaliz and Eristi (2009) who explored learning of styles of the students in physical education and sports department found that they preferred assimilating (35.8%) learning style most; Harrelsen et al. (2003) revealed that 76% of coaches were assimilators, in their research concentrated on learning styles of

coaches living in the USA; Çağlayan (2011) who examined learning styles of academicians in physical education and sports departments determined that learning styles of majority of academicians were diverging (47.6%) and assimilating (30.1%); Bektaş (2013) found that most of the students were convergers (32.0%) and assimilators (30.7%) in his study that examined learning styles of students in physical education and sports education department; Çetin (2013) determined that learning style of most students was assimilating (35.5%) in his study exploring middle school students who played sports and who did not.

To sum up, it was determined that more than half of the professional mountaineers favored assimilating learning style which was based on reflective observation and abstract conceptualization according to Kolb's Experiential Learning Cycle.

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