

*Full Length Research Paper*

## High school students' time management skills in relation to research anxiety

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**This study aimed to determine the opinions of high school students relating to time management and present a correlation of their time management skills with demographic variables, as well as examining the relation between their level of research anxiety and time management skills. The study group composed 270 12th-grade students (127 males and 143 females) from the same socio-economic level attending seven state high schools in Ardahan province, Turkey. Pearson coefficient of correlation, t-test, and weighted mean and standard deviation values were used. Results showed a meaningful relation in the negative correlation ( $r=-.188^{**}$ ,  $p<0.01$ ) between time management skills and research anxiety level, and there was a meaningful relation between time attitudes, the second factor on the time management scale, and research anxiety in the negative direction ( $r=-.210^{**}$ ,  $p<0.01$ ). We conclude that as students' time management skills improve, their research anxiety level decreases.**

**Key words:** Time management, research anxiety, high school.

### INTRODUCTION

In today's fast-paced world, the individual's possibility of using time efficiently is decreasing day by day. The tasks expected from people at work are increasing every year and institutions and organizations demand different things from their employees every day. Additionally, working life is becoming more complicated and the parameters affecting working life are increasingly changing. All these changes can be tolerated up to a point; however, that the rate of change is rising in itself reveals the insufficiency of time at a certain level (Uluşahin, 1999). Given that every individual has the same amount of time at their disposal, in fact, many complain they do not have enough time. Yet some manage to do more work compared to others in the same amount of time. To understand how this is possible is an

important issue (Keenan, 1996).

The criterion of success is not to be successful as such but to reach one's target in the fastest way (Yeşilyaprak, 2003). People who know how to use their time in the correct place and at appropriate times know their priorities and make plans to realize them accordingly. As for planning, this makes two contributions in arranging an individual's life. The first shows how to reach the desired point from where you are. The second defines how to reach the desired point in the shortest time (Efil, 1999). Sabuncuoğlu and Tüz state that the time you feel is different from the time that clocks show (cited in: Varışoğlu et al., 2012). Although the time shown on the clock is linear and sequential, each second is not more valuable than the other. However, the time we feel and

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are experiencing is quality time. In the time referred to here it is not important how long it lasts; it is more important how much merit we obtain (Sabuncuoğlu et al., 2010 p 6).

Although time is extremely important, at the same time it is the most difficult to define and most abstract thing in our lives, something everybody feels but cannot touch and is not reversible (Passig, 2005). According to another definition, contrary to sources such as money, material, machinery and talent, time is a non-renewable, irreplaceable and irremediable source. It continuously proceeds and disappears (Eilon, 1993 p 255). Passig (2002) stresses two dimensions of the concept of "time", namely, physical and psychological. While physical time is referenced via clocks and watches, although it is related to the consciousness, both dimensions are made up of time units called psychological moments. According to Smith (1998), time is a relative concept, though it exhibits multidimensionality with its physical, philosophical, psychological and sociological features. It is as a result of this relativity that the same duration of time is perceived as shorter or longer by different individuals. Time is defined as a continuous process in which events come from the past and follow each other into the future. Çelik (2002) explains time as the necessary duration to carry out certain jobs or work.

As to the management of time, Erdem (1999) defines it as the implementation process of management functions such as planning, organizing and controlling one's own activities in order to reach targets in an individual's private and working life in the most efficient and effective way. Sayan (2005) defines time management as an opportunity to provide more time for better planning of a career, preparing for the future, reading more and learning more, following developments and improvements in technology, sparing more time for family members and acquaintances, entertaining, thinking, creating new ideas and starting new projects. To Uğur (2000 p 18), time management is the effort of using time efficiently as an essential resource to reach aims and targets. Efil (2000) define it as an individual's power to determine a particular target among various priorities, most of which are vital, and achieving the target(s) determined, and also the skill of using a certain time period most efficiently to achieve a goal. Özgen (2000) defines it as planning time that enables us to carry out goals, targets and activities within our social life. Alay and Koçak (2003) state that comprehending and implementing time management does not solve the problem for individuals in itself, but it does help individuals reach effective solutions and consequences.

Uğur (2000) defines using time efficiently and effectively as;

1. Having clear targets and aims
2. Planning

3. Determining priorities
4. Assessing urgency

Çağlayan and Göral (2009) indicate that the concept of time is perceptive and it is essential that time be used correctly and effectively from childhood. From adolescence onwards, a sense of time management should be developed. According to Passig (2002), although time management starts to develop from early childhood, it is completed in adolescence. Passig (2005) reports two main approaches in the period from infancy to adolescence related to the development of time management. The first is the psycho-analytic approach and the second is the cognitive approach. In the psycho-analytic approach, according to Freud, perception is a part of ego development and being able to postpone pleasure by the child. On the other hand, it is made up of single moments in infancy and therefore events are not related to each other and can be forgotten very soon. As the child grows up, the memory develops parallel to this growth and enables the child to connect events with each other. The child starts to understand that events happen sequentially and in this way, a time matrix develops in the child. The time matrix is also a connection between the child and mother.

In the cognitive approach, Piaget states that the child lives in a world where there is no concept of time and that the time concept is realized gradually. In the first years of childhood, although the ability to remember, which is a pre-condition in development of the concept of past, future and present cannot be attained, it is assumed that time is experienced as the sum of all events in early childhood. Therefore, the small child lives in a world composed only of moments. However, the child understands deeply the difference between past, future and present after the age of five. Child comprehension of time in all its dimensions occurs between the ages of 14 and 18, which we refer to as adolescence. The development of using time effectively in childhood and adolescence is a matter that needs to be improved. Adolescents especially have to achieve complicated tasks such as social development, identity development, preparing for their future profession, and planning the future and academic success (Seginer and Lilach, 2004). During all these complicated developmental tasks, it is important for adolescents to be successful in comprehending the importance of time, realizing habits related to usage of time, and changing incorrect behaviors if they have developed them, because in an environment where consciousness of time cannot be achieved, an individual's control over life also disappears, and development depends on coincidence and luck.

Therefore, people are required to group their tasks and to group them in accordance with priorities. Time management is actually self-management; that is, as well as providing control over events we experience, an

individual directs events by manipulating them. The success of an individual in time management can be determined through their answers to two questions; "How many events happen as we wish them to be?", and, "What is our role in the development of these events?" (Güçlü, 2001).

There is a bi-directional relationship between the terms "time management" and "anxiety". The individual who has not developed a consciousness of time will experience negative consequences such as a high level of anxiety, lack of confidence, stress, and bad habits in terms of time usage (Özkılıç, 2003). Anxiety is usually a state of nervousness mixed with sense of insecurity and a state of anticipating the future which upsets and worries the person (Öncül, 2000). Another definition of anxiety refers to it as inner and external conflicts, encountering an unaccustomed situation, object or person, or encountering a situation or object which causes fear and obsessive thoughts (Köknel, 1982). In addition to all these definitions, environmental factors such as the rapid development of technology, scientific discoveries, increasing population, and economic hardships which intensify stress, also increase anxiety. It is assumed that everything threatening the existence of an organism's well-being constitutes anxiety. Threats of physical harm, threats to the ego, and situations demanding more than the individual's capacity all cause anxiety (Atkinson and Hilgard, 1995). The teaching of research aims to develop research awareness in society and the individual by means of adopting scientific attitudes and behaviors and the giving the student the proficiency to carry it out (Ünal and Ada, 2007 p 140). As for research anxiety, this may occur along with other behaviors, such as not doing research unless it is necessary, unwillingness to carry out research, feeling uncomfortable with the idea of doing research, feeling nervous while conducting research, and lack of confidence in doing research (Çokluk et al., 2005).

The concept of time, already influential in every part of life, has also begun to affect education deeply (Özçelik, 2006). When the importance of schooling in an individual's development is considered, time is seen one of the basic elements of productivity, similar to money, human labor and technology (Karslı, 2006). Due to the relationship between time and anxiety as active elements in the learning process, student awareness of the relation between the concept of time management and research anxiety should be raised and they should be made conscious of this. In the literature, studies on teachers and teacher candidates have mainly been carried out in terms of determining the relation between anxiety and time management (Gözel and Halat, 2010; Varışoğlu et al., 2012; Akın et al., 2013; Güleç et al., 2013). Regarding studies on the relation between time management and anxiety, we see that Eldeklioğlu (2008) analyzed the relation between high school students' time management skills and state-continuous anxiety. Misra and McKean

(2000), in their study of university students, analyzed the relation between time management, anxiety and leisure time. Most of the studies to determine the relation between time management and anxiety analyzed the time management skills of teachers and teacher candidates. Research studies on high school students' time management skills were few. It was observed that studies at high school level are predominantly related to exam anxiety, stress and state-continuous anxiety level. Given that there were no previous studies on determining the relation between time management skills and research anxiety among high school students, this topic was deemed worthy of study. The term "Research Anxiety" in this study is understood to mean "research" requested by high school teachers when they give the students homework or scientific-orientated assignments requiring the finding of external sources of information. The "anxiety" arises from the process of conducting this research.

The objectives of this study were to determine the time management skills of high school students, to evaluate the relation of students' time management skills with demographic variables, to present the students' time management skills in relation to their opinions about time management, and to determine the relation between their time management skills and research anxiety. For this purpose, answers to the following questions were sought:

1. In general, what level are the students' time management skills?
2. Is there a statistically meaningful correlation between students' time management skills and demographic variables, including "Gender", "Accommodation environment" and "Working part-time"?
3. Is there a statistically meaningful correlation between the students' time management skills and their answers to the questions below;
  - i. Do your parents allow you to manage your time by yourself?
  - ii. Do your teachers inform you about time management?
  - iii. Do you think you allocate enough time for the preparation of exams?
  - iv. Do you think you have used your time correctly up to now?
4. Is there a statistically meaningful correlation between students' time management skills and research anxiety?

## METHODOLOGY

In the study, 270 students studying in the 12th grade (male 127 and female 143) of seven state high schools run by the Ardahan Provincial Directorate for National Education, Turkey were investigated to determine the relation between their time management skills and research anxiety. For this purpose, the study was planned and conducted as a descriptive study using the

research scanning method. Before data collection, the necessary legal permission to carry out this case study was obtained from Ardahan Provincial Directorate for National Education. Students were informed about the aims and scope of the study and they participated voluntarily. Students were also told that the main outcomes of the study would be submitted for scientific publication.

### Data collection tools

Three different scales were used in this study. Firstly, the "Time Management Scale", adapted into Turkish by Alay and Koçak (2002); secondly, the "Research Anxiety Scale", developed by Büyüköztürk (1997), and finally, a questionnaire consisting of 5 closed-ended questions developed by the researcher in order to determine the opinions of students about time management, along with their demographic information.

### Time management inventory (TMI)

In collecting the data, the Time Management Inventory (TMI), translated into Turkish and analyzed for its validity and reliability by Alay and Koçak (2002), was used. For the scale, Principal Components Factor Analysis was carried out. 3 sub-headings and 27 questions were decided upon as the number of items. The inventory comprised the topics "Time planning", "Time attitudes" and "Time Consumers" and was prepared using the Likert Scale. Answers consisted of "always", "often", "sometimes", "rarely" and "never". The choices were given grades between 1 and 5. The "Time planning" sub-scale refers to long-term and short-term (daily or weekly) planning and one question was a contrary statement (item 16). There were 16 questions. Students who achieved high points in this section were those who used their time efficiently and had the right to use their own time. The "Time attitudes" sub-scale consisted of 7 questions, 4 being straight and 3 being contrary, which were aimed at what the individual does in terms of time management. The students who scored high points in this sub-scale were considered to manage their time well and to be thinking in long-term intervals. The other sub-scale was composed of 4 questions related to activities students spent their time doing negatively; in all these questions contrary expressions were used. Therefore, these items are called "time consumers". Time consumers are considered to consist of everything which keeps students from achieving their school goals.

In the validity and reliability study developed by Alay and Koçak (2002), reliability was 0.87 for all scales. In the sub-scales, Cronbach alpha values were 0.88 for "time planning", 0.66 for "time attitudes" and 0.47 for "time consumers". With the scale used in this study, different reliability coefficients were obtained for the 3 factors making up the scale and for the whole scale. This scale was also used in other studies with different sample groups. For example, in a study by Demirtaş et al. (2005), the reliability coefficients of the scale were found to be: for the time planning dimension 0.84, for time attitudes 0.59, for time consumers 0.45, and for the scale in general 0.80. In a study analyzing the level of time management in teacher candidates, Gözel and Halat (2010) calculated the scale's reliability coefficient as; 0.83 for the time planning dimension, 0.59 for time attitudes, 0.43 for time consumers, and 0.81 for the scale in general. When the reliability value of the factors of time management scale used in the present study was analyzed, they were found to be 0.82 for time planning, 0.58 for time attitudes, 0.46 for time consumers and 0.70 for the scale in general. The third factor, the time consumer factor's reliability coefficient, was observed to be lower in this study and in previous studies. The possible cause for this according to Gözel and Halat (2010) is that it

resulted from the answers of smoking students to the 26<sup>th</sup> item (Do you smoke a packet of cigarettes a day?). Since they answered negatively, it was assumed to be a time consumer. Erdul (2005) stated that researchers consider these alpha levels resulted from the few questions gathered in this sub-scale. The interval for the degree of student involvement in the scale items was calculated with the formula  $(n-1/n)$ . The calculation was found to be 0.80 with 1-5 intervals. The limits for the positive items participating level in our scale were determined as; 1.00-1.80 (none), 1.81-2.61 (rarely), 2.62-3.42 (sometimes), 3.43-4.23 (often) and 4.24-5.00 (always).

### Research Anxiety Scale (RAS)

To collect data in order to determine students' research anxiety, the "Research Anxiety Scale" developed by Büyüköztürk (1997) was used, consisting of 87 reliability coefficient and quinary Likert type questions. The answers given to the items in the scale were coded numerically from 5 to 1. Expressions reflecting the anxiety state ( $n=7$ ) were from "completely agree" to totally disagree". The expressions directly reflecting the state of anxiety ( $n=5$ ) and contrary expressions were coded vice versa (i.e. 1-5). Thus, the highest point achievable in the scale reflected a high level of anxiety, while low points refer to a low anxiety level. The lowest point that could be obtained on the scale was 12 and the highest was 60.

### Data analysis

For students participating in the study group, the "Time Management Inventory", "Research Anxiety Scale" and "Information Questionnaire" were applied at the same time. The data obtained from the scales were analyzed using SPSS 16.0 software program. Pearson Correlation Method was used to determine the relation between time management and research anxiety level; to determine whether students' demographic variables of "gender", "accommodation environment" and "working part time" made a difference in terms of their time management skill. t-test was applied in order to analyze the relation between time management skills and student thoughts on time management ( $p<0.05$ ), thereby interpreting their level of relevance. In addition to this, the weighted mean and standard deviation value of their answers to the items in the time management scale were calculated.

## RESULTS

The findings obtained at the end of the analysis are shown in Tables 1 to 5.

According to the correlation analysis in Table 1, a meaningful relation low level in a negative direction was found between total time management and total research anxiety level ( $r=.188^{**}$ ,  $p<0.01$ ), and between time attitudes, which are sub-factors of time management ( $r=.210^{**}$ ,  $p<0.01$ ). According to this finding, as the level of students' time management skills rises, their research anxiety decreases, i.e. they are inversely correlated.

Regarding Table 2, a statistically meaningful difference could not be found as to the students' gender, accommodation environment, working part time, parents allowing them to use their own initiative for time management, their opinions on their teachers' informing them about

**Table 1.** Correlation between time management inventory (TMI) and scores on research anxiety scale (RAS).

| Correlation value between point average of time management inventory and research anxiety point average |                       | Research anxiety scale total research anxiety |
|---|-----------------------|---|
| Time Management Inventory   | Total time management | -.188**                                       |
|   | Time planning         | -.099   |
|   | Time attitudes        | -.210**                                       |
|   | Time consumers        | -.107   |

\*\*p&lt;0.01.

**Table 2.** Relation between student's time management skills and demographic variables.

| Variables  |        | N   | WM    | Ss   | t     | df  | p     |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|--|--------|-----|-------|------|-------|-----|-------|--|------|-----|-------|------|-------|-----|-------|------|-----|-------|------|--|-----|-----|-------|------|-------|-----|-------|----|-----|-------|------|--|-----|-----|-------|------|-------|-----|-------|----|-----|-------|------|--|-----|-----|-------|------|-------|-----|-------|----|-----|-------|------|--|-----|----|-------|------|-------|-----|-------|----|-----|-------|------|--|-----|----|-------|------|-------|-----|-------|
| Gender   | Female | 143 | 3.064 | .479 | 1.679 | 268 | .094  |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|  | Male   | 127 | 2.977 | .356 |       |     |       | Accommodation environment                                  | Home | 154 | 3.039 | .402 | .716  | 268 | .474  | Dorm | 116 | 3.002 | .459 | Do you have a part time job?                               | Yes | 30  | 3.049 | .421 | .348  | 268 | .728  | No | 240 | 3.020 | .429 | Do your parents allow you to manage your own time?         | Yes | 218 | 3.038 | .440 | 1.195 | 268 | .233  | No | 52  | 2.960 | .367 | Do your teachers inform you about time management?         | Yes | 213 | 3.042 | .418 | 1.366 | 268 | .173  | No | 57  | 2.955 | .455 | Do you think you spared enough preparation time for exams? | Yes | 86 | 3.044 | .446 | .541  | 268 | .589  | No | 184 | 3.014 | .419 | Do you think you have used time correctly up to now? | Yes | 73 | 3.109 | .456 | 2.008 | 268 | .046* |
| Accommodation environment                                  | Home   | 154 | 3.039 | .402 | .716  | 268 | .474  |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|  | Dorm   | 116 | 3.002 | .459 |       |     |       | Do you have a part time job?                               | Yes  | 30  | 3.049 | .421 | .348  | 268 | .728  | No   | 240 | 3.020 | .429 | Do your parents allow you to manage your own time?         | Yes | 218 | 3.038 | .440 | 1.195 | 268 | .233  | No | 52  | 2.960 | .367 | Do your teachers inform you about time management?         | Yes | 213 | 3.042 | .418 | 1.366 | 268 | .173  | No | 57  | 2.955 | .455 | Do you think you spared enough preparation time for exams? | Yes | 86  | 3.044 | .446 | .541  | 268 | .589  | No | 184 | 3.014 | .419 | Do you think you have used time correctly up to now?       | Yes | 73 | 3.109 | .456 | 2.008 | 268 | .046* | No | 197 | 2.992 | .412 |  |     |    |       |      |       |     |       |
| Do you have a part time job?                               | Yes    | 30  | 3.049 | .421 | .348  | 268 | .728  |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|  | No     | 240 | 3.020 | .429 |       |     |       | Do your parents allow you to manage your own time?         | Yes  | 218 | 3.038 | .440 | 1.195 | 268 | .233  | No   | 52  | 2.960 | .367 | Do your teachers inform you about time management?         | Yes | 213 | 3.042 | .418 | 1.366 | 268 | .173  | No | 57  | 2.955 | .455 | Do you think you spared enough preparation time for exams? | Yes | 86  | 3.044 | .446 | .541  | 268 | .589  | No | 184 | 3.014 | .419 | Do you think you have used time correctly up to now?       | Yes | 73  | 3.109 | .456 | 2.008 | 268 | .046* | No | 197 | 2.992 | .412 |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
| Do your parents allow you to manage your own time?         | Yes    | 218 | 3.038 | .440 | 1.195 | 268 | .233  |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|  | No     | 52  | 2.960 | .367 |       |     |       | Do your teachers inform you about time management?         | Yes  | 213 | 3.042 | .418 | 1.366 | 268 | .173  | No   | 57  | 2.955 | .455 | Do you think you spared enough preparation time for exams? | Yes | 86  | 3.044 | .446 | .541  | 268 | .589  | No | 184 | 3.014 | .419 | Do you think you have used time correctly up to now?       | Yes | 73  | 3.109 | .456 | 2.008 | 268 | .046* | No | 197 | 2.992 | .412 |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
| Do your teachers inform you about time management?         | Yes    | 213 | 3.042 | .418 | 1.366 | 268 | .173  |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|  | No     | 57  | 2.955 | .455 |       |     |       | Do you think you spared enough preparation time for exams? | Yes  | 86  | 3.044 | .446 | .541  | 268 | .589  | No   | 184 | 3.014 | .419 | Do you think you have used time correctly up to now?       | Yes | 73  | 3.109 | .456 | 2.008 | 268 | .046* | No | 197 | 2.992 | .412 |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
| Do you think you spared enough preparation time for exams? | Yes    | 86  | 3.044 | .446 | .541  | 268 | .589  |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|  | No     | 184 | 3.014 | .419 |       |     |       | Do you think you have used time correctly up to now?       | Yes  | 73  | 3.109 | .456 | 2.008 | 268 | .046* | No   | 197 | 2.992 | .412 |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
| Do you think you have used time correctly up to now?       | Yes    | 73  | 3.109 | .456 | 2.008 | 268 | .046* |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |
|  | No     | 197 | 2.992 | .412 |       |     |       |  |      |     |       |      |       |     |       |      |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |     |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |    |     |       |      |  |     |    |       |      |       |     |       |

\*p&lt;0.01.

time management, and their opinions about whether they spared enough time to prepare for exams and their time management skills ( $p>0.05$ ). However, it was found that there was a statistically meaningful difference between the variables of whether students had used their time effectively up to that point and their time management skills. This difference resulted from students who thought they had not spent their time correctly ( $p<0.05$ ). Statistical data regarding the "Time Planning" subscale of time management are given in Table 3.

As a result of measuring students' time management skills, it was determined that in the first factor of the scale, the students' highest average was the two items "Do you determine your priorities and follow them?" (=3.46) and "Do you carry things with you which you can study in case you have free time to work on them?" (=3.29). The lowest average was the two items "Do you

make a list of things you have to do each day?" (=2.33) and "Do you spend time planning every day?" (=2.47). When general average of students answers (=2.88) to explanations in planning factors are considered, in addition to their medieval -level attitude in planning the time, majority of students have ability of their priorities. On the other hand, even though we confirmed that they keep work items in order to complete their on-going researches, most of students cannot execute their studies in a planned way. Statistical data regarding the "Time Attitude" subscale of time management are given in Table 4.

It was seen that in the second factor of the time management scale, "Time Attitudes" (Table 4), the two items on which students achieved the highest average was "Can you make minor decisions promptly?" (=3.78) and "Do you in general feel that you yourself plan your

**Table 3.** Replies to time planning subscale of time management inventory (TMI).

| Time management inventory   |      |       |
|---|------|-------|
| Time planning (short and long term planning)  | WM   | Ss    |
| 1. Do you plan your day before you start?   | 2.89 | 1.352 |
| 2. Do you determine a series of targets for each week at the beginning of the week?   | 2.67 | 1.179 |
| 3. Do you spend time planning every day?  | 2.47 | 1.187 |
| 4. Do you decide upon some targets for yourself every day?  | 3.19 | 1.084 |
| 5. Do you make a list of things you have to do each day?  | 2.33 | 1.185 |
| 6. Do you program the activities that you have to do on school days?  | 2.98 | 1.396 |
| 7. Is it clear what you want to accomplish in the following week?   | 2.74 | 1.176 |
| 8. Do you fix a date to complete your studies?  | 2.91 | 1.272 |
| 9. Do you try to program the best time for tasks requiring a lot of effort?   | 3.12 | 1.154 |
| 10. Do you mark important dates for you on a calendar (date of exams, assignment submission dates, etc.)?                   | 3.04 | 1.498 |
| 11. Do you determine a series of targets for the school term?   | 2.94 | 1.224 |
| 12. Do you duplicate and file articles and scientific studies in case you need them later, even if they are not needed now? | 2.49 | 1.365 |
| 13. Do you revise your lesson notes, even if you do not have an exam soon?  | 2.84 | 1.178 |
| 14. Do you carry things with you which you can study in case you have free time to work on them?                            | 3.29 | 1.270 |
| 15. Do you determine your priorities and follow them?   | 3.46 | 1.139 |
| 16. Do you carry out matters concerning yourself every week without planning or pursuing them beforehand?                   | 2.84 | 1.226 |
| Mean  | 2.88 | .650  |

WM: weighted mean; Ss: standard deviation.

**Table 4.** Responses to time attitudes subscale of Time Management Inventory (TMI).

| Time attitudes  | WM   | Ss    |
|---|------|-------|
| 1. Do you use your time constructively?   | 3.21 | 1.091 |
| *2. Do you need to improve yourself in planning your time?  | 2.48 | 1.275 |
| 3. Do you in general feel that you yourself plan your time?   | 3.33 | 1.166 |
| 4. Do you usually think that you will be able to achieve your all goals in the time given to you?                                       | 3.20 | 1.233 |
| 5. Can you make minor decisions promptly?   | 3.78 | 1.141 |
| *6. Do you often find yourself busy with tasks that prevent you from doing your school work only because you cannot say "No" to people? | 2.78 | 1.340 |
| *7. Do you find yourself waiting if you do not have anything to do?   | 2.91 | 1.249 |
| Mean  | 3.09 | .539  |

\*Items graded negatively. WM: weighted mean; Ss: standard deviation.

time?" ( $\bar{X}$  =3.33). The two items with the lowest average was "Do you need to improve yourself in time planning?" ( $\bar{X}$  =2.48) and "Do you often find yourself busy with tasks that prevent you from doing your school work only because you cannot say "No" to people?" ( $\bar{X}$  =2.78). Considering general average of students answers ( $\bar{X}$  =3.09) to explanations in time attitudes, in addition to their medieval-level attitude in this respect, we determined that students make a quick reaction in case of trivial decisions and, even though students state that they plan their time, most of them indicate that they need to be improved in respect of time planning They also

stated to consider their priorities in school works. Statistical data regarding the "Time Consumer" subscale of time management are given in Table 5.

As to the third factor on the time management scale, "Time Consumers" (Table 5), the item with the highest average was "Do you smoke one packet of cigarettes a day on average?" ( $\bar{X}$  =4.17). The item with the lowest average was "Do you usually continue working on a very important school assignment the night just before the due date?" ( $\bar{X}$  =2.81). Regarding general average of student answers ( $\bar{X}$  =3.02) to explanations in time consumers factor, we determined a medieval-level attitude.

**Table 5.** Replies to time consumers subscale of Time Management Inventory (TMI).

| <b>Time consumers</b>   | <b>WM</b> | <b>Ss</b> |
|---|-----------|-----------|
| *1. On a typical school day, do you spend more time on private issues than on school tasks?       | 3.24      | 1.206     |
| *2. Do you spend time on habits or activities from which you do not benefit at all?               | 3.51      | 1.329     |
| *3. Do you smoke one packet of cigarettes a day on average?                                       | 4.17      | 1.372     |
| *4. Do you usually work on a very important school assignment the night just before the due date? | 2.81      | 1.411     |
| Mean  | 3.43      | .805      |
| General average   | 3.02      | .427      |

\*Items graded negatively. WM: weighted mean; Ss: standard deviation.

## DISCUSSION AND CONCLUSION

This study examined the relation between 12<sup>th</sup> grade students' time management skills and their research anxiety level; also the relation between students' demographic variables (gender, accommodation environment, working part time) with their time management perception and between students' thoughts about time management and their time management perception. According to the findings of the study, there is a meaningful relation between time management and research anxiety in a negative direction. In addition, a meaningful relation in a negative direction was found between time attitudes, which is a sub-scale of the time management scale, and research anxiety. According to these findings, as students' time management skills rise, their level of research anxiety decreases. In other words, as their anxiety level increases, their ability to control time fades and becomes more difficult.

The findings of this study show similarities to some previous studies. Eldeklioğlu (2008) found a meaningful correlation in a negative direction between time management and anxiety. Erdul (2005) determined a meaningful relation in a negative direction between anxiety level and time management skills in a study carried out with university students. Macan et al. (1990) also found a meaningful correlation in negative direction between stress level and time management skills in their study of university students. Another similar result was provided by Kaya et al. (2012), suggesting, based on a negative correlation, that the level of continuous anxiety of students decreases in line with an increase in their time management abilities. Misra and McKean's (2000) study also previously agreed well with the aforementioned finding, verifying a negative correlation between time management attitudes and the academic stress levels of high school students.

In consequence of studying students' time management perception according to the variable of gender, a meaningful difference could not be found between groups, as confirmed by Ozsoy (2014), suggesting the absence of a significant relationship between the variables of

gender and time management skills in physical education teachers. It is also concluded in Ozsoy (2014) that the score of students who were living with their family was higher than those of students staying in a dormitory. Lastly, the time management score of students working in a part-time job was higher than that of non-working students. However, this situation did not create a statistically meaningful difference between their time management ratings.

In addition, when the correlation between students' opinions about time management and their time management total score is considered, it was seen that there was a statistically meaningful difference between the answers to the question "Do you think you used time correctly so far?", and that this difference resulted from those who thought they used their time correctly up to then. From this point of view, it can be said that someone who regrets they did not use time properly is likely to lack the time management skill.

When the average scores of students' answers to the scale items were analyzed, it was determined that a majority of them determined their own priorities and pursued them; that they could make minor decisions promptly and planned their time by themselves although most of them did not carry out their daily tasks in a planned manner; they smoked a packet of cigarettes a day; and they expressed the need to improve themselves in time planning. This matches data reported by Wahat et al. (2012), indicating that university students possess the ability to plan their time in their short, medium and long-term studies. In addition, Misra and McKean (2000) revealed that the academic stress and anxiety of students decreases in line with the use of efficient time management techniques.

From these findings, it may be concluded that although students planned their time in line with their priorities, they needed professional help as to how they should use their time more actively. Need for such academic support has recently been remarked upon by Liu (2009), working with middle-school students, who draws attention to the benefit of remediation programs in regard to time management and suggests that the development of time

management assessment can benefit students at risk.

When the research findings are assessed in general, we can say that the issue of time management should be emphasized more in schools; that it is necessary the concept should be explained to students at every stage of education, not only at high schools. To achieve this, there should be programs prepared to lessen research anxiety and increase the time management skills of the students via high school counseling services, as stressed by Kaya et al. (2012). This is also confirmed by Eldeliklioğlu (2010), revealing with prospective teachers that those students having time management skills are psychologically healthy individuals. Similarly, regarding preservice teachers, Güleç (2013) found that activities which teach time management techniques and decrease anxiety should be included in every stage of education, starting from pre-school.

On the basis of this study, if we are to make some concrete suggestions, it is essential that activities for teaching time management techniques and lessening research anxiety should occupy a more important place in educational institutions, especially as part of developmental and preventive counseling in high school counseling services. Once it is discovered that students regret their wasteful time usage and need professional support to be able to use time more productively, it is necessary to perform catch-up-work and activities for the students so that they can use their time more actively and be more planned henceforth. As such, Lafcı and Öztunç (2009) signaled that students complained about time limitations and thus could not use their time efficiently in school, leading to an increase in their anxiety. Reducing stress in students can also be achieved through appropriate methods such as effective time management, social support and positive reappraisal (Blake and Vandiver, 1988; Mattlin et al., 1990). Associated with the use of these methods, Nadinloyi (2013) also emphasized that a student's time management skills can be enhanced in this way, and suggested, based on an experimental study, that university students showed a significant positive difference in terms of time management skills in favor of the experimental group.

## SUGGESTIONS

On the basis of this study, if we are to give some concrete suggestions, it is essential that activities for teaching time management techniques and lessening research anxiety should take more place in every stage of education institutions, especially as part of developmental and preventive counselling studies of high schools' counselling services; once it is discovered that students have regret about time usage and they need professional support to be able to use time actively, it is necessary to carry out catch-up-work and activities for

the students so that they can use their time more actively and be more planned henceforth.

## Conflict of Interests

The authors have not declared any conflict of interests.

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