ORIGINAL ARTICLE

An Evaluation of the Effect of Emotional Intelligence on Achievement Orientation in Architectural Design Education

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ABSTRACT

The purpose of this study is to research the concept of achievement orientation in architecture education throughout the education periods of students, and to render the findings sharable with students and education professionals. The findings were gathered through measuring the intrinsic motivations of students in their first year of architectural education and comparing the effect of these measurement results on the studentsø graduation year. The reason why the study steers towards the field of psychology is the thought that motivation is a necessary element for achieving success and affects architectural design education in a fundamental way. Motivation is a part of the emotional intelligence, an area which is now measurable in psychology.

Key words: *Architectural design education, motivation, emotional intelligence, achievement orientation*

1. INTRODUCTION

Since the last century, in which psychology emerged as a branch of science, numerous researches have been conducted on learning, development and motivation of the human mind, and many theories have been developed. Psychologists and educators use these information and theories to shape education and training in schools. In this context, the fact that the trio of learning, development and motivation create the dialectic relationship between the learner and the teacher is something that is worth stressing.

Doruk defines education as õ*The process in which the individual makes willed changes in his/her behaviours deliberately and through his/her own experiences*ö[1]. Here, the word õwilledö also expresses that this change is preconceived and decided. õWillingö is an emotional factor that will facilitate learning. However, if need is the first

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factor that determines our behaviour, then õsuccessö is the second factor. Similarly, the most important emotional factor in achieving success is the orientation towards it. Willing and achieving success can only be possible with the individualøs intrinsic motivation.

Human beings are born with the drive to learn; therefore, curiosity and enjoyment towards learning exist inherently. Yet it is another fact that they diminish over time, starting from infancy [2]. The question "while some people seem willingly and are wondering against some certain topics why can some others stay more indifferent and passive?" shows that there are many different individuals who are clever but at the same time whose social assets are undeveloped, who have high academic success at school but who are not concerned, willingly and lively and who cannot use their creativity. While the psychologists in the recent years point out that the intelligence measured with tests is not an important indicator of the life success, they discovered that people, who have a mind that can understand the emotions of themselves and others and who can control them, are happier and more successful. The question õHow do we learn?ö forms some of the basic topics of psychology. When we define learning as the thought and attitude change of the individual by passing the perceived through an intelligence filter, we also meet the concept of õthoughtö in which what is learned is complemented with past cumulating and then a mental organization is reached. It is the subject of wonders what triggers learning in the individual who restructures the facts born from learning and thought and the bonds between these facts [3].

The reasons of success and failure in the design education, which constitutes the basis of architectural education and which combines theoretical knowledge with practice, were studied sometimes in terms of the educational system and sometimes with regard to the teacher-learner interaction. The cognitive approaches posited by the major developments in psychology to explain human behaviour and mental structure show that knowledge gained in the cognitive area is more predominant in learning compared to knowledge gained through behaviours. Similar developments concerning learning also bring different approaches to architectural design education. In design education, where the capabilities required for architectural education are synthesized with readily available knowledge, although success is attributed to reasons such as creativity, education programmes/curricula and physical environmental conditions, there are very few researches addressing the issue from the viewpoint of the teacher/learner interaction.

## 2.	MOTIVATION	AND	EMOTIONAL INTELLIGENCE

Cognitive studies taking place particularly in the recent years reveal design education as a process where thinking is taught and the mind is activated. Based on the assumption that design is basically a cognitive activity, the factor

making the student eager to learn becomes important. When it comes to the principles of the cognitive approach, it is seen that, in learning, intrinsic motivation is more effective than extrinsic motivation, which is important in the behaviourist approach. In addition, in the cognitive approach, learning is accepted as a process following an indirect, explorative path where the learning orientation is based on the õwhyö and that strengthens the problem-solving ability. For behaviourists, the thing learned is a specific behaviour, whereas for cognitivists, it is a general idea, some new information processed in the memory. Cognitive processes are an integral part of our motivated behaviours. Other than a small number of reflexes, all of our behaviours are motivated by mental processes, i.e. our thoughts and the knowledge we have [4].

Increased effectiveness of the learning process, which consists of a series of planned activities organized to initiate, sustain and realize learning for the purpose of the learnerøs development, is directly related to the environment in which the process takes place. In the contemporary understanding of education, teaching starts from the learner. Education- teaching activities must be student-centred and student-oriented. The mode and methodology of teaching is determined by the studentøs developmental characteristics, interests, needs, and his/her way of perceiving things. Creative and constructive education of the student requires a student-centred education-teaching process. In order for learning to take place, the individual must possess the following: Type-specific preparedness, maturation, general state of sensitization and anxiety, past experiences, motivation and attention.

In the light of the information obtained from researches carried out in the area of psychology, the learner-centred education and the main psychological principles of learning, developed by the American Psychological Association (APA), are used widely in organizing educational environments providing the maximum benefit to learners, and in developing curricula/education programmes suitable to their learning levels. These principles focus on internal factors that are under the control of the learner, rather than psychological factors or conditioned habits that are effective in learning [5].

Motivation is the "willing" to do a work and proceed it. The factors initiating and directing the behavior together with the variables that determine the strength and continuity of the behavior form the motivation. To measure motivation; what the person does (initiation), what he selected (direction), the power of the behavior (strength) and its duration (stability) are all observed. According to Eisenhower, motivation is the art of causing people to do the things we want as if they want it so.

Internal motivation is the tendencies which come from inside and source from the individual's personality, his attitudes, his behaviors and values. It causes him to reassure himself from what he does. The person feels self-

sufficiency and wants to claim his own faith. Whereas the external motivation sources from outside of the person, causes him to do something with a consolidation or awarding from the environment. Its effect is temporary. The durability and the density of the behavior made is low [6].

Research shows that motive and excitements are effective on perceptions. The individual sees õwhat he wantsö or õwhat he willsö, and hears õwhat he willsö when he is motivated with a certain motive (e.g. the success motive etc.) [7].

Brophy addresses the learning motive as, õthe tendency to try to find academic activities meaningful and get the intended benefits from these activitiesö [8]. As such, learners with high learning motives value and enjoy knowledge-gaining and self-development. Moreover, they dedicate more effort and attention to learning. If the learner has identified a specific purpose as to why he should learn architecture and makes himself believe that he has to reach this goal, then he becomes motivated.

In the area of teaching, students are expected to be productive and achieve this productivity on their own. This expectation brings forth the concept of õemotional intelligenceö. The concept of õemotional intelligenceö was first suggested by Goleman; and in the recent years, it is understood in psychology that emotional intelligence is more important than IQ in achieving success. Hence, it is not possible to separate the concept of õindividual motivationö from emotional intelligence. Because, only individuals with emotional intelligence can be expected to manifest their intrinsic capabilities without an external factor, and individual motivation is an intrinsic action. Motivation is the propensity to act, while motive is the specific need or will that causes this propensity [9]. Weiner states that previous researches on motive defined motive rather as the initiation of behaviour, while contemporary motive researches emphasize the meaning of choice and activities undertaken by the organism [10].

Goleman defines the emotional intelligence as: *õThe person's understanding of his own emotions, carrying empathy for others' emotions and his ability to arrange his emotions in a way to enrich life."* According to Goleman the thinking part of the brain reproduces from the emotional part of it [11]. Self-Awareness, Self-Regulation, Empathy, Social Skills and Motivation are the elements of EQ. Motivation is necessary in order to be able to direct all emotions towards a purpose, pay attention, self-actualization, self-restraint and creativity. An individual who can accomplish all these is oriented to success beyond expectations. This is defined as õachievement orientationö. Achievement is like a triple proposition; motivation cannot exist without willingness, and achievement cannot happen without motivation. Willingness has two requisites. First of all, willingness should come from within, should be sincere and not artificial.

When the individual enters the flow and works towards his goal, he may demonstrate all kinds of high performance, distancing himself from time and place. Such people look for creative opportunities; they love learning and have infinite energy to do better. Thus, they are more productive and more effective in any task they engage in, and they set challenging goals for themselves. Taking immense pleasure from constantly increasing their performance bars and achieving new scores, these people, when motivated with success, seek ways of going even higher. Highly motivated individuals are able to maintain their optimism even if the results may be negative. To overcome the depression following failures, the individual is able to create a combination of success-based motivation and self-adjustment.

After 1950s, scientists started to study the components of success. The pioneer in this area was psychologist McClelland, who compared successful and less successful people in an attempt to find the characteristics affecting õsuccessö. As a result of his studies, McClelland found that achievement motivation was the main competency that distinguished successful people [12]. Our emotions determine what we can do in our lives by drawing the limits of our capacity to use our innate mental abilities, to the extent that it prevents or hinders our capabilities such as thinking, planning, continuing to prepare for a far off target or problem-solving. And they lead us to success to the extent that we are motivated to do the job with eagerness and pleasure ó or even a suitable level of anxiety (hypomania). It is in this sense that emotional intelligence is a basic ability and a force that deeply affects all our other capabilities by either sharpening or blunting them [13].

Emotional intelligence skills are not the opposite of cognitive skills; rather, they are in a dynamic interaction in the real world and at conceptual level. Perhaps the main difference between cognitive intelligence and emotional intelligence is that emotional intelligence is less burdened with heredity, giving parents and teachers the chance to take up from where the nature has left and build up a childøs chances of success. Emotional ability is a meta-ability; in other words, it determines how well we can use our existing capabilities, including intelligence.

3. ACHIEVEMENT ORIENTATION IN ARCHITECTURAL DESIGN EDUCATION

Human beings have needs that are shaped around the value system of the societies from which they come, and these needs are vastly different from those of animals. One major need is the achievement need. Achievement need manifests itself in the individualøs willing to perform a task or behaviour at or above a standard of excellence. This issue was studied from different angles by American psychologists, and techniques were developed to measure this need. McClelland also said that this motive can be measured by the Thematic Apperception Test, known shortly as TAT [14].

Weiner studied the Achievement Motive. According to Weiner, õwhen we are successful in a task or mission that needs to be achieved, we attribute our performance to one of the following four main factors: ability, luck, effort, and task difficulty. Ability is a stable and internal factor of behaviour. Yet if we attribute our achievement to the effort we made, then we are talking about an internal and unstable factor. Or, we can attribute our achievement to the task difficulty, which would mean that the cause of our achievement is a stable, external factor. Or, if we were to say that we were successful by luck, then we would be attributing our achievement to an unstable external causeö [15]. In a study by Fignesi, students with different IQ levels but in the same achievement level were examined, and it was found that those with higher achievement levels also had higher motivation levels [16].

Achievement orientation includes putting difficult goals, struggling to do something difficult in the shortest time possible and in the best way, overcoming the difficulties, not withdrawing in case of obstacles and showing strength. Furthermore it also includes efforts to catch the better and the excellent, rivalry with one's own performance, reaching the goals that require struggling, work development and contribution to the cooperation willing [17].

In order for architecture students to be considered successful with regard to design, some admissions must be put forth from the start. First of all, the project coordinator must believe that design capability is not something that exists from birth, but rather a teachable process that is acquired and gained as a result of a certain amount of knowledge and experience. Although it is true that some learners are born with these skills, what will lead them to success during their learning processes will again be their intrinsic motivation to learn and sustain creativity. However, this may happen in a very short time for some students, while it may take longer for some. Hence, addressing the emotional intelligence aspects of learners in the teaching process will make the learner-project coordinator interaction more efficient.

Finding out the studentsø strengths and weaknesses in studio environment is the responsibility of the project coordinator. In this case, the differences between students and awareness about their past experiences will enable the project coordinator who is exploring the learning ways of the students to see that these differences create a difference in each student. When emotional intelligence aspects are activated to get to know the inner world of the learner, they will enable the project coordinator to ensure a more efficient and more successful education process.

The basis of design education is to equip the student with competences and experiences in an intellectual environment. And this environment is the architectural design studios. The project coordinator is the entity who endeavours to ensure the studentøs intellectual development, instils confidence and motivates the student. The project coordinator should be the architecture critique rather than the architecture editor, and should be able to assess õthe architectural behaviours of each student within the framework of the studentøs own program, theory and practical styleö [18].

The state of mental interaction between project coordinator and learner when engaged in design activities is also very important. The indication of the harmony demonstrated by the project coordinator and the learner must be spontaneous. At the studio, the project coordinator and the learners will feel close, happy, willing, interested and relaxed, to the extent that they are able to coordinate their actions. In the interaction of thought and action between the learner and the project coordinator, although the studies on how, with what and to what extent eagerness is actuated in the learner is closely related to the data encoding activities taking place in the mind, what a learner feels and the extent of these feelings are not yet measurable in studio environment.

A study is the poll made by Uluo lu in 1990 with architecture students. In this personal characteristics research that a good architecture project student must have; a student being researcher has taken the first place with the answers of 13,7% of the students, where motivation has taken the fourth place with answers of 7,8% of the students. Other fifteen characteristics indicated however, are the characteristics that an individual must have in the factors of the EQ elements. In the same research, under the heading "roles in studio/developing personality", the one giving thrill and motivation has taken the first place with 26,9% of the answers. In the question õHow design should be taught", activating the student, which means motivating the student to the studio, has taken the first place with the answers of 22, 1% [19].

4. METHOD

a. Sample

In order to enable analytic results that would allow comparisons, the study was carried out with 4 project coordinators and 26 second-semester students from the Department of Architecture in the Istanbul Kultur University for 15 weeks. The reason the test subjects were chosen from among this group is because the 2nd-term students maintain their willingness, and their motivations are not yet compromised by the challenges of the school year. The exact opposite of this was also considered: A student starting with no eagerness would not have any dramatic changes in his level of eagerness come the second semester. The study is begun with 26 students but at the end of the fourth year, 3 students leaved from the school because of some individual reasons.

b. Data collection tools:

i. The Bar-On Emotional Quotient Inventory

The Bar-On Emotional Quotient Inventory (EQ-i) is used in the field study made to measure the internal motivation

which is an element of emotional intelligence. The EQ-i is a self-report measure of emotionally and socially intelligent behaviour that provides an estimate of emotional-social intelligence. Bar-On EQ-i, is a scientific emotional intelligence measuring scale which has been tested on 85.000 persons and is a study of 19 years by Reuven Bar-On. This test is being applied at first on the students of an institute which gives architectural education. The test has been translated into more than 30 languages[1]. The test Baltas has been standardized by Baltas Management, Education and Advisory Center. Baltas Management, Education and Advisory Centre translated the test that was suitable for Turkish language. The assessment of Bar-On Emotional Intelligence Scale is made by Multi Health Systems Inc. whose centre is located in Toronto-Canada. MHS is an information based organization.

So Baltas Management, Education and Advisory Centre was also provided the relationship with this organization. This application is done using the Bar-On EQ Inventory[TM]. Bar-On EQ Inventory[TM] is a proprietary working program. Scores are computer-generated. When the Bar-On EQ Inventory[TM] scale is applied to an institution, the results come in the form of four separate reports. The first is an individual summary report. The individual's responses render a total EQ score and scores on the following 5 composite scales that comprise 15 subscale scores: Intrapersonal (comprising Self-Regard, Emotional Self-Awareness, Assertiveness, Independence, and Self-Actualization); Interpersonal (comprising Empathy, Social Responsibility, and Interpersonal Relationship); Stress Management (comprising Stress Tolerance and Impulse Control); Adaptability (comprising Reality-Testing, Flexibility, and Problem-Solving); and General Mood (comprising Optimism and Happiness). The Bar-On under these categories, fifteen aspects are listed. Of these aspects, emotional self-awareness, assertiveness and self-actualization –included under interpersonal- inform about the individual's intrinsic motivation.

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1. The translation process has created not only over 30 different translations but also more than one version of the same language for a number of languages. For example, there are two versions of French (European and North American), Spanish (European and Central American) and Portuguese (European and South American). The purpose of this on-going process of translation is to facilitate the use of the Bar-On model and measure by practitioners and researchers. For more details, the reader is referred to the publisher's Foreign Language Translation Department at Multi-Health Systems in Canada (www.mhs.com).

The higher the scores of these aspects, the higher the level of intrinsic motivation of an individual is. Under the present study, the individual summary reports of the study subjects were evaluated. The second is a development report. This report offers the person's strengths and weaknesses, and actions to improve emotional intelligence. The third is the resource report, which presents scores in a graphical format conducive to development, coaching, and counselling. And the fourth is the group report, which includes the EQ results for the group of respondents.

ii. Scoring System

In the light of the definition of "achievement orientation" given above, a checklist of what is expected from the student in order to achieve success in the architectural design workshop was drawn, along with a list of the behaviours that are expected from the students, that are not wanted, that make a difference and that are never wanted, compiled through a preliminary interview with the studio supervisors. Then, the scoring system to be used was determined so as to enable comparisons of the listed behaviours with the numerical values in the statistics programme. According to this scoring system, behaviour that make a difference score +2 points, expected behaviours score +1 points, unwanted behaviours score -1 points and behaviours that are never wanted score -2 points. It is possible to add to the list some new behaviour that catch the eye during the workshop, since the design workshop has a flexible structure and the relationship between the project coordinator and the learner has no definite boundaries. This situation can also cause the individual to demonstrate behaviours outside of what is expected during the workshop.

iii. Video Recordings

In order to monitor on a constant basis how learners pass one day in the workshop environment, what kind of behaviours they demonstrate and how they interact with the project coordinator, and so as to capture all relevant details, video recordings were taken during the first session, the middle session and the final session. The first day is important in terms of observing the eagerness levels of the learners. It is important in terms of seeing what they experience on their first days, whether they have come prepared and whether they participate in the workshop activities, for comparison with subsequent days to enable a retrospective evaluation at the end of the workshop. The middle session and the final session are important in terms of recording the changes in behaviours compared to the first day. Another reason video recording was preferred was to enable a detailed study of the behaviours of learners throughout the day, and come up with a result that supports all project coordinators on the right decisions.

Photograph 1-2. Photos from Video Recordings

How the learner maintains the same attitude over the course of the day and whether there are any changes between the behaviours on the video-recording days are also important findings. As such, the study subjects are aware of the video recording. In addition, the fact that the learners are aware of the recording also reveals whether the learners focus on design activities or on the video recording during the workshop, hence turning the video recordings into an observation tool that supervises the learnersø motivations from the outside. Having only one person applying the observation technique also makes it easier to recapture any details that might be overlooked, when watching the playback. After all video recordings were completed; researcher watched the playbacks and whether the students had performed the behaviours included in the achievement checklist[2]. Then the accuracy of the scorings was reviewed by researcher.

5. CASE STUDY

a. Step 1: Correlation between Emotional Intelligence and Achievement Orientation in the First Year of Architecture Education

Steps taken in the field study are as follows:

> 26 second-semester students and 4 project coordinators from the Istanbul Kultur University, Department of Architecture were chosen as test subjects.
> 15-week workshop activities were informed to the students through handouts.
> In the first week of the study, 26 students were asked to complete the Bar-On EQ Inventory test in 30 minutes.
> In the first week, the behaviours of the students in the workshop were recorded on video.

Every weekend, project coordinators were asked to fill out the Achievement Orientation Checklist prepared beforehand for each student interviewed. In the middle session and the final session, the behaviours of the students in the studio were recorded on video. The behaviours of the students from the first session to the last session were observed in the periodical order of first-mid-last.

In the 15th week, students were asked what grades they expected to score at the end of the term. It was attempted to learn, in the final week, how students assessed themselves prior to announcement of their final achievement grades.

At the end of the workshop, the process was evaluated in general with project coordinators and students.

Project coordinators were asked to give the final marks before grading. The final marks are marks given based on the interaction with student from the own personal perspective of the project coordinator. It was also aimed to reveal the differences that may occur between the final marks and the end-of-term grades.

Finally, the end-of-term grades (assigned in letters) were taken from the project coordinators.

b. Findings

The Bar-On emotional quotient scale standardized by Baltas Management, Education and Advisory Centre and administered to students in the first week was evaluated and graded by Multi Health Systems (MHS) in Toronto. As a result of the evaluation, it was found that the average EQ level of the class was 94. An EQ score of 94 is an average score in terms of the level of interpretation. This EQ level shows that the class realizes its emotional intelligence functions at an average level. The breakdown of the total EQs of the students graded was as follows: 1 for 3.8-7.7, 2 for 11.5-38.5, 3 for 42.3-92.3 and 4 for 96.2-100. Score 94 is in the 3rd grade of EQ.

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2. Checklist is explained in scoring systems. A checklist of what is expected from the student in order to achieve success in the architectural design workshop was drawn, along with a list of the behaviors that are expected from the students, that are not wanted, that make a difference and that are never wanted.

Table 1. EQ Levels

50-70	1
70-90	2
90-110	3
110-130	4
130-150	5

These are the offset values used in the SPSS statistics program when calculating the correlations. The Bar-On Emotional Quotient Inventory measured 5 aspects under 133 items with a validity score and 15 subscales. These are: Intrapersonal (comprising Self-Regard, Emotional Self-Awareness, Assertiveness, Independence, and Self-Actualization); Interpersonal (comprising Empathy, Social Responsibility, and Interpersonal Relationship); Stress Management (comprising Stress Tolerance and Impulse Control); Adaptability (comprising Reality-Testing, Flexibility, and Problem-Solving); and General Mood (comprising Optimism and Happiness). It was seen that the intrapersonal levels of the students were the highest, and the stress-management levels were the lowest in values. The intrapersonal scale includes the subscales of self-regard, emotional self-awareness, assertiveness, self-actualization and independence, while the stress management scale includes the subscales of stress tolerance and impulse control. The mean values of all five scales are at an average level in terms of an emotional quotient evaluation. Hence, across the students, it is seen that all five scales of emotional intelligence are at an average level.

Table 2. Total Achievement Orientation and Total EQ list of students in first year

Name	Total Achievement Orientation	Total EQ
Student 1	60.00	108.00
Student 2	33.00	96.00
Student 3	62.00	90.00
Student 4	44.00	89.00
Student 5	-1.00	94.00
Student 6	63.00	96.00
Student 7	57.00	84.00
Student 8	53.00	90.00
Student 9	45.00	114.00
Student 10	68.00	104.00
Student 11	5.00	109.00
Student 12	47.00	95.00
Student 13	74.00	112.00
Student 14	70.00	97.00
Student 15	27.00	96.00
Student 16	11.00	99.00
Student 17	80.00	100.00
Student 18	-1.00	80.00
Student 19	53.00	90.00
Student 20	61.00	84.00
Student 21	11.00	98.00
Student 22	69.00	91.00
Student 23	-3.00	106.00
Student 24	-45.00	66.00
Student 25	-2.00	85.00
Student 26	.00	68.00

The behaviours of the students at the workshop for the 15-week workshop period were scored via an achievement orientation checklist. The project coordinator was asked to interview the students at the end of each session and fill out the form pertaining to each student. If more than one project coordinators interviewed a student, then the scores they gave to the student at the end of the session were harmonized. As such, not all the interviews of the students were carried out with the same interaction level. In such cases, it was endeavoured to form a common opinion based on identified behaviours. In addition to assessing the behaviours of the students within the scope of the pre-defined behaviours, project coordinators also specified the situations where the student demonstrated a specific behaviour.
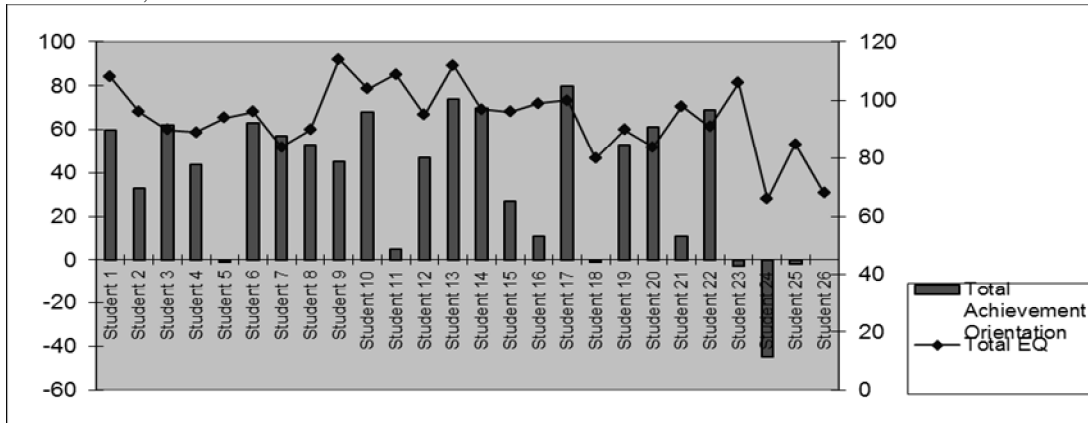

Figure1. Total Achievement Orientation and Total EQ of Students [20].

When it comes to the percentages and in-class breakdown of achievement orientation, it is seen that the lowest value is -45 with 3.8%, and the highest value is 80 with 3.8%. The overall percentage values included in the achievement orientation breakdown list were then evaluated in the SPSS statistics program based on the following scale: 1 for 3.8-23.1, 2 for 26.9-73.1, 3 for 76.9-100. It is seen that there is a correlation between the overall EQ levels and achievement orientation levels of the students.

Table 3. Correlations of Total EQ, AO and Term Grades.(Correlation is significant at the 0.01 level 2-tailed).

Correlations		TOTEQTAB	Term Grades	Achievement
TOTEQTAB	Pearson Correlation	1.000	.527	.531
	Sig. (2-tailed)	.	.006	.005
	N	26	26	26
Term Grades	Pearson Correlation	.527	1.000	.836
	Sig. (2-tailed)	.006	.	.000
	N	26	26	26
Achievement	Pearson Correlation	.531	.836	1.000
	Sig. (2-tailed)	.005	.000	.
	N	26	26	26

The first striking finding is that successful students had high EQ levels, while unsuccessful students had low EQ levels. The achievement orientations of students were determined via their end-of-term grades and the corresponding coefficients. Class-wide, it is seen that the passing grade average of the students is high. In addition to their end-of-term grades, the final marks given by project coordinators were also asked. A few grades revealing differences between the end-of-term grades and the final marks given by the project coordinator were not due to the interaction between the student and the coordinator, but rather due to some administrational reasons. Although there

is a similarity between the achievement grades and the final marks, since a few number of differing grades were due to reasons outside of any workshop-related problems, the statistical calculations were constructed based on an evaluation of the final marks of the students. In the light of all the above-mentioned findings, the SPSS, an analytical program used by social scientists, was used to reveal the relationship between achievement orientation, end-of-year grade and emotional intelligence. In the statistical study done using the Pearson correlation coefficient, a significant correlation of 0.01 was found between emotional intelligence, achievement orientation and end-of-term grades. As such, it is observed that as the emotional intelligence levels of the subjects get higher, their achievement orientation and end-of-term grades also increase.

c. Step 2: Correlation between Emotional Intelligence and Achievement Success in the Fourth Year of Architecture Education

In the second step of the study, the students identified with a correlation between their achievement orientations and emotional intelligences measured in their first year were measured again in their fourth years to see if the same correlation was still valid when their average grades for all the architectural design courses they had received till end of their fourth year were compared to their emotional intelligences (Figure 2). When comparing these data, achievement orientation checklists could not be prepared for all architectural design courses, and all students could not be observed since they worked in different workshops in subsequent semesters. Three students were leaved the school because of their individual reasons. At the end of the fourth year, 23 studentsø emotional intelligence levels and the average of all their grades from architectural design courses were compared.

Table 4. Findings of total EQ with first year, first year and fourth year achievement orientations, and GPA

Name	Achievement Orientation (first year)	Total_EQ	Achievement Orientation (fourth year)	GPA (fourth year)
Student 01	82,93	87,65	30	98
Student 02	59,88	62,94	74	57
Student 03	84,63	50,59	89	83
Student 04	69,27	48,53	75	65
Student 05	90,00	90,00	90	90
Student 06	85,49	62,94	30	83
Student 07	80,37	38,24	81	68
Student 08	76,95	50,59	30	46
Student 09	70,12	100,00	81	78
Student 10	89,76	79,41	30	30
Student 11	35,98	89,71	77	55
Student 12	71,83	60,88	100	85
Student 13	94,88	95,88	85	76
Student 14	91,46	65,00	100	86
Student 15	80,00	80,00	80	80
Student 16	41,10	69,12	85	64
Student 17	100,00	71,18	30	100
Student 18	30,85	30,00	30	39
Student 19	76,95	50,59	98	85
Student 20	83,78	38,24	88	66
Student 21	41,10	67,06	74	62
Student 22	90,61	52,65	84	75
Student 23	30,00	40,29	30	46

Standard deviation is a widely used measure of variability or diversity used in statistics and probability theory. It shows how much variation or "dispersion" exists from the average mean, or expected value. In this study standard deviation method is used to compare total EQ with first year, first year and fourth year achievement orientations, and GPA findings in the same scale 0-100.
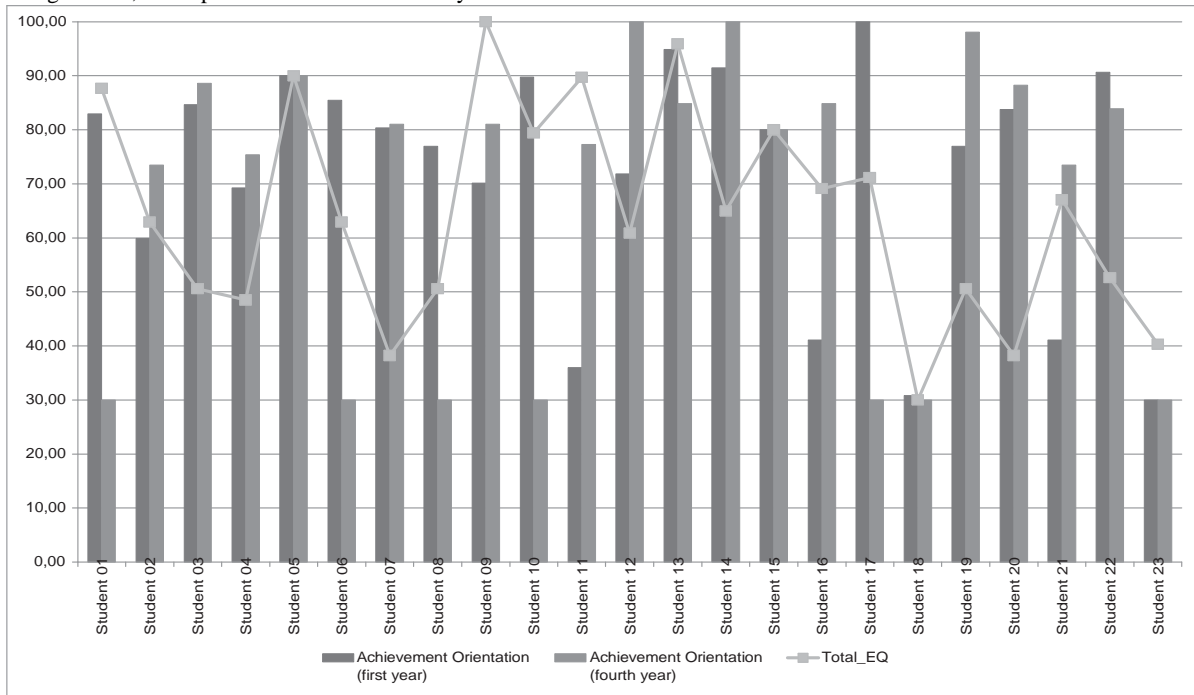

Figure 2. Comparison of the Total EQ with first year, and fourth year of achievement orientation

At the end of the fourth year, the invariability of the findings obtained in the first year is seen clearly. In some of the subjects, the reason behind very low end-of-year achievement grades at the end of the 4th year was dropping out due to various reasons or otherwise not being in a graduation position yet.
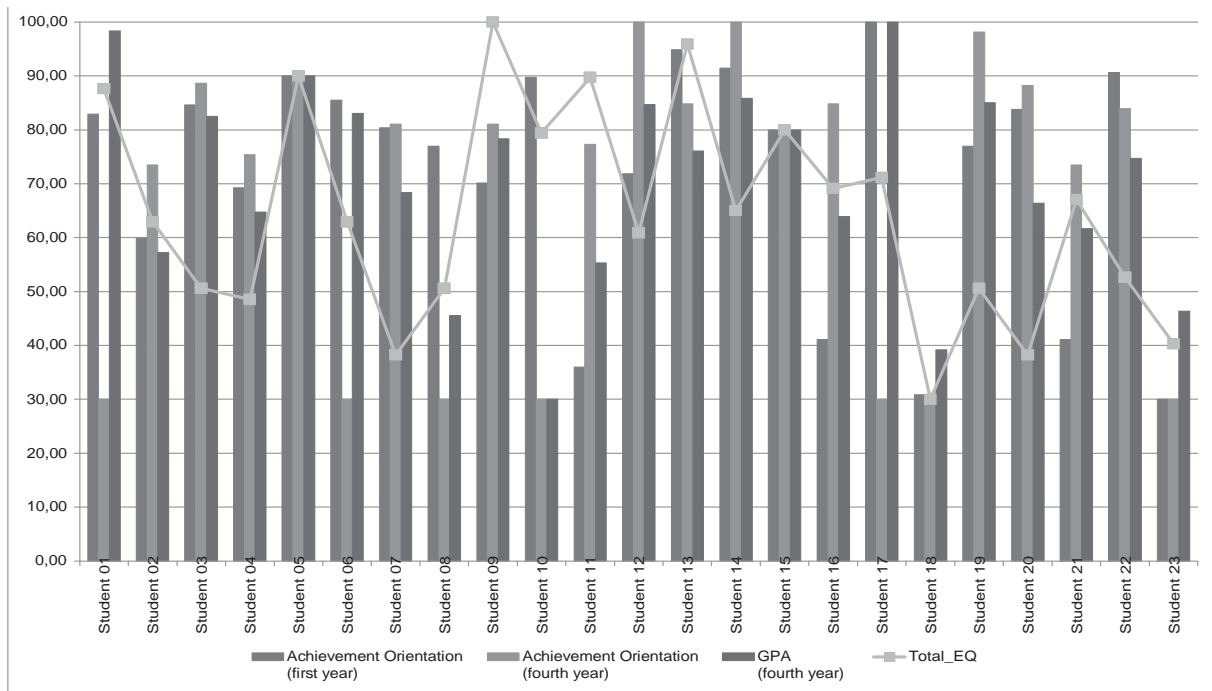
Figure 3. Comparison of the Total EQ with first year, first year and fourth year of achievement orientations, and GPA.

The validity of this study was also tested through a comparison of the grades received by students for all architectural education courses (GPA). Here, the correlation between emotional intelligence levels and grade point averages of students are similar to the findings from the first year (Figure 3). Achievement orientation maintains an up to date personal development plan and takes action to ensure personal development takes place in four years. It is shown that achievement oriented individuals place a similar value with their own personal EQ.

6. DISCUSSION AND SUGGESTIONS

The findings determined with this field study can be addressed from two different aspects: First, in terms of evaluation of the individual's learning; and second, in terms of the effects of the findings on architectural design education. When we take intrinsic motivation as the most important factor affecting achievement orientation, the following conclusions can be made with regard to individual's learning:

- Of these aspects, emotional self-awareness, assertiveness and self-actualization óincluded under interpersonal- inform about the individual's intrinsic motivation. The higher the scores of these aspects, the higher the level of intrinsic motivation of an individual is. The individual's achievement orientation is in direct proportion to his intrinsic motivation. As intrinsic motivation increases, so

does the achievement orientation.

- Ensuring extrinsic motivation in addition to the individual's intrinsic motivation will further strengthen achievement orientation, yet extrinsic motivation alone is not enough for achievement orientation.
- The measurability of intrinsic motivation helps the individual in developing self-regard and improving cognitive process.
- An individual with intrinsic motivation will not give up in the face of failure and continue to work.

When we take intrinsic motivation as the most important factor affecting achievement orientation, the following conclusions can be reached with regard to architectural design education:

- As intrinsic motivation increases, achievement orientation also increases, which is important in terms of ensuring that the architectural design education achieves its purpose.
- Workshops where students can overcome challenges and manifest and feed their creativity and which motivate the student to achieve the highest level of excellence indeed provide a very devoted setting. In such an environment, interactions with individuals with high intrinsic motivation will make achievement easier. Measuring the intrinsic motivation levels of the students will also offer useful information to the

project coordinator running the workshop.

- An individual well acquainted with aspects of emotional intelligence also has a good knowledge of his self, which has a positive effect on the relationship between student-project coordinator and student-other students in an interactive workshop environment, and which therefore likely facilitates learning.

- Deciding to achieve the targets set for the design education, effectively determining our behaviours during this process and implementing them decisively can be identified as the action plan of a student with achievement orientation.

Modern education systems have shown that it is not possible to teach anything unless the person wants it. Intrinsic motivation is what makes the person learn something based purely on curiosity, for the satisfaction he will get from learning it, without seeing it as a chore. In the light of these conclusions, the suggestions that can be given to project coordinators taking part in design education can be listed as follows: Focus on process and progress rather than results and external evaluations; emphasize the role of effort in learning; tolerance towards occasional risk-taking behaviours of students; help students in seeing the close relationship between student effort and results; use reinforcements economically, reinforce behaviours that are not in a reward status; emphasize the importance of gaining competence based on the intelligence increase model; respect those who achieve success through effort.

To create a positive psychological environment in design workshops and increase student motivation, the following programs and suggestions can be taken into consideration:

- Giving importance to target-setting and self-orientation.

- Offering choices to students in the learning environment

- Reinforcing student behaviours to help them achieve their highest targets.

- Encouraging teamwork through group-learning and problem-solving experiences.

- Establishing self-evaluation and self-assessment techniques instead of social comparisons of achievement.

- Teaching the time management skills [21].

In order to equip the student with a desired behaviour in the workshop, project coordinators should keep the learning motivations of the students high. There is no specific model to instil behaviours. The student must believe that what he learns at the workshop are things that are really necessary to learn, and must be given the opportunity to discover how these teachings can be used in problem-solving in the design area. As such, motivation should also be designed in an activity system that has continuity and integrity. A

smiling, patient, consistent, honest and understanding project coordinator can interact with students better. It is particularly important that the project coordinator uses these traits to emphasize at every opportunity that failure should never be feared, especially for introvert students. Individual differences should always be kept in mind. The workshop requires an academic achievement level that is neither too high nor too low. If the achievement level perceived by the student is too high, then the student will have a low effort level, and will even quit working towards success even when he needs competence in order to succeed. If the achievement level perceived by the student is too low, then the student will tend to be overconfident and will believe that there is not anything new to learn. In individuals who have problems in learning how to learn, there may be motivation problems. It has been proven, both theoretically and through experiments, that it is impossible for such persons to achieve success without identifying and solving the root causes of the problem. It is now understood that equipping teachers, who are the main pillars of education, with new insights on motivation is a contemporary need. Likewise, it becomes a must to equip students, who are the raison d'être of the system, with an informed attitude towards achievement orientation.

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