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Our journal has been published for over five years. It has been followed by many people and a lot of articles have been sent to be published. 322 articles have been sent to referees for forthcoming issues. They will be published according to the order and the results. Articles are sent to referees without names and addresses of the authors. The articles who get positive responses will be published and the authors will be informed. The articles who are not accepted to be published will be returned to their authors.

We wish you success and easiness in your studies.

Cordially,

1st April, 2015

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DEFENSE MECHANISMS USED BY UNIVERSITY STUDENTS TO COPE WITH STRESS

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ABSTRACT

People learn how to behave in a specific situation. But it’s always possible to encounter new or unwanted stations which our previous experiences couldn’t be enough to overcome. Tension and pressure people feels as a result of the changes in the environment is called stress, and in today’s world stress is regarded as a part of the daily life. Avoiding exposure to environmental stressors and avoiding or minimizing other changes during periods of time require significant adaptation or readjustment.

This study is about university students’ stress sources. Although there are tens of defense mechanisms, in this study, 10 best-known, or most commonly used defense mechanisms, are investigated. The research was conducted with the students taking the course of “psychology” thought by the researcher. After the researcher taught the subject of “defense mechanisms” found in the scope of this course, the students were asked to note down the defense mechanisms them “constantly”, “occasionally” and “never” used. In order to help the students remember the 10 defense mechanisms investigated, they were provided with an informative booklet explaining these defense mechanisms briefly. A total of 587 students participated in the study.

The mechanisms the most frequently used especially by the female participants were “repression”, “denial” and “displacement”. The male participants’ use of the mechanism of “projection” was twice higher than the female participants’ use of the same mechanism. As for the mechanism of “sublimation”, the female participants used this mechanism with rate twice higher than the male participants. With respect to the mechanisms most frequently used, the difference between the female and male participants was found significant only for the mechanisms of “projection” and “regression”.

Key Words: Stress, defense mechanism, university students.

INTRODUCTION

On Saturday morning, you wake up, and it is almost ten o’clock. However, you have actually set up the alarm clock for eight o’clock. Didn’t it ring? Or if so, didn’t you hear it? Anyway, it is not the right time to think about it; you will have guests for the lunch at home. You rapidly think about what you could do to make the most of the limited time... You want to go to the toilet, but you see that the electricity has gone out. You can not take a shower as the water-heater is electrically driven. All the appliances in the kitchen are electrical. This means you will not be able to cook the foods you bought for the meal. However, you can still save the day. You can buy ready-made foods from a shopping center. It will not be perfect but better than nothing. You immediately dress up, go to the garage and run the car. At that time, you remember that the garage gate is electrical.

You go out of the car and try to open it manually, but it does not work. While you try to open the door, your clothes get stained with the rust and dirt on the door... What would you feel in such a case? If you are a common type of person like most of us, you will say you are “under stress”.

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People learn how to behave in a specific situation. However, when you encounter a new situation, it could not be possible to cope with that situation with the help of your previous experiences. However, we want to overcome any problem in one way or another, but we meet several obstacles in the process (Bandura and Walters, 1963).

**PROBLEM**

The changes that occur in the environment where individuals live are known as stress that they experience due to the desires and expectations requiring adaptation. Therefore, stress is the pressure and tension that individuals feel and could be regarded as a part of the daily life. Most of us think that stress results from such external factors as school, family, friends and illness (Dyson and Renk, 2006). However, these factors are not themselves stressful events. What makes them stressful is our interpretations and internal responses (Deniz and Yılmaz, 2005; Kaya et.al, 2007). I mean what determines stress is not just that external factor but its interaction with the individual.

University students have a number of sources of stress. These sources range from attempts to meet the academic expectations to financial problems, from adaptation to new environments to the problems experienced in establishing new friendships (Dyson and Renk, 2006). There are a number of symptoms of stress: physical, behavioral, emotional, spiritual and psychological (http://www.burem.boun.edu.tr).

Low level of stress could be considered positive as it provides the energy to activate the individual. However, when the level of stress is high, both productivity and the pleasure with life could decrease and problems in the relationships with the environment could occur (Morris, 2002).

Within the context above, the stress experienced by the students is important since it causes deflection in memory and learning due to the energy spent by the brain in reaction to the stress (Ardıç, 2009). Therefore, awareness of the stressors for university students and of how frequently and which methods they use to cope with these stressors is important for students’ success and their welfare (Köknel, 1987; Lundin, 1974; Saroson, 1972).

**Coping with Stress**

Whatever its source is, stress requires harmony. Psychologists discriminate between two types of harmony: direct and defensive (Fehr, 2000). Direct coping refers to any behavior demonstrated to change a disturbing situation. For example, when our needs or desires are hindered, we either try to remove the obstacle between our goal and ourselves or give up. Similarly, when we are threatened, we try to avoid the danger either by attacking or by escaping. Overcoming stress involves the behavior and thoughts of individuals to manage the results of stressful events (Folkman, 2010; Lundin, 1974; Saroson, 1972).

Defensive coping is known as ego-defense mechanisms or as subconscious efforts for adaptation. Ways for defensive coping are sub-conscious efforts to protect the self, to avoid any damage to ego or to decrease anxiety and tension (Fehr, 2000). Defensive coping includes internal and mostly subconscious conflicts that occur when we can not emotionally tolerate either bringing an intensely threatening problem to the level of consciousness or dealing directly with that situation. Defensive coping, a kind of self-deception, refers to different ways of convincing yourself of the fact that you are not really threatened or that you do not really want something that you can not get.

Freud described the typical attitudes demonstrated by individuals to decrease or avoid anxiety. He called them defense mechanisms. According to Freud, human tends to decrease tension for the purpose of decreasing anxiety and uses defense mechanisms for this purpose. Therefore, defense mechanisms serve the function of protecting individuals from anxiety. These mechanisms could be psychologically healthy or unhealthy, yet in either case, the basic purpose is to decrease the tension (Allen, 2000; Allport, 1961).
Freud defined three main types of anxiety: reality anxiety, neurotic anxiety and moral anxiety. Reality anxiety occurs due to the real situations likely to be encountered in the environment. For example, a dog attacks as a result of a certain situation. Reality anxiety occurs due to the ego. In this type of anxiety, the most popular method for decreasing the tension is to leave the environment which could lead to damage.

Neurotic anxiety refers to subconscious fears that occur when especially subconscious sexual desires take control over ego. This type of anxiety results from the fear that might occur when subconscious desires are not met appropriately. As for moral anxiety, it occurs as a result of the fear for violating the current moral or social values. Moral anxiety occurs in the form of feeling oneself guilty and embarrassed. A comprehensive list of defense mechanisms was prepared by Anna Freud, the daughter of Freud (Fehr, 2000; Allen, 2000; Allport, 1961).

Use of Defense Mechanisms
As mentioned above, in case of any type of stress, human mind reacts in two ways. The first one involves increasing the problem-solving efforts, which is called direct coping. The second involves putting the defense mechanisms into effect. Freud’s concepts and defense mechanisms are tactics developed by ego to cope with the sub-consciousness and superego. All defense mechanisms have two common characteristics. As the first one, the individual is not aware of the fact that he or she uses these mechanisms. As for the second, these somehow damage, transform or ignore the reality. It would be beneficial here to remember that the function of defense mechanisms is to change the perceived reality for the purpose of decreasing the psychological tension experienced by the individual.

Defense mechanisms are not worth focusing on when they are used unimportant conflicts and unless they damage others. They comfort us as long as they decrease the tension and thus allow us to approach to important problems in better harmony. However, when they are overused, these defensive attempts which are regarded as a way of coping with problems become harmful. They can not solve the real problem but merely decrease our anxiety regarding the problem. If specific situations make us anxious, we may encounter them from time to time and may have to face one of them sooner or later. In such a case, the level of anxiety increases, and the situation of anxiety-attack is inevitably experienced (Köknel, 1987; Morris, 2002).

Efforts made to cope with stress are called “harmony”. Any factor that ruins the balance of harmony is perceived by the organism as a danger and leads to anxiety. As a result, the preventive and adaptive mechanisms of people are activated.

Today, there are tens of defense mechanisms defined by scientist (Karan et. al., 1981; Morgan, 2004. Of all the defense mechanisms, 10 best-known, or most commonly used, defense mechanisms are briefly explained below.

Denial
The most common defense mechanism is the denial or refusal of accepting a painful or threatening reality. Denial is a positive attitude in some cases, while it is not in others. For example, students who deny their need for studying and go to the cinema for a couple of times instead of studying will fail their exams. The fact that a mother who lost her son during a war refuses this reality and expects him to come back one day is a typical example for denial. As another example, a student receiving a low mark from an exam attributes this low mark to an assessment-related mistake made by the teacher.

Similarly, alcohol addicts or drug addicts deny their problems obvious to all people around them and claim that they do not have any problems. The functioning of denial mechanism gradually faces increasing difficulty when the ego matures and understands the reality better, and the individual spends more energy for denial.

Repression
Repression is the mechanism which is most common for wiping our painful feelings and memories and which removes distressing thoughts from the mind in a way not to remember them again. Soldiers demoralized in the battle field mostly try to forget their memories that cause them to collapse psychologically (Grinker and Spigel, 1945). According to many psychologists, repression is an indicator of a person’s struggle against internal
reactions (such as offensiveness) that conflict with feelings of repression. For example, as children, most of us are taught that violence and offensiveness are wrong attitudes.

This conflict between our emotions and values could lead to stress and a way of coping with this stress in a defensive manner means suppressing our emotions – in other words, it means deleting any awareness of underlying anger and hostility completely. To sum up, thanks to repression, inappropriate subconscious motives do not turn into behavior; disturbing thoughts come to the level of consciousness; and memories regarding what we did wrong in the past do not revive. What to repress depends mainly on cultural expectations and on the superego of the individual.

Denial and repression are the most basic mechanisms. In denial, we delete the situations that we fail to cope with, while in repression, we delete our internal reactions or our thoughts that we can not acknowledge. These psychological strategies constitute the bases of coping in other defensive forms.

**Projection**
If the problem can not be denied or repressed completely, we ruin the nature of the problem to solve it more easily. An example that could be given for this situation is reflection, in which individuals pass their repressed motives, thoughts and feelings to others. We pass our own emotions to others that we have not been able to acknowledge. Suppose you love someone, but think that your parents have always told you to behave well to others and to get along with them.

These recommendations of your parents have penetrated into your superego. When you discover that you do not actually like that person, this will cause you to feel guilty and anxious in moral aspect. The reflection mechanism will take the control and, without leading to any anxiety, create the thought of “this person does not like me”. In this way, we place the source of the conflict away from us. A director of a company who feels guilty of the way in which that company has become stronger could reflect his/her own relentless passion onto his/her colleagues. In addition, the director could also believe that his/her colleagues are relentlessly passionate and they use their power and that they only do their job.

**Identification**
The opposite of reflection is identification. We save ourselves from unwanted qualifications that we have repressed by passing them to others via reflection. We take the qualifications of a person via identification and share the achievements of that person in the same way. In this way, we avoid feeling ourselves inefficient. In other words, we adopt and then demonstrate the attitudes of a person whom we admire. A father who has not been able to achieve his goals in his profession shares the professional achievements of his son emotionally. Some prisoners gradually identify themselves with their guardians to cope with intolerable and inevitable stress in a defensive manner.

**Regression**
People under severe stress could demonstrate childish attitudes in a process called regression. Why do people demonstrate regression? According to some psychologists, an adult with the feeling of helplessness can not stand on their own legs. However, children feel themselves helpless and dependent every day. Thus, behaving like a child could make dependence or helplessness more tolerable. Although regression is not developed or appropriate, it could sometimes be used as a strategy for controlling as well. An adult having a crying jag when his/her views and thoughts are defeated could expect others to understand him/her as his/her parents did when s/he was a child.

**Intellectualisation**
In the defense mechanisms known as intellectualisation, a latent form of denial, we analyze our problems as an abstract level and cope with these problems as if they were of all people. In this way, we keep ourselves away from our emotions related to problems. Parents who, with the intention of argument, start talking about the difficulties experienced by their children at their new school intellectualise this saddening situation when they
later find themselves in a high level of discussion regarding educational philosophy. They seem to struggle for solving the problem, but, in fact, it is not. The reason is that they save themselves from these emotions.

**Reaction-formation**

This term of developing reaction refers to the behavioral form of denial that people express by exaggerating their thoughts and emotions which are totally opposite to their own feelings. Exaggeration is a clue for this behavior. A woman praising her opponent excessively might conceal her jealousy of that person’s achievement. Developing a reaction could be a way of convincing oneself that his/her motives are sincere. A father with opposite feelings regarding becoming a parent could devote most of his time to his children in an effort to prove himself that he is quite a good father.

**Displacement**

Repressed motives and emotions refer to directing them from the actual objects to other objects that will replace the actual objects. When a person who wants a lot to become a father learns that it is impossible for him to have a child, he may then feel himself inefficient. As a result, he could attach himself excessively to his cousin or to a pet. Another example for displacement could be a woman who has to behave her manager in a friendly and obedient manner all day at work yet who shouts at her husband or child at home.

**Sublimation**

Sublimation refers to transformation of repressed motives or emotions into more acceptable forms in social terms. Offensiveness may push a person into competitiveness in the business environment or in sports. A strong and insistent desire for attracting others’ attention may push a person to get interested in politics or performing arts. It is a clear fact that people who can transform their incentives of sexuality and offensiveness into more acceptable forms in social terms are in a better condition.

The reason is that they could satisfy their instinctive motives with feelings of little anxiety and guilt. Moreover, the society will benefit from the efforts and energy of such people that they spend in useful social activities related to fine arts, literature and science. We see that there are a number of different ways of coping with stress in a defensive manner. Could defensive coping be a clear sign for the fact that a person is not matured or consistent and that he is on the verge of “dissociation”? There will be no answer to this question in any way. The effects of everlasting stress could be so severe that in some cases, defensive coping not only contributes to our whole adaptation skill but also become a necessity to survive. Even in not much excessive cases, people could apply defense mechanisms to cope with stress and problems in daily life. As pointed out by Coleman and colleagues (1987), defense mechanisms are “necessary to soften failure, to soothe tension and anxiety, to fix the emotional damage and to maintain our feelings of efficacy and valuableness.” Any defense mechanism could be considered to be incongruous when it hinders a person’s functional capacity or when it leads to problems rather than solving them.

**Fantasy-formation- day dreaming**

Sweet imagination, or fantasy formation, is a way of relaxation for a person who tries to overcome the conflicts via imagination. In fantasy formation, people do not regard the events as they but imagine them as what they want them to be. People not only give up thinking about the real situation that could lead them to anxiety or frustration but also satisfy the frustrated motives at least for a certain period of time. A boy who is not respected by girls but who wants a lot to be respected could develop the fantasy of Don Juan.

A young girl who feel ashamed in a social environment and who remembers this with pain could satisfy herself by imagining wonderful things that she could have done. Fantasy formation is seen especially among adults. Studies conducted demonstrate that almost all university students allocate a majority of their time to imagination rather than studying their lessons. To a certain extent, imagination is a harmless way of avoiding realities temporarily. However, constructive activities are quite rare.

There are several other ways to cope with stress in defensive manner. Is defensive coping an obvious sign of the fact that the person has not matured enough yet and that he or she is not consistent and on the verge of
“dissociation”? The answer to this question is absolutely not “No”. There could be extremely severe effects of long-term stress. In some cases, defensive coping not only contributes to our adaptation skills but also could become necessary to go on living. In moderate cases, people could put into practice defense mechanisms to cope with daily life problems and stress.

As pointed out by Coleman and colleagues (1987), “defense is necessary to soothe failure, to decrease tension and anxiety, to fix the emotional damage, and to maintain our feelings of being valuable and efficient.” Any defense mechanism can be regarded as inadaptability only when it hinders the individual’s ability to become functional or leads to new problems rather than solving the current ones.

The present study aimed at examining the extent to which university students use 10 defense mechanisms mentioned above.

### Purpose
The overall purpose of the present study was to determine which psychological defense mechanisms and how frequently university students attending communication sciences use. For this purpose, the following questions were directed:

- What are the defense mechanisms most frequently used by students?
- What are the defense mechanisms occasionally used by students?
- What are the defense mechanisms never used by students?

### METHOD
The present study was conducted with students taking the course of “Psychology” taught by the researcher at the Faculty of Communication Sciences at Anadolu University in the academic year of 2007-2001. After the researcher taught the subject of “defense mechanisms” found in the scope of this course, the students were asked to note down the defense mechanisms they “constantly”, “occasionally” and “never” used. In order to help the students remember the 10 defense mechanisms investigated, they were provided with an informative booklet explaining these defense mechanisms briefly.

A total of 587 students, 235 of whom were female and 352 of whom were male, participated in the study. However, the number of the students responding to the questions remained under fifty percent of the total number of participating students. As the ages and education levels of the students were the same, the only independent variable was taken as gender, and the students’ responses were evaluated with respect to gender. The responses given to each question were organized depending on the number and percentage of the female and male participants. In addition, Independent Samples t-test was conducted to see whether there was a significant difference between the female and male participants in their responses.

### FINDINGS AND DISCUSSION
This section presents the findings obtained via the participating students’ responses regarding which of the 10 defense mechanisms the students “most frequently”, “occasionally” and “never” used.

According to Table 1, there was no difference between the mechanisms that the female and male students “most frequently” used. The mechanisms the most frequently used especially by the female participants were “repression”, “denial” and “displacement”. On the other hand, the male participants’ use of the mechanism of “projection” was twice higher than the female participants’ use of the same mechanism. As for the mechanism of “sublimation”, the female participants used this mechanism with rate twice higher than the male participants.
Table 1: Distribution of the Responses to the most frequently used defense mechanisms with respect to gender

<table>
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<th>Defence Mechanism</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
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<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
</tr>
<tr>
<td>1  Denial</td>
<td>15</td>
<td>17.5</td>
<td>20</td>
</tr>
<tr>
<td>2  Repression</td>
<td>16</td>
<td>18.6</td>
<td>25</td>
</tr>
<tr>
<td>3  Projection</td>
<td>4</td>
<td>4.7</td>
<td>16</td>
</tr>
<tr>
<td>4  Identification</td>
<td>7</td>
<td>8.1</td>
<td>10</td>
</tr>
<tr>
<td>5  Regression</td>
<td>6</td>
<td>7.0</td>
<td>10</td>
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<tr>
<td>6  Intellectualism</td>
<td>8</td>
<td>9.3</td>
<td>13</td>
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<tr>
<td>7  Reaction formation</td>
<td>5</td>
<td>5.8</td>
<td>16</td>
</tr>
<tr>
<td>8  Displacement</td>
<td>13</td>
<td>15.1</td>
<td>21</td>
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<tr>
<td>9  Sublimation</td>
<td>7</td>
<td>8.1</td>
<td>6</td>
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<tr>
<td>10 Imagination</td>
<td>5</td>
<td>5.8</td>
<td>12</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>86</strong></td>
<td><strong>100</strong></td>
<td><strong>149</strong></td>
</tr>
</tbody>
</table>

The higher levels of such mechanisms as denial and repression both for male and female participants are regarded as a general feature of raising a child in traditional and conservative societies. In these societies, as the problems experienced by the male and female children are solved by the family members at home and by the representatives of the authority at school, it is believed that children cannot develop their problem solving skills efficiently. Depending on this, when children encounter a problem, they either ignore - “deny” - that problem or delay – “repress” it to solve in the future – mostly because they are ugly events. In addition, the mechanisms of denial and repression are those frequently used together (http://www.cerezforum.com/).

Another defense mechanism most frequently used by the female and male participants was that of displacement. In patriarchal and traditional societies, anger, which generally occurs as a result of conflict and frustration, can not always be directed to the authority to find a solution. Thus, anger is directed from the actual object or person towards other objects or people that will show less or no reaction. In other words, the mechanism of “displacement” is used. When the defense mechanisms least frequently used were examined, it was seen that the mechanism of sublimation was in the first place. In terms of the way of child rearing, in conservative societies, the child can neither discover nor use his or her innate skills. There are a number of reasons for this as follows.

- The parents impose their own wishes instead of making the child free in his or her preferences in education
- Low level of welfare
- Inefficient individualization of education
- Inefficient services of guidance
- Lack of educational environments in which children can discover their skills
- Failure to apply the credit system as desired at universities

Due to the factors mentioned above and to other possible ones, children can not recognize their own skills and may develop a feeling of inferiority. This situation makes it possible for them to use the defense mechanism of sublimation successfully.

Depending on the clear differences between the female and male participants, the fact that the male participants’ level of use of the mechanism of projection was twice higher than the female participants’ level of use of the same mechanism could be explained with the principle feature of traditional societies. It is thought that most of the responsibilities of a man are carried out by his mother and sisters when he is a child and by his girlfriend or wife when he becomes an adult. As a result, a man thinks that a fault or a difficulty in a situation always results from other people. This situation could explain why the male participants used the mechanism of projection twice as much as the female participants.
Table 2: Significance levels regarding the responses to the defense mechanisms most frequently used by the research universe

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th></th>
<th>t-test for Equality of Means</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
<td>t</td>
<td>df</td>
<td>Sig. (2-tailed)</td>
<td>Mean Difference</td>
<td>Std. Error Difference</td>
<td>95% Confidence Interval of the Difference</td>
</tr>
<tr>
<td>Lower</td>
<td>Upper</td>
<td>Lower</td>
<td>Upper</td>
<td>Lower</td>
<td>Upper</td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>3. Defense Mechanism</td>
<td>Equal variances assumed</td>
<td>49.543</td>
<td>.000*</td>
<td>-3.438</td>
<td>585</td>
<td>.001</td>
<td>-.065</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-3.104</td>
<td>335.963</td>
<td>.002*</td>
<td>-0.065</td>
<td>.021</td>
<td>-.107</td>
<td>-.024</td>
</tr>
<tr>
<td>4. Defense Mechanism</td>
<td>Equal variances assumed</td>
<td>1.162</td>
<td>.282</td>
<td>-0.540</td>
<td>585</td>
<td>.590</td>
<td>-.010</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-0.530</td>
<td>468.950</td>
<td>.597</td>
<td>-.010</td>
<td>.019</td>
<td>-.046</td>
<td>.027</td>
</tr>
<tr>
<td>5. Defense Mechanism</td>
<td>Equal variances assumed</td>
<td>23.296</td>
<td>.000*</td>
<td>-2.384</td>
<td>585</td>
<td>.017</td>
<td>-.033*</td>
</tr>
</tbody>
</table>

Women are more extravert than men thanks to the feature of their gender and use their oral communication skills better than men. As a natural result of this, they can establish more relationships with both sexes than men can. Women can also discover their skills at an earlier age with the support of their friends than men. This allows women to use their different qualifications that they think are better rather than those qualifications that they think they should improve (the defense mechanism of sublimation). With respect to the mechanisms most frequently used, the difference between the female and male participants was found significant only for the mechanisms of “projection” and “regression” (see Table 2).

Table 3: Distribution of the responses regarding the defense mechanisms occasionally used with respect to gender

<table>
<thead>
<tr>
<th>Defence Mechanism</th>
<th>Female</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1 Denial</td>
<td>29</td>
<td>13.1</td>
<td>33</td>
<td>14.0</td>
<td>62</td>
<td>13.6</td>
<td></td>
</tr>
<tr>
<td>2 Repression</td>
<td>52</td>
<td>23.4</td>
<td>60</td>
<td>25.5</td>
<td>112</td>
<td>24.5</td>
<td></td>
</tr>
<tr>
<td>3 Projection</td>
<td>22</td>
<td>9.9</td>
<td>10</td>
<td>4.3</td>
<td>32</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>4 Identification</td>
<td>13</td>
<td>5.8</td>
<td>16</td>
<td>6.8</td>
<td>29</td>
<td>6.3</td>
<td></td>
</tr>
<tr>
<td>5 Regression</td>
<td>11</td>
<td>4.9</td>
<td>5</td>
<td>2.1</td>
<td>16</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>6 Intellectualism</td>
<td>25</td>
<td>11.3</td>
<td>38</td>
<td>16.2</td>
<td>63</td>
<td>13.8</td>
<td></td>
</tr>
<tr>
<td>7 Reaction formation</td>
<td>9</td>
<td>4.1</td>
<td>8</td>
<td>3.4</td>
<td>17</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>8 Displacement</td>
<td>26</td>
<td>11.7</td>
<td>27</td>
<td>11.5</td>
<td>53</td>
<td>11.6</td>
<td></td>
</tr>
<tr>
<td>9 Sublimation</td>
<td>12</td>
<td>5.4</td>
<td>7</td>
<td>23.0</td>
<td>19</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>10 Imagination</td>
<td>23</td>
<td>10.4</td>
<td>31</td>
<td>13.3</td>
<td>54</td>
<td>11.8</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>222</td>
<td>100</td>
<td>235</td>
<td>100</td>
<td>457</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

According to Table 3, the mechanisms occasionally used by the female and male participants were “repression”, “intellectualization” and “denial”. In addition, the mechanisms of “imagination” and “displacement” were rarely used. The most striking finding in the Table was the fact that the rare use of the mechanism of “sublimation” was almost four times higher for the male participants. The fact that the
occasionally-used mechanisms were quite similar to those frequently used could be explained with the fact that the female and male students used the same frequently-used mechanisms when they needed. The use of the defense mechanism of sublimation was four times higher for the male participants than it was for the female participants. The fact that the male participants occasionally used this mechanism supports the view that women are better than men in using the communication skills mentioned in Table 1. In other words, women always use the defense mechanism of sublimation, while men occasionally use it.

According to the results of the t-test conducted (Table 4) to see whether the difference between the female and male participants was significant in terms of the occasionally-used mechanisms, the difference in the use of the mechanism of “projection” was found significant at the significance level of .05. This result supports the previous view that “men use the mechanism of projection more than women.”

Table 5 presents the defense mechanisms that the students did not ever want to use. According to the Table, the mechanisms that were avoided by the students were found to be “denial”, “reaction formation” and “displacement”.

Table 4: The significance levels of the responses regarding the defense mechanisms occasionally used by the research universe

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>2. Defense Mechanism</td>
<td>Equal variances assumed</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>.628</td>
</tr>
<tr>
<td>3. Defense Mechanism</td>
<td>Equal variances assumed</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>2.268</td>
</tr>
<tr>
<td>4. Defense Mechanism</td>
<td>Equal variances assumed</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-.097</td>
</tr>
</tbody>
</table>
Table 5: Distribution of the responses given to the defense mechanisms avoided by the students

<table>
<thead>
<tr>
<th>Defence Mechanism</th>
<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>1 Denial</td>
<td>15</td>
<td>17.7</td>
<td>30</td>
<td>18.3</td>
<td>45</td>
<td>17.7</td>
</tr>
<tr>
<td>2 Repression</td>
<td>4</td>
<td>4.4</td>
<td>11</td>
<td>6.7</td>
<td>15</td>
<td>5.9</td>
</tr>
<tr>
<td>3 Projection</td>
<td>15</td>
<td>16.7</td>
<td>17</td>
<td>10.4</td>
<td>32</td>
<td>12.6</td>
</tr>
<tr>
<td>4 Identification</td>
<td>10</td>
<td>11.1</td>
<td>13</td>
<td>7.9</td>
<td>23</td>
<td>9.1</td>
</tr>
<tr>
<td>5 Regression</td>
<td>10</td>
<td>11.1</td>
<td>18</td>
<td>11.0</td>
<td>28</td>
<td>11.0</td>
</tr>
<tr>
<td>6 Intellectualism</td>
<td>3</td>
<td>3.3</td>
<td>4</td>
<td>2.4</td>
<td>7</td>
<td>2.7</td>
</tr>
<tr>
<td>7 Reaction formation</td>
<td>13</td>
<td>14.5</td>
<td>21</td>
<td>12.8</td>
<td>34</td>
<td>13.4</td>
</tr>
<tr>
<td>8 Displacement</td>
<td>14</td>
<td>15.6</td>
<td>19</td>
<td>11.6</td>
<td>33</td>
<td>13.0</td>
</tr>
<tr>
<td>9 Sublimation</td>
<td>3</td>
<td>3.3</td>
<td>14</td>
<td>8.5</td>
<td>17</td>
<td>6.7</td>
</tr>
<tr>
<td>10 Imagination</td>
<td>3</td>
<td>3.3</td>
<td>17</td>
<td>10.4</td>
<td>20</td>
<td>7.9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>90</td>
<td>100</td>
<td>164</td>
<td>100</td>
<td>254</td>
<td>100</td>
</tr>
</tbody>
</table>

It is seen that the students did not complain much about the mechanism of “repression” although it was one of the two most frequently used mechanisms (see Table 1).

The mechanisms of “denial”, “reaction formation” and “displacement” are frequently seen together with psychological problems and pathologies. These are the mechanisms which are claimed by psychologists to be the unsuccessful one among the defense mechanisms and to result in mental disorders (Öztürk, 1981) and which are found significant in terms of communication problems and difficulties. In this respect, it could be stated that the female and male participants in the present study have health tendencies.

Although it seems to be a contradictory result that the mechanism of denial is both the most frequently used mechanism and the one avoided, it indicates ambivalence, one of the most frequent cases experienced by adults who are in the period of adolescence (Öztürk, 1981).

As intellectualism, the last one among the defense mechanisms avoided most, is a beneficial and successful defense mechanism in terms of its use (Öztürk, 1981), the female and male subjects in the present study could be said to make psychologically healthy selections.

The analysis conducted to see whether the difference between the responses regarding the defense mechanisms avoided was significant or not (Table 6) revealed that the difference between the female and male participants was found significant at the significance level of .05 in terms of the use of such mechanisms as “sublimation” and “imagination”.

...
Table 6: Significance levels of the responses regarding the defense mechanisms avoided by the research universe

<table>
<thead>
<tr>
<th>Defense Mechanism</th>
<th>Levene's F (Equal variances assumed)</th>
<th>Levene's F (Equal variances not assumed)</th>
<th>t-test for Equality of Means (Equal variances assumed)</th>
<th>t-test for Equality of Means (Equal variances not assumed)</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
</table>

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**REFERENCES**


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MAKING VOCATIONAL AND TECHNICAL UPPER SECONDARY SCHOOLS MORE ATTRACTIVE FOR STUDENTS TO PREFER: AN ACTION RESEARCH

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ABSTRACT

The purpose of this action research was to help the students to identify professions appropriate with their abilities, interests and personality traits and to guide the students to technical and vocational training especially at upper secondary level with their own will. Action research strategy in which qualitative methods and quantitative methods were used was selected for this study. As a result of this action research there was a promising difference in terms of the proportional change between the number of the students who graduated from junior high school in the sample and attended to technical and vocational upper secondary schools last year and the number of the students in the sample who has graduated from junior high school and then who will attend to technical and vocational high schools this year. The findings of this research have important implications about how vocational and technical secondary education can be updated, improved, increased the quality and attractiveness, well-organized according to market needs and thus more preferred in Turkey based on the perceptions and preferences of the students who preferred or did not prefer vocational and technical education.

Key Words: Technical and vocational secondary education, students, action study.

INTRODUCTION

The Turkish education system consists of 12 years of compulsory education (4 year primary, 4 year junior high school and 4 year general or technical and vocational upper secondary education) and higher education respectively. In Turkey, there are four main types of high schools: science high schools, Anatolian general high schools, public general high schools and vocational schools. Admission to science high schools is competitive by the government examination, and applicants must have good grades following their compulsory education. Science high schools are the most prestigious and the most difficult to enter of all high schools in Turkey. Students attend for four years and study a broad science curriculum and foreign languages. Anatolian general high schools also select by the government entrance exam and applicants must have completed their eight year education without repeating any year. However less prestigious they are than Science High Schools, Anatolian High Schools cover a similar four-year program. Public general high schools which have been transformed to Anatolian general high schools with the recent reform by the government are those which any students who have taken the government entrance exam have a right to be enrolled according to their scores. Vocational High Schools consist of Vocational and Technical High Schools, Trade and Tourism Vocational High Schools, Religious High Schools, Special Education High Schools and Vocational Health High Schools. Technical and Vocational High Schools are schools aiming at training and educating students for employment. Vocational high schools are the least prestigious of these and the easiest to enter in terms of the scores obtained at the high school entrance exam. Any students who have graduated from junior high school and have not been admitted to other prestigious schools have a right to attend vocational high schools according to the scores they get from the high school entrance exam. These schools consist of Vocational and Technical High Schools, Trade and
Tourism Vocational High Schools, Religious High Schools, Special Education High Schools and Vocational Health High Schools. (Dogan, Orunca & Gunbayi, 2002; MEB, 2012).

Vocational graduates have several disadvantages relative to general secondary education students. Firstly, because of their concentrated vocational training, they tend to be less prepared for the academically-oriented university entrance exam. Secondly, the university entrance formula, which gives greater weight to students’ performance when they are applying to study in a related field, reduces the likelihood that vocational graduates could enter into a four-year university program because, by definition, none is directly related to a vocational field. And thirdly, while vocational graduates are provided with direct access to tertiary education (without consideration of their scores at the university entrance exam), their choice of discipline is limited to the specific field they studied in their secondary vocational school (Katsu & Vorkink et al. 2005). The basic problem for vocational education for Turkey is the student. Thus, there are not so many students who attend vocational high schools through choice or who have been selected on some definite criteria. The reasons for selection of these schools in order of importance are: because of getting inadequate scores to go to general science and Anatolian high schools; economic inadequacy of the family; guidance of the family and acquaintances; desire to join economic life and guidance performed under some definite criteria by both the primary and junior high school and the family.

When the student distributions in general and vocational secondary education in Turkey were examined, in 1998 majority was in upper secondary studies in general in Turkey with the percentage of 65 in general and 35 in vocational (OECD, 1998); in 2002, 63 in general and 37 in vocational (OECD, 2005) and in 2005, 58 in general and 42 in vocational (OECD, 2007), 63 in general and 37 in vocational (OECD, 2009, MEB, 2009), 57 in general and 43 in vocational (MEB, 2012). As it can be understood from OECD and MEB –Ministry of National Education- statistics, there has been considerable increase in enrolment to VET in Turkey for ten years. Nevertheless, the enrolment rate to the VET has not reached the target, yet of 9th Development Plan of SPO – State Planning Organization- (2007-2013), which investigated that the 65 % of the students are to be enrolled to the VET and the remaining part is to attend the general education (SPO, 2006).

On the other hand, in Turkey the latest unemployment data shows that there is a serious problem in youth unemployment. The high unemployment rate of educated young people should be considered as a serious and dangerous sign in terms of the country’s future prosperity. Despite the importance given to vocational education and rapidly increasing number of those schools, the demand for general upper secondary education is still ongoing. Limited quota of higher education causes those general secondary graduates flow to the labor market without any professional background, facing with a serious unemployment problem. Definition of the educated youth is a person who has graduated from secondary school and higher education institutions. The majority of the unemployed people are those of general secondary graduates. According to State Planning Organization (SPO) and Turkish Statistical Institute (TSI) unemployment rates of those graduates of general secondary education are the highest among persons with a secondary educational background. In this case, re-examining the function of secondary education according to labor market needs, planning and implementation of urgent measures to be taken are of great importance (TSI, 2012).

One of the most important elements of the planning of upper secondary education in accordance with technical and vocational education and labor market needs is to provide that the junior high school graduates should know and learn more about qualities, facilities and opportunities to be provided by technical and vocational upper secondary education. Therefore, promotional activities and introductions to junior high school students for qualities, facilities and opportunities of technical and vocational upper secondary schools should be carried out, which will increase the qualities of education in TVET secondary schools as the more demanded they are, the more quality they will have in time as a result of the fact that they will have to meet the desires of those who prefer TVET secondary schools and thus more students will be attracted to TVET high school education and there will be a decrease in the number of unemployment of educated and qualified adults in the long term.
The aim of this action research was to help the students to identify professions appropriate with their abilities, talents, interests and personality traits and to guide the students to technical and vocational training especially at upper secondary level with their own will. Thus, a voluntary school serving junior high school education in Antalya province was chosen to participate in the project and they were mentioned about the purpose of the project and the following action plan was implemented:

**Action Plan**
1. The formal permission procedures from local education directorate for the project were fulfilled.
2. The target student population and sample were determined in schools. (Forty-one 8th grade students in Dr. Galip Kahraman Junior High School in Muratpasa province in Antalya)
3. The numbers of students who graduated from primary school in the previous year and preferred vocational and technical education were checked and their numbers were determined.
4. Individual and focus interviews with the selected sample of students in their eighth grade in Dr. Galip Kahraman Junior High School in Muratpasa province in Antalya and their parents who were volunteers were done by using a semi-structured interview forms to understand their attitudes to technical and vocational training at the beginning of the project prior to presentations and school visits.
5. Specialists, principals and vocational and technical teachers from technical and vocational education made presentations of those promising technical and vocational programs with the highest employment potential.
6. The students and teachers from those promising technical and vocational programs in TVET education introduced their own programs.
7. School visits for observing the practical operation of those technical and vocational programs were organized.
8. Individual and focus group interviews with the selected sample of students in their eighth grade in Dr. Galip Kahraman Junior High School in Muratpasa province in Antalya were done again in order to understand whether there was a change in students' attitudes to vocational and technical upper secondary education.
9. The preference rates of the students from the sample school for technical and vocational upper secondary education were compared with the previous year to reveal the realization level of this project.

**METHOD**

Action research strategy in which qualitative methods and quantitative methods were used was selected for this study. “Action research simultaneously assists in problem solving and expands scientific knowledge, as well as enhancing the competencies of the respective actors, being performed collaboratively in an immediate situation using data feedback in a cyclical process, aimed at an increased understanding of a given social situation, primarily applicable for the understanding of change processes in social systems and undertaken within a mutually acceptable framework.” (Hult & Lennung, 1980, p. 241-250). Thus, the advantages of an action research can be summarized such as direct links between research and problem solving, Possible personal benefits for practitioner/professional self development, a continuous cycle of change and development - organizational benefits, practitioner participation, an accumulation of action research may lead to policy and practice changes.

**Participants**

This study was conducted in Dr. Galip Kahraman Junior high school in Muratpasa province in Antalya in Turkey. Thus the population of the study consisted of thirty 8th grade students – eighteen girls, twelve boys and eight of girls and three of boys, total eleven of them (36.66%) preferred vocational education - who graduated from Dr. Galip Kahraman Junior high school last year in 2012 and forty-one 8th grade students – twenty-one girls and twenty boys- who would graduate from Dr. Galip Kahraman Junior high school this year in 2013 and those students’ parents who would graduate this year. The sample of the study consisted of forty-one 8th grade students who would graduate from Dr. Galip Kahraman Junior high school this year in 2013, their four parents and six students who graduated from Dr. Galip Kahraman Junior high school last year in 2012. Thus a sample of...
total six students who graduated last year in 2012 and forty-one students who would graduate this year and their four parents who were volunteers were interviewed by the researcher and also forty-one students and their four parents participated in the activities carried out in the action plan in the research.

Data Collection
In order to investigate participants’ perceptions on technical and vocational education and training and how to make vocational and technical upper secondary schools more attractive for students to prefer, semi-structured interviews and focus group interviews were used because it would provide an in-depth exploration of the topic, it would allow the researchers the flexibility, for example, to change the order of questions, simplify the questions and to probe the interviews (Cohen, et al. 2007). Data were collected from June, 2012 through June, 2013. This included a 30-60 minute recorded interviews with the informants- face-to-face interviews and focus group interviews- with initial interview questions. Face-to-face interviews were done and informants’ experiences, thoughts and feelings were recorded in a taped diary. Additionally, the target student population and sample were determined in schools-8th grade students in Dr. Galip Kahraman Junior high school in Muratpasa province in Antalya in Turkey-, the numbers of students who graduated from the selected junior high school last year in 2011-2012 academic year and preferred vocational and technical education were checked and their numbers were determined from school statistics. Thus, the preference and enrolment rates of those students who graduated last year and who would graduate this year from the sample school for technical and vocational upper secondary education were compared with the last year to reveal the realization level of this the action research.

Data Analysis
Data analysis began with repeated readings of interview transcripts from conversations with participants. The purpose was to determine the essence of the phenomenon and structures of experiences of participants related to technical and vocational education and training and how to make vocational and technical upper secondary schools more attractive for students to prefer. During data analysis, the data were organized categorically and chronically, reviewed repeatedly and continually coded. Interview transcripts were regularly reviewed. In addition, data analysis process was aided by the use of a qualitative data analysis computer program called NVIVO. These kinds of computer programs do not actually perform the analysis but facilitate and assist it. That is NVIVO does not perform the analysis but only supports the researcher doing the analysis by organizing data and recodes and nodes etc (Kelle, 1995; Cohen et al., 2007).

Ethical Considerations
Participants were briefed about the research aims, kept informed at all stages and be offered anonymity. A consent form was signed between researcher and the parents of each participant about the use of the data in terms of how its analysis would be reported and disseminated. It was also tried to be careful not to impose researcher’s belief on others and researcher’s beliefs were secondary and the participants thinking be what was required.

FINDINGS
The findings of the action study were analyzed under five main sub-headings: the view of the students who graduated from junior high school last year and preferred vocational and technical education on TVET high schools, parents and students’ views on Vocational and Technical Education prior to introductory presentations on TVET high schools and school visits, presentations and school visits, the students’ views on Vocational and Technical Education after presentations and school visits and the comparison of the enrolment rates of the students from the sample school to technical and vocational upper secondary education with the students who graduated from the junior high school last year.

THE VIEW OF THE STUDENTS WHO GRADUATED ON TVET HIGH SCHOOLS

In 2012-2013 academic year thirty 8th grade students, eighteen of whom were girls and twelve of whom were boys, graduated from Dr. Galip Kahraman Junior high school. Eleven (36.66%) of those thirty students, eight of whom were girls and three of whom were boys, preferred and attended TVET high schools. Those students
were informed about the action research and invited to an interview about why they chose technical and vocational high school training and their satisfaction in relation to their preferences, but only six of them accepted the interview invitation. When six students were asked about their attitude to TVET upper secondary schools, all of them answered that they had positive attitudes to TVET upper secondary schools. When they were asked what they thought about TVET upper secondary education as “a well-established education system offering lots of job opportunities” (GSP1, GSP5), “acquiring the qualifications of a vocation and finding a job easily” (GSP2), “TVET graduates being luckier in terms of finding a job” (GSP3), “the schools the aim of which is to train and educate us according to the vocational programs students choose” (GSP4) and “education both in theory and practice” (GSP6).

When six students were asked about whether they were glad with the vocational program they preferred, they all answered as ‘Yes’. Besides they were asked what vocational program they preferred and why they did so. They explained their reasons as “the popularity of information and communication technology (ICT) everywhere” (GSP1), “Being familiar with sea and Maritime Vocational High School” (GSP2), “Vocational Health High School, First Aid and Emergency and Medical Anesthesia program offering a wide range of job opportunities in health organizations just after graduation” (GSP3, GSP4), “Child Development Program due to children” (GSP5) and “Catering and food technology due to guidance teacher” (GSP6).

When six students were asked what their suggestions were on what should be done to make TVET high schools more attractive and preferred by majority of the students, five of them put forward their suggestions as “guiding students according to their abilities, talents and interests” (GSP1, GSP2), “introduction of vocational programs to students” (GSP3), “school visits and presentations by the teachers of vocational programs at TVET high schools” (GSP4) and “Counselor and guidance teachers help for students to prefer vocational programs” (GSP6).

When six students were asked what metaphors they would formulate on TVET high schools and their vocational programs and their reasons for the metaphors, three of them formulated metaphors and explained the reasons for the metaphors they formulated as “A cogwheel: Because cogwheels function in a system. If the system is out of order, the roller becomes out of function, too. So TVET high schools are components of an education system. Without those schools, the education system cannot function.” (GSP1), “The sun: The sun enlightens the world. So just like the sun, the graduates of TVET high schools will enlighten the world by performing their profession and contributing to the welfare of the world.” (GSP3) and “A machine: You put a raw material in a machine, proceed it and finally you get a qualified and useful material as an output or a product. Similarly students are trained and educated in TVET high schools and when they graduate, they will have qualifications of various professions as a human output and will perform their professions effectively. That’s why a TVET high school is similar to a machine.” (GSP5).

PARENTS AND STUDENTS’ VIEWS PRIOR TO PRESENTATIONS ON TVET HIGH SCHOOLS AND SCHOOL VISITS

Forty-one students and their parents were informed about the action research and invited to interviews on TVET high schools. Only four parents of forty-one students who would graduate from Dr. Galip Kahraman junior high school this year were volunteers for the interviews although all of the parents of forty-one students accepted their children to participate in the action research titled “Making vocational and technical upper secondary schools more attractive for students to prefer”.

Parents’ Views Based on Individual Interviews

Firstly, when four parents were asked whether they knew about the content of education and training in TVET upper secondary schools, all of them answered as “Yes”. Secondly, when four parents were asked about their attitudes to TVET upper secondary schools, all of them answered that they had positive attitudes. Thirdly, when they were asked what they thought about TVET, four of parents explained about what they thought about TVET secondary education as “education and training in accordance to qualifications of various professions” (PP1, PP4), “acquisition of the qualifications of professions to find a job in labor market” (PP2) and “high schools offering many facilities and job opportunities” (PP3).

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When four parents were asked about whether they wanted their children to prefer and attend vocational programs in TVET high schools, all of them said “Yes”. When, they were also asked why they wanted their children to prefer and attend vocational programs in TVET high schools, they explained their reasons as “a job guarantee in the future” (PP1), “essential for one who wants to live in wealth in the future” (PP2), “a job guarantee in accordance with the qualifications of the profession” (PP3) and “being employed easily” (PP4).

When four parents were asked about whether and how they guided their children to vocational programs in TVET high schools, three of them told about whether or how they guided their children to vocational programs in TVET high schools as “letting the child prefer the vocational program where he or she will be successful” (PP1), “TVET high schools’ being secondary to prefer” (PP3) and “guiding the child to a vocational program as he or likes in a TVET high school” (PP4).

When parents were asked about what schools or vocational programs they wanted their children to prefer in TVET upper secondary schools for their high school education, only one of them mentioned about their preferences and mentioned about the reason why they preferred those schools and programs as “maritime vocational high school or military high school due to job guarantee” (PP1).

When four parents were asked what their suggestions were on what should be done to make TVET high schools more attractive and preferred by majority of the students, all of them put forward their suggestions as “supply information to students about vocational programs students are interested in” (PP1), “introductions of professions and vocational programs in TVET high schools in mass media” (PP2), “school visits to all types of vocational high schools” (PP3) and “letting students prefer vocational programs with their own free will” (PP4).

Students’ Views Based on Individual Interviews
Firstly, when forty-one students were asked whether they knew about the content of education and training in TVET upper secondary schools, twenty-four of them answered as “No” and seventeen “Yes”. Secondly, when forty-one students were asked about their attitude to TVET upper secondary schools, fifteen of them answered that they had negative attitudes to TVET upper secondary schools and twenty-four of them answered that they had positive attitudes to TVET upper secondary schools and two of them answered that they were neutral to TVET upper secondary schools. Thirdly, when they were asked what they thought about TVET, eighteen of them explained about what they thought about TVET upper secondary education as “training and educate youth according to qualifications of a profession” (PS1, PS2, PS11, PS25, PS35, PS38), “after graduation being employed in industry” (PS6), “not knowing much about TVET high schools(PS8), “after graduation from becoming a qualified work power” (PS9), “courses in practice not in theory according to vocational programs” (PS13), “shortcuts to life of work” (PS15), “vocational programs in TVET high schools according to students’ abilities” (PS16), “gaining qualifications of a profession both in theory and practice” (PS20), “being guided to a profession through practice in enterprises”(PS22), “attending courses according to various vocational programs” (PS28, PS32), and “schools training intermediate technical manpower for occupations” (PS30, PS33).

When forty-one students were asked whether they would prefer TVET upper secondary schools for their high school education, sixteen of them said “No” for their preferences. Additionally, twelve of them explained the reasons why they did want to prefer TVET secondary education as “being willing to attend more prestigious highs schools like Anatolian high schools than TVET high schools” (PS5, PS11, PS13, PS14), “being reluctant to become intermediate technical manpower for work market” (PS15), “preferring Anatolian High due to the higher quality of education is higher” (PS22, PS29, PS33, PS34, PS40 ), “too many and very intensive courses in TVET high schools” (PS25) and “good and nice high schools” (PS27).

When forty-one students were asked whether they would prefer TVET upper secondary schools for their high school education, twenty-four of them said “Yes” for their preferences. Additionally, eighteen of them explained the reasons why they wanted to prefer TVET upper secondary education as “desire to become more successful at work (PS1),“learning how to perform the future profession in practice” (PS2, PS7); “best choice for students” (PS6, PS8), “a well paid profession and a job to work just after graduation” (PS9, PS12, PS17, PS20,
When twenty-four students who wanted to attend TVET high schools were asked what schools or vocational programs they would prefer in TVET secondary schools for their high school education, twenty-two of them mentioned about their preferences and twenty also mentioned about the reason why they would prefer those schools and programs as “technical education school” (PS1), “tourism and photography and camera shooting in Trade and Tourisms Vocational High Schools due to high income in tourism market” (PS2), “vocational health high school due to desire to help those who suffer from an illness” (PS6, PS21), “health high school due to guidance of parents and demand both in public and private health sectors” (PS7, PS9, PS10, PS30, PS31), “vocational high school child development program due to children” (PS8, PS17), “information and communication technology (ICT) program due to being interested in ICT and software” (PS16, PS41), “catering program due to being good at cooking” (PS18, PS24), “Art High School due to being good at drawing and having visual and spatial talents” (PS19), “tourism program in trade and tourism schools due to lots of job opportunities in tourism sector in Antalya” (PS20), “accounting and information and communication technology (ICT) program in Trade High School being interested in accounting and ICT and software” (PS32, PS38), “technical high school electricity program due to being keen on electricity” (PS35), “trade high school due to run an enterprise after graduation” (PS37) and “architecture program due to desire to design projects for buildings in building sector in labor market” (PS39).

When forty-one students were asked what their suggestions were on what should be done to make TVET high schools more attractive and preferred by majority of the students, sixteen of them put forward their suggestions as “introduction of the opportunities and facilities of TVET schools by the staff and senior students from TVET high” (PS7, PS8, PS32), “reduction of the entrance scores of those TVET high school programs with the highest employment potential and more promising” (PS9, PS39), “update and improvement of the names and the facilities of TVET high schools” (PS13, PS14, PS19, PS25, PS27), “the higher entrance scores for TVET high schools’ becoming more prestigious” (PS15, PS22), “making students start TVET education at earlier ages” (PS20), “student centered education programs to attract students’ interest and attentions in TVET high schools” (PS31), and “guidance to TVET high schools according to students’ talents and desires by arranging school visits and introduction by the teachers” (PS34, PS37).

Students’ Views Based on Focus Group Interviews
Six students were interviewed in focus group prior to presentations and school visits related to TVET high schools. Firstly, when six students in focus group were asked whether they knew about the content of education and training in TVET secondary schools, all of them answered as “Yes”. Secondly, when six students were asked about their attitude to TVET upper secondary schools, four of them answered that they had positive attitudes to TVET upper secondary schools and only two of them answered that they had negative attitudes to TVET upper secondary schools. Thirdly, when they were asked what they thought about TVET, six of them explained about what they thought about TVET upper secondary education as “acquiring the qualifications of a profession and join labor market at younger ages” (SP9, SP14, SP15, SP22), “a shortcut to labor market” (SP20) and “having a right to start and run one’s own enterprise” (SP2).

When six students in focus group were asked whether they would prefer TVET upper secondary schools for their high school education, two of them said “Yes”, two “No” and two were neutral for their preferences. Additionally, six of them explained the reasons why they wanted or did not want or were neutral to prefer TVET upper secondary education as “having the qualifications of a profession and being employed easily” (SP9), “a chance both to attend courses in theory at school and to practice in an enterprise due to the dual system at TVET” (SP14), “having to study harder due to both subject courses similar to those in general high schools and vocational courses of a program” (SP22, SP2), “not having decided, yet but probability to attend tourism vocational high school” (SP20) and “reluctant to prefer TVET high schools due to the possibility of regretting to attend a TVET high school” (SP15).
When four of students who wanted to attend TVET high schools or who were neutral were asked what schools or vocational programs they would prefer in TVET upper secondary schools for their high school education, there of them mentioned about their preferences and about the reason why they would prefer those schools and programs as “vocational health high school due to being employed easily just after graduation” (SP9, SP14) and “vocational high school of tourism due to easily being employed easily in labor market related to tourism” (SP20).

When six students were asked what their suggestions were on what should be done to make TVET high schools more attractive and preferred by majority of the students, six of them put forward their suggestions as “lower entrance scores to TVET high schools” (SP9), “up-to-date of TVET high schools” (SP14), “increasing the quality of education served in TVET high schools and guidance by teachers, guidance and counselor teachers according to students’ interests, abilities and talents” (SP22), “higher entrance scores to TVET high schools in terms of their prestige and a supplementary higher education just after TVET high school” (SP20), “up-to-date names, buildings and physical facilities, well-equipment in terms of technology of TVET high schools and recruitment of qualified and enough teachers in all vocational programs” (SP15), and “organization of social activities and campaigns to introduce the facilities of TVET high schools” (SP2).

PRESENTATIONS AND SCHOOL VISITS

Two specialists from technical and vocational education made a presentation of promising technical and vocational programs with the highest employment potential. The first specialist (EY) worked as a vocational teacher at Tourism Vocational High School in Antalya. The second one (HC) was a principal of a vocational and technical school in Antalya. They gave the students and parents some general information about technical and vocational programs at the hall of Dr.Galip Kahraman Secondary School in Antalya. Those presentations were important because most of the students could understand vocational and technical education means.

Another two specialists from technical and vocational education were invited to make a presentation of promising technical and vocational programs with the highest employment potential for parents of the students in their eighth grade in compulsory education. The first specialist (NAD) worked as a school guide and counselor at Vocational Health High School in Antalya. The second one (AU) was also worked as a school guide and counselor in National Education Directorate in Antalya. The aims of the presentations were to help the parents and students to identify professions appropriate with their students’ abilities, interests and personality traits and to understand importance of TVET education. All presentations were made at hall of Dr.Galip Kahraman Secondary School in Antalya. Although all students participated in the presentations by four specialists, there was not enough attendance for those presentations by parents.

After the presentations about TVET education, the teachers from those promising technical and vocational programs in TVET education introduced their own programs to students in their eighth grade in compulsory education and their parents. The teacher (MAT), who was a TVET teacher in electricity program, came from vocational and technical high school in Antalya and the teacher, who was a vocational teacher in nursing program, came from Vocational Health High School. The aims of the introductions were to promote the students and vocational programs of technical and vocational training especially at upper secondary level. The introductions were carried out at hall of Dr.Galip Kahraman Secondary School in Antalya. All presentations and introductions on TVET high schools and their vocational programs were carried out in February and March, 2013.

Then there were school visits to various technical and vocational upper secondary schools for observing the practical operation of those technical and vocational programs. First the students were taken to a visit to Ataturk Vocational and Technical High School. It had programs of ICT, electricity and electronic technology, machinery and mechanical technology, metallurgy and material technology; wood works technology, maintain works and air conditioning technology. During that time, there were science exhibition of the students of Ataturk Vocational and Technical High School. The students observed the exhibition carefully and asked many questions about their products. The second school visit was to Muratpasa Vocational and Technical High School.
included departments of industrial automation technology, automotive technology, infrastructure technology, machinery technology, metallurgy technology, wood works technology. The third one was to Fettah Tamine Maritime Vocational High School included two kinds of programs as marine port management and marine science technology. Although it was not in the action plan in Appendix 1, the last additional school visit sponsored by Dr. Galip Kahraman junior high school management was organized to Antalya Dosemealti Anatolian Health Vocational High School including programs of nursing, anesthesia, first aid and emergency technician, dental prosthesis. All school visits were fulfilled in March, 2013.

**STUDENTS VIEWS ON VOCATIONAL AND TECHNICAL HIGH SCHOOL EDUCATION AND TRAINING AFTER PRESENTATIONS AND SCHOOL VISITS**

**Students Views Based on Individual Interviews**

Firstly, when forty-one students were asked again after presentations and school visits whether they knew about the content of education and training in TVET upper secondary schools, all of them (n:41) answered as “Yes”. Secondly, when forty-one students were asked about their attitudes to TVET upper secondary schools, thirty-three of them answered that they had positive attitudes to TVET upper secondary schools and only eight of them answered that they had negative attitude to TVET upper secondary schools. Thirdly, when they were asked what they thought about TVET, forty of them except only one explained about what they thought about TVET upper secondary education as “training and education depending on what vocational programs students attend” (PS1, PS4, PS23, PS24, PS29, PS31, PS32, PS33, PS37), “schools easy to be employed in labor market after graduation” (PS2, PS12, PS28), “schools where students are fixing or repairing something” (PS3), “schools which are easiest to be enrolled” (PS5), “education and training in accordance with the qualifications of a profession” (PS6, PS7, PS8, PS10, PS11, PS13, PS16, PS18, PS19, PS21, PS22), “a shortcut to labor market” (PS9, PS16, PS17, PS38, PS40), “more advantageous than general high schools in terms of being employed easily” (PS14), “in the first year the same courses as in general high school and in the second year vocational courses of the program preferred” (PS15, PS27, PS36, PS39), “after graduation a chance to run your own enterprise and to become a technician” (PS20), “a guarantee to have a profession and good job opportunities after graduation” (PS25, PS26, PS30), “having qualifications of a profession and no need to attend higher education” (PS34), and “a chance to attend a two year undergraduate school after graduation” (PS41).

When forty-one students were asked whether they prefer TVET secondary schools for their high school education after presentations on TVET high schools and visits to TVET high schools, eight of them said “No” for their preferences. Additionally, all eight of them explained the reasons why they did want to prefer TVET secondary education as “having to attend a sport high school due to parents’ guiding” (SP1), “desire to attend Anatolian general high schools due to being a hard working student” (SP5, PS13, PS20, PS23, PS25, PS33) and “reluctant to attend TVET high schools due to desire to attend more prestigious high” (PS40).

When forty-one students were asked whether they would prefer TVET upper secondary schools for their high school education after presentations on TVET high schools and visits to TVET high schools, thirty-three of them said “Yes” for their preferences. Additionally, thirty-two of them explained the reasons why they wanted to prefer TVET secondary education as “economic independence at younger ages” (PS2, PS5, PS19, SP26), “job and money” (PS3), “being employed easily after graduation” (PS4, PS6, PS12, PS17, PS24, SP30, SP31, SP32), “acquiring the qualifications of a profession without entering university entrance exam” (PS7, PS8, PS11, PS15, PS21), “having the qualifications of a profession and a chance to be employed easily” (PS14, PS18, PS27, SP36, SP38, SP41), “being more suitable for my psycho-motor abilities” (PS16), “offering more facilities than general high schools” (SP22), “a chance to make a career in a profession” (SP28, SP29, SP34), “a chance to run one’s own workplace with TVET high school diploma” (SP35) and “a chance to practice what is learnt in theory” (SP37).

When thirty-three students who wanted to attend TVET high schools were asked what schools or vocational programs they would prefer in TVET secondary schools for their high school education after introductory presentations on TVET high schools and visits to TVET high schools, twenty-nine of them mentioned about their preferences and twenty also mentioned about the reason why they would prefer those schools and...
programs as “tourism and photography and camera shooting due to earning a good amount of money (PS2),” “maritime vocational high school due to being interested in sailing and commanding a ship” (SP3, SP29, SP34), “vocational health high school due being easier to find a job in health labor market and to attend higher education” (SP4, SP9), “vocational program for nursing in vocational high school due to becoming a nurse in health sector” (SP6, SP12, SP22), “vocational high school children development program due to intimacy in the profession and children” (SP7, SP8, SP11, SP17, SP21), “vocational high school due to desire to take care of the health problems of people” (SP14, SP26), “architectural program due to being easier to find a job and start working after graduation” (SP15), “information and communication technology (ICT) and web design due to being suitable for a disabled student” (SP16, SP27, SP38), “catering program due to keen on cooking” (SP18, SP28), “art High School due to talent and being good at drawing” (SP19), “tourism and automotive programs due to desire to become a chief cook in hotels and a chance to earn considerable amount of money after graduation in a mechanic enterprise” (SP24), “trade Vocational High School due to being good at trade and desire to become an accountant” (SP30), “tourism due to being easy to find a job and desire to contribute to the tourism of Antalya” (SP32), “electricity program due to obtaining an authority to start and run one’s own enterprise” (SP35, SP41) and “electricity and electronic program due to a well-paid job and finding a job easily” (SP37).

When forty-one students were asked what their suggestions were on what should be done to make TVET high schools more attractive and preferred by majority of the students after introductory presentations on TVET high schools and visits to TVET high schools, thirty-seven of them put forward their suggestions as “a job guarantee when graduating from a TVET high school” (SP1), “an equilibrium between vocational courses and subject courses” (SP2), “support by teachers at TVET school to pass the university entrance exam” (SP3), “seminars, meetings, school visits and introductory activities to increase the attractiveness of TVET high schools” (SP4, SP6, SP8, SP13, SP20, SP21, SP22, SP25, SP34, SP36, SP37, SP41), “lower entrance scores of the most demanded vocational programs” (SP5, SP29, SP39, SP40), “guidance by the manager and staff at TVET schools about the facilities and advantages of TVET high schools” (SP7, SP24, SP30, SP31, SP32, SP38), “guidance activates to TVET high schools at earlier stages of junior high school education” (SP9, SP26), “studying harder than others in general high schools to pass the university entrance exam” (SP10), “advertisements and slogans in order to increase the attractiveness of TVET high schools” (SP11, SP40), “support by extra subject courses and private courses for TVET students to pass university entrance exam” (SP12), “revision and change of the names of vocational and TVET high schools the accommodation and dormitory facilities for students from low-income families” (SP14), “higher entrance scores for TVET high schools to make them more attractive and getting hard working students to prefer TVET high schools” (SP15), “Up-to-date and various kinds of vocational programs and vocational programs suitable for disabled students” (SP17), “renewing the titles and the names of TVET high schools” (SP19), “arrangement of sample entrance exams to enter TVET high schools once a month” (SP26), “increasing the number and quality of TVET high schools are increased, it will be better. Besides if the entrance scores are lower, more students may prefer those schools” (SP31) and “settlement of TVET high schools nearer to downtown” (SP33).

When forty-one students were asked what metaphors they would formulate on TVET high schools and their vocational programs and their reasons for the metaphors, seventeen of them formulated metaphors and explained the reasons for the metaphors they formulated as “A pen: I write my fate by preferring TVET high schools and the pen is a vocational program which writes my fate. The vocational program in TVET high school determines our fate and future. That’s why I make a similarity between a pen and a TVET high school” (SP4), “A history book: I don’t like history. I think it is boring just the same as TVET high schools” (SP5), “Labor market: Labor market means to me to earn money and be economically independent. So a TVET high school is a way to work in labor market” (SP7), “Money: I like shopping very much. And you need money for shopping. That’s why a TVET high school means money to me and it is also a way to earn money.” (SP11, SP12), “A pen: Just as a pen is a tool to write, a TVET high school is a pen or a tool to acquire the qualifications of a profession.” (SP13), “A businessman: When I graduate from a TVET high school, I will get the qualifications of a profession, find a job easily, and start working and earn money just like a businessman. So my dreams will become real in life” (SP15), “Gold: To acquire the qualifications of a profession is very worthy. Every graduate of TVET high schools has his or her profession and he or she can faster and more easily find a job and start work. Besides he or she can
Students’ Views Based on Focus Group Interviews

Firstly, when six students in focus group were asked again after presentations and school visits whether they knew about the content of education and training in TVET upper secondary schools, all of them (n:6) answered as “Yes”. Secondly, when six students were asked about their attitudes to TVET upper secondary schools, four of them answered that they had positive attitudes to TVET upper secondary schools and only one of them answered that he had a negative attitude to TVET upper secondary schools and one was neutral. Thirdly, when they were asked what they thought about TVET, six of them explained about what they thought about TVET upper secondary education as “finding a job and starting to work at younger ages” (SP9), starting to work in both public and private hospitals (SP14), “being employed after a successful education and training both at a school and practicing in an enterprise” (SP22), “acquiring the qualifications of a profession” (SP20), “being employed just after graduation” (SP15) and “having a right to start and run one’s own enterprise” (SP2).

When six students in focus group were asked whether they would prefer TVET upper secondary schools for their high school education, three of them said “Yes”, one “No” and two were neutral for their preferences. Additionally, six of them explained the reasons why they wanted or did not want or were neutral to prefer TVET secondary education as “guidance by parents to Anatolian General High School” (SP9), “dual system in TVET courses at school and practice and work in an enterprise” (SP14), “preferring a TVET high school due to lower entrance scores” (SP22, SP15), “reluctant to attend a TVET high school” (SP20, SP2), and “TVET high schools are in secondary position for me”.

When six of students who wanted to attend or not to attend TVET high schools or who were neutral were asked what schools or vocational programs they would prefer in TVET secondary schools for their high school education if they were to attend those schools, six of them mentioned about their preferences and about the reason why they preferred those schools and programs as “Vocational Health High School due to desire to be a nurse” (SP9, SP14), “Vocational Health High School due to being employed easily just after graduation” (SP22), “Catering and Tourism due to being good at cooking and desire to work as the head chef in a five star hotel” (SP20), “Architecture program due to finding a job easily in building labor market” (SP15) and “Photo-shoot and camera shooting or Health vocational programs due to be employed after graduation” (SP2).

When six students in focus group were asked what their suggestions were on what should be done to make TVET high schools more attractive and preferred by majority of the students after introductory presentations on TVET high schools and visits to TVET high schools, all of them put forward their suggestions as “guidance by parents well-informed about school types” (SP9), “the same proportions of subject courses in TVET high schools with those in Anatolian high schools” (SP14), “More introduction activities on TVET high schools” (SP22), “Teachers: In TVET high schools the courses are more in practice than theory. We also visited Vocational Health High School. There the teachers told us that they would take students to hospitals and teach them how to perform injection. I can learn something if I see and touch. That’s why TVET high schools remind me teachers” (SP19), “Factory: In a factory there are various departments and machines in charge in those departments just as there are various technical and vocational programs in TVET high schools. Students will contribute to the economy of the country by acquiring the qualifications of profession and start working after graduation” (SP20), “A tree and its roots: Just as the roots of a tree enable a tree stand still, the TVET schools are the roots which enable a country stand still if a country is accepted as a tree. Besides, just as the roots of a tree nourish the tree, the TVET nourish the economy of a country and make the country survive” (SP22), “An enterprise: In an enterprise you are in charge to use a machine. Similarly, you are taught how to use a machine in TVET high schools” (SP27), “A toy: If you are talented for the vocational program you prefer, then it is a baby toy for you to learn the requirements of the vocational program” (SP28), “A tool. You can solve the problems by using the right tool and every tool is a way out for problems experienced in life. So a TVET high school is a way out for me to earn my life.” (SP30), “A house: Because in TVET house the first floor is my being student and the second floor is my work of life” (SP34), “A car: No sooner you graduate from a vocational program in a TVET high school, than you find a job and start working in labor market. In a sense it is as fast as a car is. That’s why in my opinion a TVET high school is similar to a fast car” (SP40) and “Future: TVET high school means profession and job in the future” (SP41).
“increasing the numbers and facilities of TVET high schools” (SP20), “changing the name of TVET high schools as Anatolian Technical and Vocational High Schools” (SP15), and “making TVET high schools more attractive” (SP2).

When six students were asked what metaphors they would formulate on TVET high schools and their vocational programs and their reasons for the metaphors, five of them formulated metaphors and explained the reasons for the metaphors they formulated as “Small kitchen machines and tools: All the machines and tools we use in the kitchen have their own functions different from each other. In a sense all of them are just like professions. Similarly, people having qualifications of different professions work to do something.” (SP9), “A garden: In a garden there are various kinds of trees such as apple, orange and banana. They are all beneficial for people. Similarly TVET high schools different from general high schools are also beneficial for society and people in terms of training intermediate man power for the economy.” (SP15), “A thick book of encyclopedia: Nowadays, while looking up something, google comes first but encyclopedias are secondary sources. Similarly, TVET high schools are secondary for me.” (SP22), “A factory: A TVET high school is a factory. Machines are components of a factory and function in various ways for production. Similarly, TVET high schools produce man power in various vocational programs for the development and economy of a country just like a factory.” (SP20) and “A golden bracelet: There is an old saying by our grand parents that we should have a golden bracelet around one of our wrist. That golden bracelet around one of our wrists symbolizes having qualifications of a profession. So when I have qualifications of a profession, I will have a golden bracelet around one of my wrist” (SP2).

STUDENTS’ PREFERENCES BASED ON THE ENTRANCE EXAM

All of forty-one students in their 8th year in Dr. Galip Kahraman junior high school in the sample took the entrance exam for high school education by Ministry of Education in Turkey and preferred the types of high schools according to the scores they got in the exam, their interests, abilities, talents and parents’ and teachers’ leading and guiding. As mentioned above last year in 2011-2012 academic year thirty of 8th grade students graduated from Dr. Galip Kahraman Junior high school. Eleven (36.66%) of those thirty students, preferred and attended TVET high schools. According to school preference statistics, this year in 2012-2013 academic year each student had a right to prefer ten types of high schools and seven of the forty-one students (17.07) who have just graduated from Dr. Galip Kahraman junior high school this year did not prefer TVET high schools and their vocational programs at all. However all the rest thirty-four students (82.92), thirteen (31.70) in their first preferences, three (7.31) in their second preferences, six (14.63) in their third preferences, the rest nineteen (46.34) in their last seven preferences in order, preferred TVET high schools and their vocational programs. Namely, twenty-two (53.66) students preferred TVET high schools in their initial three preferences.

DISCUSSION

As analyzed in general all the views of parents and students on the quality of education and training in TVET high schools, we might conclude that the education and training in TVET high schools were not found attractive yet, not found as very important and found lower in rank compared to general high school. This is consistent with the finding in Sonmez’s (2008) study called “The problems of vocational and technical education in Turkey and the necessity of restructuring” that “the Council of Higher Education enacted a regulation in 1998 to limit access to higher education for technical high school graduates with the introduction of weighting coefficient to their scores achieved in the entrance examinations, which penalized them with respect to general high school graduates. This regulation led to a sharp decrease in vocational-technical participation, quantitatively and qualitatively. These schools lost their attractiveness for many talented students”.

Analyzing the views of the six students who graduated from junior high school last year and preferred vocational and technical education on TVET high schools in general, it was understood that all of them were happy with their preferences. The reason for this may be the fact that after graduation from TVET high schools students will have acquired the qualifications of a vocation and they will find a job easily in the labor market as indicated by the student GSP1 “TVET is a well-established education system. It offers lots of job opportunities. The graduates can start and run their own enterprises. That’s why TVET is good.” One another promising
finding with the interview with those six students was that the importance of TVET school system was understood. The sun metaphor formulated for TVET high schools and their vocational programs by the student SP3 “The sun enlightens the world. So just like the sun, the graduates of TVET high schools will enlighten the world by performing their profession and contributing to the welfare of the world” could explain and support this finding.

As for analyses of four parents’ views and attitudes on Vocational and Technical Education, it may be concluded that they shared the same ideas with the six students who graduated from junior high school last year and preferred vocational and technical education on TVET high schools in that students could find jobs which were parallel with the qualifications of their professions they acquired during their education in TVET high schools and could start to work in labor market just after graduation. This finding is consistent with the aims of Ministry of Education for Vocational and Technical High Schools as Vocational and technical secondary education involves the institutions that educate and train students as manpower for business, for other professional areas and for higher education (MEB, 2001). Parents also admitted that TVET high schools and their facilities and job opportunities were not known by students and parents enough. Accordingly, one of the parents’ (PP3) confession and suggestion that “Our children do not know about vocational programs in TVET. TVET programs can be made familiar to them. School visits to all types of vocational high schools is the best way for that. Those visits and introductions would be useful for students to prefer the best one for themselves” was very parallel with the activities carried out in the action plan of this research.

As a result of analysis of the students’ views both individually and in focus group on Vocational and Technical Education prior to introductory presentations on TVET high schools and school visits, twenty-four (58.5%) out of forty-one students admitted that they did not know about the content of education and training in TVET secondary schools and 15 (36.5%) of them had negative attitude to TVET high schools. This finding was significant for this study because it showed that how well-directed the action research carried out to make vocational and technical upper secondary schools more attractive for students to prefer was. The reason why 36.5% of those students in the sample had negative attitude to TVET high schools was the fact that they did not find those schools prestigious and they wanted to attend higher education after high school education. This finding is consistent with Sonmez’s (2006) finding that vocational high schools are not considered good enough to prepare the students for university education (Sonmez, 2006). One another important finding was that the students who were willing to attend vocational programs in TVET high schools wanted to prefer first health vocational programs in Vocational Health High Schools, second catering in Tourism Vocational High Schools and third Information and communication technology (ICT) programs. The reason for preferring those vocational programs can be those students’ knowing to find a job easier and start to work just after graduation as they stated in interviews. This result is parallel with Yavuz’s (2003) idea that a student who studies in a vocational school must know that he will have a good job, earn more money, and get good life conditions after graduating from the vocational school successfully.

When forty-one students were asked whether they would prefer TVET secondary schools for their high school education sixteen of them said “No” for their preferences and twenty-four of them said “Yes” and one “Perhaps” for their preferences. However after presentations on TVET high schools and visits to TVET high schools when forty-one students were asked whether they knew about TVET high schools and they positive or negative attitude to those schools, all of them said they knew much about TVET high schools and only eight of them had negative attitude to those schools and when forty-one students were asked whether they would prefer TVET secondary schools for their high school education, thirty-three of them said “Yes” and only eight said “No”. This showed at least the change in the attitudes of the students likely to prefer TVET education, presentations on TVET high schools and visits to TVET high schools in the action plan worked well in favor of the attractiveness of TVET high schools and in terms of the attitudes of the students to TVET high schools, the aim of this action research was reached. Additionally, the student SP29’s thoughts as “I will have the qualifications of a profession. Your future will be unclear if you attend a general high school. After school visits and introductory presentations on TVET high schools I have understood that to attend a TVET high school will be better for my future” and also student SP20’s thoughts as “I think everything has been done to introduce the facilities and job opportunities of TVET high schools. I believe that in our class majority of my classmates will
prefer TVET high schools as they have already known about the facilities and job opportunities of those schools. Prior to visits and presentations there were few students in my class to prefer TVET high schools but now I know that there are more students...” also supported the aim of this action research and showed how well the action plan worked.

One of the remarkable finding was the fact that parents usually do not desire their children to prefer and attend TVET high schools although their children desire to prefer and attend to those schools. The student SP9’s confession as “Yes. Indeed my mother wants me to attend a general high school, but I think about preferring and attending a TVET high school because after graduation, you have the qualifications of a profession and you are employed easily. At those schools you can directly learn about the profession you prefer and concentrate on it. But for general high schools this is not the case.” and the student SP20’s confession as “…For example my mother forced me not to prefer and attend a vocational program in a TVET high school yesterday. Parents should not force their children about their school preferences.” are evidences to parents’ pressure over their children. This finding was parallel with Bozgeyikli and Isıklar’s (2011) finding in their study called “An obstacle of guiding students to apprenticeship training center: negative parent opinions”. In that study it was found that parents did not want their children to attend vocational programs in TVET and they had negative attitudes against those vocational programs because they wanted their children to go on a university. Additionally, it was understood from the metaphors which students who wanted to prefer TVET high schools formulated for TVET high schools that TVET high schools were seen as golden opportunity for students to be employed in labor market. The student SP2’s “golden bracelet” metaphor for TVET high schools and his explanation as “There is an old saying by our grand parents that we should have a golden bracelet around one of our wrist. That golden bracelet around one of our wrists symbolizes having qualifications of a profession. So when I have qualifications of a profession, I will have a golden bracelet around one of my wrist” and the student SP18’s gold metaphor for TVET high schools and his explanation as “…Because to acquire the qualifications of a profession is very worthy. Every graduate of TVET high schools has his or her profession and he or she can faster and more easily find a job and start work. Besides he or she can improve own career at work.” support the finding that TVET high schools are seen as golden opportunity for students to be employed in labor market and in career. This finding was also promising in that the attractiveness of TVET high schools had increased recently.

Finally, as a result of this action research there was a promising difference in terms of the proportional change between the number of the students who graduated from junior high school in the sample and attended to technical and vocational upper secondary schools last year and the number of the students in the sample who have graduated from junior high school and then who will attend to technical and vocational high schools this year as thirty-four (82.92) of forty-one students, thirteen (31.70) in their first preferences, three (7.31) in their second preferences, six (14.63) in their third preferences, the rest nineteen (46.34) in their last seven preferences in order, preferred TVET high schools and their vocational programs. This finding was also promising in terms of 9th Development Plan (2007-2013) in Turkey, which investigated that the 65 % of the students are to be enrolled to the VET high schools and the remaining part is to attend the general education high schools (SPO, 2006) and also supported the aim of this action research and showed how well the action plan worked.

IMPLICATIONS

This research analyzes vocational center managers, teachers, apprentices, apprentices’ parents, managers of chambers of commerce, employers and master trainers’ perceptions on the problems in apprenticeship education and training. Thus the findings of the research have important implications about how vocational and technical secondary education can be updated, improved, increased the quality and attractiveness, well-organized according to market needs and thus more preferred in Turkey based on the perceptions and preferences of the students who chose or did not choose vocational and technical education and their parents’ perceptions.
In addition, this study suggests important implications about what can be done to increase the attractiveness of TVET high schools and to make more students to prefer those schools in Turkey based on the suggestions on how to solve the problems related to low demand for TVET high schools and to increase the attractiveness of those schools by students and their parents as they, themselves, expressed their views related to the preference problems of those schools and suggested solutions on how to make TVET high schools more attractive for students to prefer.

CONCLUSION

TVET high schools in Turkey were perceived both by students and their parents as the schools the aim of which is to train and to educate students according to the vocational programs they choose based on their talents, abilities and interests, help them to find a job easily in the labor market after graduation by acquiring the qualifications of the professions they preferred or as the schools which offer a chance to run their own enterprise. However, TVET schools are not perceived prestigious when compared to general high schools as students attending to TVET high schools the aim of which to train and educate students as intermediate manpower for labor market are not as luckier as those attending general high schools the aim of which to prepare students for academic higher education in attending tertiary education.

In vocational programs in TVET high schools the most preferred ones are health-medical emergency, nursing, anesthesia-, catering, tourism, ICT technology, maritime, child development, electricity, accounting tourism and architecture as they offer job opportunities after graduation. Participants’ suggestions on how to make vocational and technical upper secondary schools more attractive for students to prefer were reduction at the entrance scores of vocational programs, guiding students according to their abilities, talents and interests, presentations of vocational programs to both parents and students, school visits, guidance by teachers and parents apt to students’ abilities, talents and interests, preferring vocational programs with students’ own free will, the development and update of the facilities of TVET high schools, increase at the entrance scores of vocational programs for the prestige and so attractiveness, attending at younger ages, advertisements and campaigns to introduce the facilities and job finding opportunities of TVET high schools, changing traditional names of TVET high schools and putting more attractive names, carried out student centered education and training vocational programs, increasing the number and quality of teachers in all vocational programs, increase the number of subject courses, increase the number of vocational programs which offer job guarantee after graduation, increasing the number and quality of TVET high schools, building TVET high schools in areas in a city easy to reach, increase the awareness and consciousness of parents on the facilities of TVET high schools, not forcing the children about their school preferences, organizing science fairs and an exhibitions of works done by students and their teachers in TVET high schools.

The metaphors formulated by students on TVET high schools and their vocational programs were a roller, the sun, a machine, a pen, a history book, work of labor, money, a businessman, gold, a teacher, a factory, a tree and its roots, an enterprise, a toy, a tool, a house, a car, future, small kitchen machines and tools, a garden, a thick book of encyclopedia, a golden bracelet.

To sum up, there are still much to do in order to make TVET high school education more attractive for students to prefer although the findings of this action are promising and supporting in terms of making vocational and technical upper secondary schools more attractive for students to prefer. Thus, all partners had better be aware of the difficulties and problems which are likely to affect the prestige and attractiveness of TVET high schools negatively in order to create an improved, up-to-date, well organized TVET high schools according to the requirements of the changing labor market needs and thus more attractive to prefer. Therefore, promotional activities and introductions to junior high school students for technical and vocational upper secondary schools are essential to attract more students to TVET high school education and thus to decrease the number of unemployment of educated adults.
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CONSTRUCTIVIST LEARNING ENVIRONMENTS: 
THE TEACHERS’ AND STUDENTS’ PERSPECTIVES

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ABSTRACT

In this research, ninth grade mathematics learning environments’ coherence with constructivist learning approach was examined according to teachers’ and students’ views. Thirty-four schools were included into the sampling from the seven regions of Turkey. 208 teachers and 1830 students from these schools participated to the study. Data was collected with “Constructivist Learning Environments Questionnaire” and “Learning Process Questionnaire”. The one-way ANOVA, Welch and independent samples t-test was employed to analyze data. According to results of the study there is no significant difference between teachers’ and students’ views $p > .05$. Students’ views, on the other hand, are significantly different according to deep learning levels $p < .05$ but between surface approach levels there is no significant difference $p > .05$. In addition, teachers’ views do not differ significantly according to teaching experience and educational level $p > .05$. Based on these results, it can be concluded that developments in our education system started a positive change in classroom implementations.

Key Words: Constructivist learning environment, learning approaches, curriculum evaluation.

“The principal goal of education is to create men and women who are capable of doing new things, not simply of repeating what other generations have done...men and women who are creative, inventive discoverers...The second goal of education is to form minds which can be critical, can verify and not accept everything they are offered.” J. Piaget (as cited in Etuk, 2014).

INTRODUCTION

Piaget’s statement above reflects today’s educational understanding. Although there is a wide consensus on this opinion in theoretical level, it still does not show itself fully in practice. Therefore, one should consider whether schools are for transferring traditional culture to new generations or equipping individuals with skills to challenge the traditional structure (Kohn, 1999). Schoen (2008) points out that in this century, we should rethink about the school concept and question whether the school experiences help to develop skills for coping with real life situations. By this point, Piaget's opinion, which is stated above can be viewed as a guiding principle. If we ask for individuals with the mentioned skills, we should focus firstly on learning environments.
This is because educating individuals with skills such as creativity and higher order thinking is mostly associated with incorporation of constructivism into the learning environments.

Constructivism can be defined basically as a learning approach, which defends that students subjectively construct, interpret and reorganize their knowledge (Windschitl, 1999). In learning environments this approach reveals itself as encouraging students to discover, discuss and interpret knowledge; as organizing learning environments for helping students construct and implement their own theories and as motivating reflection of gained knowledge and skills (Jonassen, 1999). Such a learning environment supports students to take responsibility for their own learning. To expect students take responsibility for learning and construct their knowledge it is important to employ mental processes like questioning, problem solving and researching in classroom settings extensively (Marlowe & Page, 2005). In a number of studies it is emphasized that a learning environment, which is designed according to constructivist principles, has positive effects on creativity (James, Gerard, & Vagt-Traore, 2010; Tezci & Gürol, 2003), meta-cognitive skills (Jager, Jansen, & Reezigt, 2005; Lam, 2011), critical thinking (Maypole & Davies, 2001) and problem solving (Bay, Bagceci, & Cetin, 2012; Wilson, 2010). These research results point out that individuals defined by Piaget, can be raised in constructivist learning environments. From this point on, it is not wrong to tell, evaluating a learning environment’s coherence with constructivism is of preliminary importance for raising students with aforementioned characteristics.

There are two main ways to evaluate learning environments for its accordance with constructivist principles. Using instruments which are designed for evaluating constructivist learning environments is one of them and the other one is using students’ learning approaches as an evaluation criterion (Alt, 2014). Learning approaches focus on learning strategies and motivational sources on a learning task. According to characteristics of these learning strategies and motivational sources, deep and surface learning are defined as the two main learning approaches. Individuals with surface approach handle learning units separately, have difficulty by making sense out of new information and focus on recalling rather than understanding knowledge. For deep learners, on the other hand, learning is associated with searching for evidence, establishing connections, making meaning and employing higher order thinking skills (Entwistle, 2005; Houghton, 2004). Surface learners passively receive information from teachers or books and tend to forget new knowledge easily, whereas deep learners construct their own meanings by relating existing and new knowledge and transfer their learning to original situations (Hermida, 2015). Regarding the features of two main learning approaches, motivating students to become deep learners is of preliminary importance for constructivist learning. This view is also supported by a considerable amount of studies which point out that the purpose of creating constructivist learning environments is to encourage deep learning (Dart et al., 1999; Fok & Watkins, 2007; Çolak, 2006). In addition to these studies, a constructivist learning environment survey was developed by Alt (2014) with a sub-dimension of “in-depth learning”.

To sum up, constructivism redefines the role of students and the teachers and their interrelationships by creating a nurturing, but not a competitive classroom environment (Benudhar & Moumita, 2013). This new learning environment also forms a basis for educational reforms. Student centered environment’s aim of helping individuals to become creative, independent, problem solving, lifelong learners, triggers a change towards creating such learning environments (Fok & Watkins, 2007). By this point, reflection of this understanding to actual learning environments maintains its importance. This view forms the rationale of the present study, which has the purpose of evaluating learning environments’ accordance with constructivist learning principles. The subject area chosen for the research is mathematics, because within a national reform movement, the mathematics curriculum for secondary school was revised with a constructivist learning perspective in 2011. The new curriculum focuses on students’ active construction of mathematical concepts and defines learning environments as spaces which provide opportunities to develop main mathematical skills such as reasoning, problem solving, communication and modelling. The nature of learning mathematics, as a matter of fact, involves problem solving, showing and expressing ideas, discovering patterns and creating meaning from new situations (Trafton & Claus, 1994); discussion and questioning (Burghes, 1989); deep understanding of concepts, relationships and generalizations, and provides individuals with different ways for logical and creative thinking (Huetinck & Munshin, 2004). All of these features signifies constructivist learning.
Jaworski (2002) similarly indicates that the principles of mathematical learning overlap with constructivist learning principles.

In this vein, the purpose of the present study is to determine whether the change of mathematics curriculum towards constructivist learning reflects itself in actual learning environments. To find answers for this main problem, the views of teachers and students from seven regions of Turkey and selected via maximum variation sampling, are studied. Because students’ learning approaches are strong indicators for actual constructivist learning environments, the present study also examined learning environments from this perspective. From this point on, the research questions of the study are: (i) is there a significant difference in students’ and teachers’ views of constructivist learning environments? (ii) is there a significant difference in students’ views of constructivist learning environments according to deep and surface learning approach? and (iii) is there a significant difference in teachers’ views of constructivist learning environments according to teaching experience and educational level?

**METHOD**

**Population and Sampling**

Students and mathematics teachers from ninth grade of general secondary schools of Turkey constitutes the research population. Maximum variation sampling was used as sampling strategy. The purpose of maximum variation sampling is to create a relatively small sample reflecting the variations of the target population in maximum level (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2010; Yıldırım & Şimşek, 2006). For this purpose three cities from each region, and two central schools from each of these cities was selected according to simple random sampling method. With this method, 42 schools were included into the sampling. From each school two ninth grade classes are selected with simple random sampling and both students and teachers attending these classes were included in the sampling. Five schools from Mediterranean, three schools from Eastern Anatolia, five schools from Aegean, six schools from Central Anatolia, five Schools from South-Eastern Anatolia, four schools from Black Sea and six schools from Marmara Region, making up a total of 34 schools, responded to the surveys. The characteristics of the research sampling are presented in Table 1.

<table>
<thead>
<tr>
<th>Region</th>
<th>Teacher</th>
<th>%</th>
<th>Student</th>
<th>%</th>
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<td>1830</td>
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</table>

**Research Instruments**

**Constructivist Learning Environments Questionnaire (CLEQ):** Constructivist Learning Environments Questionnaire developed by Tenenbaum, Naidu, Jegede, and Austin (2001), and adapted to Turkish culture by Fer and Cirik (2006) was used to measure teachers’ and students’ views of constructivist learning environments. The questionnaire consists of seven factors and a total of 30 items. “Arguments, discussions, debates” factor covers items related with problem solving, higher order thinking and encouraging deep learning; “conceptual conflicts and dilemmas” includes items about creating dilemmas by presenting conflicting situations to learners’ hypotheses; “sharing ideas with others” has items to measure the teacher-student and
student-student interaction; “materials and resources targeted toward solutions” factor is related with using raw data to organize the complexity of real world settings; “motivation towards reflections and concept investigation” covers items about discovering students’ points of view and respecting them; “meeting students’ needs” is about presenting problems that students can relate with themselves; and finally “making meaning, real life examples” factor has items about supporting learning with a rich learning environment which consists of real life situations. The questionnaire has a five point Likert scale, namely, never (1), seldom (2), sometimes (3), often (4), always (5). The Cronbach alpha internal consistency coefficients of the factors in the original scale vary between .72 and .87. The Cronbach alpha coefficient for the total survey is .86. The Cronbach alpha coefficients of the factors in Turkish form are between .89 and .94 in teachers group, and are between .86 and .93 in students group. For the total Turkish scale the Cronbach alpha coefficient is .91 for teachers and .89 for students. For the present study the total scale’s Cronbach alpha coefficient is found to be .92 for teachers and students. In factors, the coefficients are between .66 and .86 for the teachers, and between .69 and .83 for the students. These findings show that the scale has a reliable structure to be used for the present research.

Learning Process Questionnaire (LPQ): Learning Process Questionnaire was used to measure students’ learning approaches. LPQ is developed originally by Kember, Biggs, and Leung (2004) for secondary school students and adopted to Turkish culture by Çolak and Fer (2007). The scale includes a total of 22 items within deep learning and surface learning factors. Eleven items belong to deep learning and 11 items belong to surface learning factor. The questionnaire has five point Likert scale, namely, never true (1), rarely true (2), sometimes true (3), often true (4), always true (5). The original scale has Cronbach alpha coefficients of .82 for deep learning approach and .71 for surface learning approach. For the Turkish form, the coefficients are .79 and .72 respectively. For the present study the Cronbach alpha coefficient is calculated as .76 for deep learning and .57 for surface learning. These findings show that the scale has an acceptable reliability level to be used for the present research.

Procedure
Permission was taken from Secondary School Department of Ministry of National Education to implement instruments for teachers and students. Instruments were posted to 42 schools, which were included in the sampling. Teachers and students participated to the study on voluntary basis. A written document covering purpose and importance of research and characteristics of the instruments were sent to school managers. Teachers and students filled the surveys and the surveys were re-posted to researchers by school managers. The suitability of data with normal distribution was examined through Q-Q plots. For determining the equality of variations of dependent variables in each group Levene test was used. For the three research questions of the study (i) independent samples t-test; (ii) Welch test for analyzing data for deep learning variable and Tamhane test for multiple comparisons, one way Anova for analyzing data for surface learning variable; (iii) one way Anova for teaching experience variable and independent samples t-test for educational level variable, were used. SPSS 17.0 was used for analyzing data.

FINDINGS

Findings for the First Research Question
Independent sample t-test was conducted to find answers for the first research question: Is there a significant difference in teachers’ and students’ views on constructivist learning environments? Because the purpose of the study is to examine the constructivist learning principles in classroom implementations within a broader perspective the total CLEQ scores of teachers and students were analyzed. Although the data from the factors of CLEQ were not analyzed the descriptive statistics were presented in order to provide more details to discuss the findings thoroughly. Descriptive statistics for CLEQ total and factor scores were presented in Table 2 and findings from independent sample t-test can be found in Table 3.
Table 2: Descriptive Statistics for Teachers’ and Students’ CLEQ Scores

<table>
<thead>
<tr>
<th>Factor</th>
<th>Teacher (n = 208)</th>
<th>Student (n = 1830)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arguments, discussions, debates</td>
<td>3.41 .70</td>
<td>3.37 .88</td>
</tr>
<tr>
<td>Conceptual conflicts and dilemmas</td>
<td>2.28 .83</td>
<td>2.53 .99</td>
</tr>
<tr>
<td>Sharing ideas with others</td>
<td>3.61 .65</td>
<td>3.29 .96</td>
</tr>
<tr>
<td>Materials and resources targeted toward solutions</td>
<td>3.89 .63</td>
<td>3.81 .87</td>
</tr>
<tr>
<td>Motivation towards reflections and concept investigation</td>
<td>3.42 .68</td>
<td>3.40 .87</td>
</tr>
<tr>
<td>Meeting students’ needs</td>
<td>3.26 .65</td>
<td>3.31 .88</td>
</tr>
<tr>
<td>Making meaning, real life examples</td>
<td>3.66 .63</td>
<td>3.57 .86</td>
</tr>
<tr>
<td>Total</td>
<td>3.38 .50</td>
<td>3.34 .67</td>
</tr>
</tbody>
</table>

According to the data in Table 2 the lowest mean score of teachers and students is in “conceptual conflicts and dilemmas” factor. The highest mean score, on the other hand is in “materials and resources targeted toward solutions”. Teachers have higher total score (3.38) than students (3.34).

Table 3: T-test Results for Teachers’ and Students’ CLEQ Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>208</td>
<td>3.38</td>
<td>.50</td>
<td>298.66</td>
<td>-1.02</td>
<td>.30</td>
</tr>
<tr>
<td>Student</td>
<td>1830</td>
<td>3.34</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$p < .05$.

Teachers’ mean score is 3.38 (.50) higher than students’ mean score 3.34 (.67), as can be seen in Table 3. T-test results, on the other hand, reveals that this mean difference is not statistically significant $t(298.66) = -1.02, p = .30, p > .05$.

Findings for the Second Research Question

Descriptive statistics were examined firstly, to find answers for second research question: Is there a difference in students’ views of constructivist learning environments according to deep and surface learning approach level? Students’ deep and surface learning mean scores were analyzed and categorized as low, medium and high according to standard deviation score. The assumptions of Anova test were investigated after that. Q-Q plots by these investigations indicated that the data were distributed normally. However, Levene test results for deep learning variable revealed that the variances between groups were not equal $F(2, 1827) = 11.90, p = .00, p < .05$. Therefore, Welch test, which is an alternative of Anova, and Tamhane test for multiple comparisons were used. Levene test results for the surface approach showed that the group variances were equal $F(2, 1827) = 1.07, p = .34, p > .05$. Ensuring equality of variance, Anova test was used for analysis of data from surface learning approach variable. Table 4 presents descriptive statistics for deep and surface learning levels. Table 5 and 6 shows Welch test results for deep learning variable and Anova test results can be found in Table 7 and 8.

Table 4: Descriptive Statistics for Students’ Deep and Surface Approach Scores

<table>
<thead>
<tr>
<th>Learning Approach</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep Learning</td>
<td>1830</td>
<td>3.26</td>
<td>.65</td>
</tr>
<tr>
<td>Surface Learning</td>
<td>1830</td>
<td>3.12</td>
<td>.55</td>
</tr>
</tbody>
</table>

Table 4 shows that the mean for deep learning scores is 3.26 (.65); whereas the mean for surface approach is 3.12 (.55).
Table 5: Descriptive Statistics for Students’ CLEQ Scores According to Deep Learning Levels

<table>
<thead>
<tr>
<th>Deep Learning</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>137</td>
<td>2.90</td>
<td>.80</td>
</tr>
<tr>
<td>Medium</td>
<td>1118</td>
<td>3.27</td>
<td>.62</td>
</tr>
<tr>
<td>High</td>
<td>575</td>
<td>3.58</td>
<td>.65</td>
</tr>
</tbody>
</table>

Table 6: Welch Test Results for Students’ CLEQ Scores According to Deep Learning Levels

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>df1</th>
<th>df2</th>
<th>F</th>
<th>Significant Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructivist</td>
<td>2</td>
<td>350.27</td>
<td>66.66</td>
<td>C-B, C-A, B-A</td>
</tr>
</tbody>
</table>

Welch test results presented in Table 6 reveals a significant difference in student views of constructivist learning environments according to deep learning levels in 95 percent, $p < .05$, confidence interval $F(2, 350.27) = 66.66$, $p = .00$, $p < .05$. To specify the groups between which this difference exist Tamhane test was conducted. According to results, there is a significant difference in favor of high level deep learners between high 3.58 (.65), medium 3.27 (.62) and low 2.90 (.80) deep approach levels $p = .00$, $p < .05$. Moreover, the difference is also significant in favor of medium level learners between medium and low deep learning approach levels $p = .00$, $p < .05$.

Table 7: Descriptive Statistics for Students’ CLEQ Scores According to Surface Learning Levels

<table>
<thead>
<tr>
<th>Surface Learning</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>159</td>
<td>3.32</td>
<td>.70</td>
</tr>
<tr>
<td>Medium</td>
<td>1447</td>
<td>3.33</td>
<td>.66</td>
</tr>
<tr>
<td>High</td>
<td>224</td>
<td>3.43</td>
<td>.70</td>
</tr>
</tbody>
</table>

Table 8: Anova Test Results for Students’ CLEQ Scores According to Surface Learning Levels

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between group</td>
<td>1.89</td>
<td>2</td>
<td>.94</td>
<td>2.06</td>
<td>.12</td>
</tr>
<tr>
<td>Within group</td>
<td>835.15</td>
<td>1827</td>
<td>.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>837.04</td>
<td>1829</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to results in Table 8 there is no significant difference in student views of constructivist learning environments according to surface learning levels in 95 percent, $p < .05$, confidence interval $F(2, 1827) = 2.06$, $p = .12$, $p > .05$.

Findings for the Third Research Question

Descriptive statistics were examined firstly, to find answers for third research question: Is there a difference in teachers’ views of constructivist learning environments according to teaching experience and educational level? After that, Anova test for teaching experience and independent samples t-test for educational level variable was conducted. Before the Anova test, assumptions were examined. Q-Q plots indicated that data was distributed normally and according to Levene test results the variances between groups were equal $F(2, 205) = 1.70$, $p = .18$, $p > .05$. Results were presented in Table 9, Table 10 and Table 11 respectively.

Table 9: Descriptive Statistics for Teachers’ CLEQ Scores According to Teaching Experience

<table>
<thead>
<tr>
<th>Teaching Experience (yrs)</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>64</td>
<td>3.31</td>
<td>.52</td>
</tr>
<tr>
<td>11-20</td>
<td>110</td>
<td>3.38</td>
<td>.47</td>
</tr>
<tr>
<td>21+</td>
<td>34</td>
<td>3.51</td>
<td>.54</td>
</tr>
<tr>
<td>Total</td>
<td>208</td>
<td>3.38</td>
<td>.50</td>
</tr>
</tbody>
</table>
Anova test results in Table 10 show that there is no significant difference in teachers' views of constructivist learning environments according to teaching experience in 95 percent, $p < .05$, confidence interval $F(2, 205) = 1.74, p = .17, p > .05$.

Table 11: T-Test Results for Teachers' CLEQ Scores According to Educational Level

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>159</td>
<td>3.36</td>
<td>.49</td>
<td>206</td>
<td>-1.04</td>
<td>.29</td>
</tr>
<tr>
<td>Master/PhD</td>
<td>49</td>
<td>3.45</td>
<td>.53</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$p < .05$

According to the results in Table 11 the mean scores of teachers completed graduate programs 3.45 (.53) are higher than teachers with bachelor's degree 3.36 (.49). However, t-test results reveal this mean difference is not statistically significant $t(206) = -1.04, p = .29, p > .05$.

DISCUSSION AND CONCLUSION

For the first research question teachers’ and students’ CLEQ scores were examined to understand if there is a significant difference between their views. According to the results, teachers evaluate the learning environments as showing more constructivist features than students. However, this finding did not point out a statistical difference. There are studies on constructivist learning environment perceptions of teachers and students, which reported significant differences in favor of teachers (Ocak, 2012; Johnson & McClure, 2004). Yore, Anderson, and Shymansky (2005) compared supervisors’ and teachers’ perceptions of constructivist learning environments. In their study, although supervisors evaluated teachers as implementing constructivist learning strategies in classroom settings, students of those teachers did not agree with that. There is no significant difference for the present study, but still it is important to elaborate on why teachers have higher CLEQ scores than students. In literature, this difference is explained with the influence of past learning experiences on students’ perceptions (Segers & Dochy, 2001, as cited in Gijbels, Watering, Dochy, & Bossche, 2006) and with the different perceptions of teachers’ and students’ on the features of constructivist learning stated in the instruments (Otting & Zwaal, 2007). Unal and Akpinar (2006) noted in their study that although teachers have relatively positive perceptions on constructivist learning on theoretical level, in classroom settings they do not implement constructivist learning principles properly. Findings of studies in the literature signify the importance of conducting qualitative studies to explore the difference in teachers’ and students’ views on constructivist learning in detail. To find out reasons for this difference will also help for improving the quality of classroom implementations of constructivist learning approach.

To understand the nature of difference in teachers’ and students’ views the present study also examined mean scores of both groups in the sub-dimensions of the CLEQ. According to this examination, both teachers and students have highest scores in the sub-dimensions of “materials and resources targeted toward solutions” and “making meaning, real life examples”. The lowest mean scores, on the other hand, are in “conceptual conflicts and dilemmas” sub-dimension. On a study comparing constructivist learning perceptions in problem-based and traditional learning environments, it was also found that the highest scores in traditional learning environment are “materials and resources targeted toward solutions” and “making meaning, real life examples” dimensions (Gijbels et al., 2006). Doğanay and Sarı (2012) noted in their study that, “materials and resources targeted toward solutions” dimension coincide strongly with traditional learning. These findings point out the fact that change from traditional environments towards constructivist ones will not happen so fast, and therefore,
although there are changes in programs we are in a transition phase for the classroom implementations of constructivist learning approach. This perspective is also supported by the lowest scores’ being in “conceptual conflicts and dilemmas” dimension. Otting and Zwall (2007) reported lowest mean scores also in “conceptual conflicts and dilemmas” dimension for both teachers and students in the problem based learning environment. In Gijbels et al. (2006) study, a significant difference between problem-based and traditional learning environments was found in “conceptual conflicts and dilemmas” dimension. Researchers explain that “conceptual conflicts and dilemmas” dimension represents constructivist learning approach more than the other dimensions of CLEQ. Ocak (2012), found also that lowest mean scores for both teachers and teacher candidates are in “conceptual conflicts and dilemmas” dimension and similarly indicated that this dimension covers most important features for constructivist learning. From this point of view, it is not wrong to tell that “conceptual conflicts and dilemmas” dimension is one of the hardest aspects of constructivist learning to be implemented in classroom settings.

Examining total CLEQ mean scores, the past studies reveal that teachers’ and students’ scores are between 3 and 4 out of a five point scale (Gijbels et al., 2006; Ocak, 2012; Otting & Zwall, 2007). Otting and Zwall (2007) pointed out that scores above 3 are satisfying for improvement. The results of the present study also refer to a change towards constructivist approach in both programs and classroom environments. However, the study also underlines the fact that especially teachers, who have a major role in implementation, are in a transition stage. Parallel to this view, Evin (2013), in her study found that teachers in Turkey mostly prefer facilitative/personal model/expert teaching style, which is associated with humanistic approach. But the second style teachers prefer is authoritarian/expert style. Researcher explained this finding with Turkey’s being on a transition phase for educational reforms. In conclusion, it is not wrong to tell the reforms in our educational system triggers a change in classroom implementations.

Within the second research question of the study the results indicated that students differ in their CLEQ scores significantly according to their deep learning levels. More precisely, students with a high level deep approach evaluated their learning environment more constructivist than middle and low levels. Also the middle level has significantly higher CLEQ scores than low-level deep learners. The level of surface approach, on the other hand, did not establish a significant difference on students’ CLEQ scores. These findings underline an association between learning environments and students learning approaches, especially in favor of deep learning approaches. Fok and Watkins (2007), in their experimental study found that constructivist learning environments triggered a shift towards deeper and more meaning oriented motivation and strategy. They also noted that the change occurred in groups with students who have the strongest awareness of the shift in the learning environment. Campbell et al. (2001) reached similar findings in their study, where they pointed out that students with deep approach to learning can grasp the active teaching strategies teachers employ easily and use these strategies for their learning more effectively. Moreover they also found that students with surface approach to learning tended to change their learning strategies towards deeper and more meaningful approach. In Dart et al. (1999) study students with deep approach to learning perceived the elements of constructivist learning environments more strongly. The students in Yuen-Yee and Watkins’s (1994) study similarly preferred learning environments with a friendlier atmosphere where students and teachers collaborated to provide interesting but challenging activities. Students associate this kind of environment with deep learning approach. Different from the results of studies, which support the findings of the present study, Unal and Akpinar (2006) and Çalışkan (2004) found no significant difference in students’ learning approaches according to constructivist teaching strategies. They associate this result with the short duration of the study and concluded that to expect significant changes in students learning approach, long-term interventions are needed. The results of the studies reveal a reciprocal relationship between deep learning approach and constructivist learning environment. In other words, constructivist learning environments encourage deep learning and deep learners are the ones who can comprehend and benefit from the elements of constructivist learning environments. The present study put the latter relationship forward, that is deep learners are more aware of the constructivist learning environments and use materials and strategies provided for them more effectively to reach meaningful understandings.
The views of students with varying levels of surface approach are not significantly different for the present study. Literature also reveals no significant difference in students’ views of constructivist learning according to surface learning approach (Unal & Akpinar, 2006; Çalışkan, 2004; Çolak, 2006). The main reason for this is the fact that although there are signs for the change, students cannot quit their surface learning habits easily in an outcomes-based environment where multiple choice tests are still a major evaluation tool. Because changing the instructional method is itself not enough to discourage a surface approach and promote a deep approach to learning (Herrmann, 2013, as cited in Laguador, 2014) in an outcomes-based environment.

Students’ learning approaches are accepted as one of the indicators for constructivist learning environments (Alt, 2014). Therefore, it is important to discuss students mean scores regarding their preferred learning approach. The mean score for deep learning is 3.26, whereas it is 3.12 for surface learning. Both means can be evaluated as moderate levels within a five point scale. In Çolak and Kaya’s (2013) study students attending a vocational high school have a 3.07 mean for deep and 3.22 for surface learning. Öner (2008) reported that students attending Anatolian high schools in Istanbul, have a mean score of 3.16 for deep learning and 3.05 for surface learning. The results of these studies from Turkey coincide with the present study. In Alt’s (2014) study deep learning scores were examined in seminar, distance learning environment and lecture based environment. The mean score for deep learning in these classes were 3.98; 3.35 and 2.20 respectively. Although, deep learning scores found in the present study are higher than the scores in traditional learning environments, they are lower than scores reported in constructivist learning environments. Within the current research question, it is important to note that besides teachers’ efforts to create constructivist learning environments, students’ participation to those environments is also a factor. In other words, the implementation of constructivist approach is not only related with teachers’ actions, but the preferences of students to participate in these processes should also be taken into account. As Perkins (2006) stated, it takes two to tango. Within this context, it is not wrong to tell, students are also in an adaptation phase regarding constructivist learning approach.

Results within the third research question of the study indicated that there were no significant differences among teachers’ CLEQ scores with respect to teaching experience and educational level. This finding is consistent with similar research. For instance, Ağlagül (2009), in her study found that teaching experience had no significant effect on teachers’ activities when creating a constructivist learning environment. Parallel to the present study, Ağlagül (2009) reported that the less experienced teacher group has the lowest mean score from CLEQ. Tatlı (2007) also did not find any difference with respect to teaching experience in implementing constructivist teachers’ roles. Isikoglu, Basturk and Karaca (2009), on the other hand, pointed out that student-centered beliefs of teachers differ significantly according to teaching experience. However, in regard to the direction of the difference they reached the similar results, that is, teachers’ with more experience have more student-centered beliefs. Authors explained this finding as teachers developed better views of students and instruction over the years. Because having student-centered beliefs for instruction is a preliminary sign of constructivist approach the findings of this research supports the present study’s findings about creating constructivist learning environments and teaching experience. Snider and Roehl (2007), conducted a more general survey regarding teachers’ beliefs about pedagogy and related issues. They also reported no significant difference between experience groups about their pedagogical orientations. Cheung and Wong (2002), in their study examined teachers’ beliefs about alternative curriculum designs and found that teachers with more professional experience mostly prefer an academic oriented curriculum to cognitive, social re-constructionist, humanistic and technological ones. In other words on the contrary of other presented studies this study indicates that teachers with more professional experience have a more academic orientation towards curriculum, which is mostly not among the top priorities of a constructivist curriculum. Akınar and Aydın (2007) found significant differences in teachers’ perceptions of change in Turkish educational system. According to the results of their study teachers new to the profession perceive the change towards a constructivist curriculum more positive and have more positive understanding about student-centered instruction.

Examining the results of studies on years of experience and beliefs/perceptions about learning one can conclude that teaching experience is not among the most effective variables for designing and implementing a
constructivist learning environment. Most of the studies reported no significant differences in regard to constructivist perceptions, parallel to the present study. The higher scores in favor of more experienced teachers can be explained with the lack of necessary classroom management skills of novice teachers to create fruitful learning environments. Experienced teachers, on the other hand, are more likely to have skills for facilitating students’ self-regulation and critical thinking, linking new learning to students’ existent knowledge and guiding students’ social interaction (Chen & Rovegno, 2000).

Within the third research question of the study it is found that there is no significant difference in teachers’ constructivist learning environment survey scores according to level education. The mean scores, on the other hand, show that higher educated teachers evaluated their learning environments as more constructivist. There are studies both supporting and contradicting with this finding. For instance Eskici (2013) found that teachers with master’s degree have more positive attitudes towards constructivist learning than teachers with bachelor’s degree. However, this difference is not statistically significant. Inan (2006), similarly, in his study on teachers views on ninth grade mathematics curriculum, which is revised according to constructivist learning principles, found that teachers with PhD degree have more positive views, followed by Teachers with Master’s and Bachelor’s degree respectively. However, these differences in views of teachers are not statistically significant. Beck, Czerniak, and Lumpe (2000), on the other hand, found that teachers with higher educational degrees have weaker beliefs regarding implementation of constructivism in their classrooms. Another study reporting lower attitudes towards constructivism is Özbay’s (2009) study.

For further research, experimental studies are recommended to understand the nature of the relationship between constructivist learning environments and deep learning approach. Such studies will widen the knowledge about the implementation of constructivist learning strategies effectively to achieve expected changes in the nature of students learning. This study also draws attention to an important aspect of the implementation of constructivism in classroom settings, which is, although teachers think they implement constructivist strategies effectively, the strategies they use cannot reach students effectively and remain inadequate for encouraging a change in their learning. To sum up, the change towards constructivist learning environments is still on a transition phase. To conclude this phase positively, it is important to evaluate the quality of learning environments through students’ learning. Further studies on different samples and employing qualitative methods will help to develop recommendations for teachers and educational managers by applying constructivist learning in classroom settings effectively.

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SELF – ASSESSMENT OF MIDDLE SCHOOL TEACHERS: CLASSROOM MANAGEMENT AND DISCIPLINE REFERRALS

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ABSTRACT

Classroom management takes account of students and their environment and is intended to increase student achievement by the process of planning, assessment, and evaluation. Reports have indicated that student disruptions may consume much of the instructional time on daily basis. The purpose of this quantitative study was to focus on classroom management self-assessment of middle school teachers and number of discipline referrals written in one academic school year in western part of the U.S. The participants of this study included 237 teachers including 79 teachers at grade 6, 79 teachers at grade 7, and 79 teachers at grade 8 levels. As data collection tool, a questionnaire called Self-Assessment - Classroom Management (SACM) was used and discipline referrals written in one academic school year were collected. The findings the study indicated that teachers, who are inadequate in classroom management, tend to have more disciplinary problems in their classrooms, thus writing more discipline referrals than those who are effective in classroom management.

Key Words: Classroom management, discipline referrals, middle school teachers.

INTRODUCTION

Teachers begin the school year by taking control and lay out their expectations for student behavior along with the consequences for those who continue to disrupt. Most students experience failure or frustration in school (Bluestein, 2000). Educators must employ effective classroom management strategies to minimize failures and frustration in their classrooms (Shawer, 2010). Research suggests that student achievement and the development of self-control are promoted by effective classroom management skills (Heit, Meeks, & Page, 2003). Walker, Colvin, and Ramsey (2004) indicated that effective classroom management is a fundamental component of the teaching-learning process, which promotes good behavior in students. When dealing with classroom management, educators have to be one step ahead of the situation (Wong & Wong, 2005).

Teachers, who fail to take some responsibility of thinking ahead, may fail to provide effective learning and control students' behavioral attitudes (Wong & Wong, 2005). According to research, classroom management is directly linked with academic achievement, teacher efficacy, and teacher, and student behavior (Froyen & Iverson, 1999). Teachers, who have confidence with their self-efficacy, may be effective in controlling negative student behaviors (Jolivette & Steed, 2010). Teachers, who feel inadequate in classroom management, may be ineffective in providing a disciplined classroom (Reupert & Woodcock, 2010).

Many higher institutions do not train prospective teachers on classroom management skills and strategies (Gelpi, 2008). When pre-service teachers do not receive enough training on classroom management strategies, teaching could become quite challenging, thus learning in such environment, in which students exhibit negative behaviors (Gordon, 2001). Due to the needs of society and the changing dynamics of the student population, teachers are coming out of school unprepared to take on the everyday challenges of our students (Samson, 2007; Sprick & Daniels, 2010). Although many higher institutions may not train pre-service teachers on classroom management, all teachers have an opportunity to self-assess themselves and reorganize their classroom management strategies for a more effective learning environment.
According to Amstutz (2005) “Discipline usually has several goals. Short term, discipline tends to stop a child’s inappropriate behavior while explaining what is appropriate. Long term, discipline aims to help them take responsibility for their own behavior”. As teachers continue working with their students in order to preserve the classroom environment, they are expected to overcome disruptions and not to allow such disruptions to take over the instructional time (Everton, 1994). Many teachers needing improvement utilizing discipline within their classrooms must effectively self-assess their classroom management skills and take precautions accordingly in order to eliminate disruptions (Ratcliff, Jones, Costner, Savage-Davis, & Hunt, 2010).

Classroom management refers to anything that would create effective student learning in the classroom (Wong & Wong, 2005). It takes account of students and their environment and is intended to increase student achievement by the process of planning, student engagement, assessment, and evaluation (Tal, 2010). Classroom management also has been seen as an example of positive behavioral support for students with discipline issues. Some schools take certain precautions to diminish discipline problems within their settings. They establish high expectations for both students and teachers. Some middle schools even provide formal trainings for teachers in behavior management. Such supports help teachers be prepared in every classroom and help guarantee student achievement (Wong & Wong, 2005). School communities need teachers with a better understanding of classroom management approaches so that they can have a positive effect on student achievement and minimize negative student behaviors (Justiz, 1984; Mahon, Bryant, Brown, & Kim, 2010; McLeod, Fisher, & Hoover, 2003). In addition, students could learn how to demonstrate positive attitudes by observing the positive behaviors and outcomes of the others around them (Todd, Campbell, Meyer, & Horner, 2008).

Classroom management is related to all of the things that teachers do to organize students, time, and materials so that student learning can be meaningful (Wong & Wong, 2005). Classroom management is an effective teaching strategy and a key concern of many teachers while providing important teaching approaches for students (Cothran, Kulinna, & Garrahy, 2009).

Researchers believe that teachers mainly face two critical issues in their teaching careers: classroom management and discipline (Bandura, 1997; Canter & Canter, 2001; Dreikurs & Cassel, 1991; Glasser, 1998; Ginott, 1972); Kounin, 1970; and Skinner, 1974). They created important models to help educators deal with disciplinary issues in proactive and systematic ways. Researchers realized that student disruptions may consume much of the instructional time on daily basis (Bluestein, 2000; Demirdag, 2015). A study showed that there is a difference in students’ achievement gains across teachers’ classrooms based on their effectiveness in classroom management (Kane, Taylor, Tyler, & Wooten, 2011). Another research indicated that classroom management is a critical competency area for all teachers as it is directly related to student achievement (Yilmaz, 2009).

Inexperienced teachers with inadequate classroom management skills may not be able to accomplish much in the classroom (Wong & Wong, 2005). Research suggests that classroom management should focus on the topics of caring and classroom diversity (Marks, 2010). There are certain characteristics that create a well-managed classroom. These characteristics include students who are deeply involved with their learning activities, especially with academic and teacher-led instructions and students who know what is expected of them. Effective classroom management enforces little wasted time, confusion, or disruption, and creates a classroom environment, which is work-oriented but relaxed and pleasant. Teachers must implement predictable and consistent classroom procedures and practices. These procedures have two ends: (a) fostering student engagement and cooperation in all classroom activities, and (b) creating a productive working environment.

Discipline referral is a written document utilized to report infractions that break school rules, and is a way to keep track of the discipline throughout the school. Teachers should complete the discipline referrals when the incident occurred, they should not wait too long after because then it would leave room for bias (Wright & Duesk, 1998). The information from discipline referrals can be compiled to allow educators to have an idea of all of the disruptive behaviors.
Teachers, who lack in classroom management skills, could have a questionable impact on student learning (Floden & Buchmann, 1993). They may have frequent problems with classroom control, and write a large number of disciplinary referrals (Bennett, 2009). Those problems may be associated with students’ noise and their disrespectful attitudes towards their friends and teachers (Kohn, 1998). Lack of skills in classroom management is one of the biggest challenges for teachers especially those who are new in teaching because organizing students’ behaviors is an important factor in the teacher’s classroom effectiveness and job satisfaction (Heit et al., 2003). In some cases, one-half of classroom time is taken up with controlling negative student attitudes other than instruction. The discipline problems are responsible for a significant portion of this lost instructional time (Cotton, 1990).

Recent incidents show that the desire for increased effectiveness in classroom management is the general societal concern that some students are becoming more aggressive and violent as evidenced by recent shootings on public school grounds (Greenberg, 2007). As a result, controlling maladaptive and counterproductive student attitudes becomes a critical aspect of the teaching endeavor (Inman & Marlow, 2004; Jolivette & Steed, 2010). Improving teacher effectiveness may help the student possibly achieve at a higher achievement level because less time would be spent on refocusing students due to classroom disruptions and time spent on writing more referrals.

The conceptual framework for this study was based on Marzano’s (2003) examination of teachers as classroom managers. In this framework, teachers use a questionnaire to self-assess their effectiveness for various indicators on a 0-3 rating Likert scale. The questionnaire has a 10-item construct including 34 questions. After self-assessing their effectiveness using these indicators, teachers will have an opportunity to reflect on their classroom management. In addition, they will have opportunity to generate new ideas in order to improve their teaching and classroom management skills. The teachers will be able to see how student’s achievement is impacted by the classroom management strategy utilized. If administered effectively, the appropriate classroom management strategy would help eliminate or decrease student disruptions within the classroom (Heit et al., 2003; Smart & Igo, 2010; Walker et al., 2004). As a result, this framework provides teachers with a comprehensive system for assessing, discussing, and refining their classroom practice.

Purpose
The purpose of this quantitative study was to investigate teachers’ perceptions of classroom management strategies and their impact on number of discipline referrals occurred in one academic school year. In line with this aim, the following research questions were studied:
1. What are the perceptions of middle school teachers about their own classroom management?
2. What is the relationship between middle school teachers ‘classroom management self-assessment and number of written discipline referrals?

METHOD

The study included non-random selection of participants. This quantitative methodology was used because the study measured facts and objectives (Taylor & Bogdan, 1984), such as classroom management self-assessment of teachers teaching different grade levels. This methodology offered many opportunities for the researcher to collect information through a questionnaire and document analyses that included discipline referral records for all grade levels in a middle school. The study employed statistical methods and included correlational or quasi-experimental designs to reduce the bias (Cronbach, 1975) and presented the outcomes objectively (Powdermaker, 1966).

This study, which evaluates the various perspectives on classroom management self-assessment of middle school teachers, took place in several middle schools in western part of the U.S.
Table 1: Percentages of Genders Participating in the Study

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>122</td>
<td>51.5</td>
<td>51.5</td>
</tr>
<tr>
<td>Male</td>
<td>115</td>
<td>48.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>237</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Setting
The quantitative study focused on classroom management self-assessment of teachers in 10 middle schools in western part of the U.S. The schools had a total enrollment of 10,145 students in grades 6th – 8th. The schools had a diverse student population including Hispanic students at 70%, African - American students at 15%, Caucasian students 10%, and the other students at 5%. About 80% of these students were economically disadvantaged and received free or reduced lunch.

Sample
Research sample included non-random selection of participants. The participants of the study included 79 teachers from grade 6, 79 teachers from grade 7, and 79 teachers from grade 8 level with a total of 237 teachers. Female participants were %51.5 and the male participants were %48.5 in the study (see Table 1). The instrument used in the study had 10 main items and each item included three to four questions. As a result, the instrument included a total of 34 questions. The questions included a 4-point Likert scale, with 0 indicating “not yet completed”, 1 indicating “some attempt to implement”, 2 indicating “implement but struggle with follow-through”, and 3 indicating “implement, follow-through, monitor, and improve”.

Instrument
This study included a questionnaire called Self-Assessment - Classroom Management (SACM). It was used to measure the classroom management self-assessment of middle school teachers. Quantitative data were collected and analyzed through the use of the questionnaire. The instrument was developed by Sugai (2008). The questionnaire was modified and pilot-tested with 18 middle school teachers to determine the readability and suitability for middle school students. The researcher calculated the coefficient alpha (Cronbach, 1951) to assess the reliability of the instrument with his sample. After the pilot testing, the researcher found that the survey was reliable, as the coefficient alpha was 0.76. In addition, the validity for the instrument was established through the normal occurrences of the studies conducted previously utilizing this particular instrument and reported by the authors of the instrument. Strategies such as member checking were used to ensure the validity of the study. The instrument included questions such as “maximize structure and predictability in the classroom”, “use a continuum of strategies to acknowledge expected behavior”, and “teach about responsibility and provide opportunities for students to contribute to the functioning of the classroom”.

Data Analysis
For the data collection, discipline referrals written by teachers and a questionnaire were used for all participants during the 2013-2014 academic school years. The researcher allowed participants about 45 minutes to answer all questions on the questionnaire. SPSS was used for descriptive and inferential statistical analysis. Upon the completion of data collection, the data set was imported into the SPSS software for further analysis. The data were analyzed on the basis of the arithmetic mean, standard deviation, one-way Anova, and Post Hoc tests.
Table 2: Graphical Representation from SPSS of the Classroom Discipline Referrals Written by Middle Schools Teachers

<table>
<thead>
<tr>
<th>Participants</th>
<th>Number of Referrals</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 6 Teachers</td>
<td>616</td>
<td>45.3</td>
<td>45.3</td>
</tr>
<tr>
<td>Grade 7 Teachers</td>
<td>341</td>
<td>25.1</td>
<td>70.4</td>
</tr>
<tr>
<td>Grade 8 Teachers</td>
<td>402</td>
<td>29.6</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>1359</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Teachers write discipline referrals when students exhibit non-compliant behaviors during the instructional time. In this research, number of discipline referrals written by teachers in different grade levels for one school year were collected. After the data were analyzed, the findings showed that grade 6 teachers (616 referrals) wrote more referrals compared to the teachers from grade 7 and grade 8 levels (see Table 2).

Table 3: Test of Homogeneity of Variances

<table>
<thead>
<tr>
<th>Variances</th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Maximize structure and predictability in the classroom</td>
<td>.93</td>
<td>2</td>
<td>234</td>
<td>.39</td>
</tr>
<tr>
<td>2-Establish, teach, and positively stated classroom expectations</td>
<td>.92</td>
<td>2</td>
<td>234</td>
<td>.39</td>
</tr>
<tr>
<td>3-Manage behavior through effective instructional delivery</td>
<td>2.44</td>
<td>2</td>
<td>234</td>
<td>.08</td>
</tr>
<tr>
<td>4-Actively engage students through use of varied instructional strategies</td>
<td>.40</td>
<td>2</td>
<td>234</td>
<td>.66</td>
</tr>
<tr>
<td>5-Evaluate Instruction</td>
<td>.58</td>
<td>2</td>
<td>234</td>
<td>.55</td>
</tr>
<tr>
<td>6-Maximize positive interactions</td>
<td>2.86</td>
<td>2</td>
<td>234</td>
<td>.05</td>
</tr>
<tr>
<td>7-Use a continuum of strategies to acknowledge expected behavior</td>
<td>.35</td>
<td>2</td>
<td>234</td>
<td>.70</td>
</tr>
<tr>
<td>8-Use a continuum of strategies to respond to rule violations</td>
<td>.65</td>
<td>2</td>
<td>234</td>
<td>.52</td>
</tr>
<tr>
<td>9-Develop caring and supportive relationships</td>
<td>2.42</td>
<td>2</td>
<td>234</td>
<td>.09</td>
</tr>
<tr>
<td>10-Teach about responsibility and provide opportunities for students to contribute to the functioning of the classroom</td>
<td>2.08</td>
<td>2</td>
<td>234</td>
<td>.12</td>
</tr>
</tbody>
</table>

The Levene's test for homogeneity was conducted to measure the differences in variances. This test was conducted to indicate whether the variables in the study were normally distributed and that the variances in the population were equal. In this test, if the significant value was greater than .05, then the researcher would assume that the variances in one condition did not vary too much more than the variances in the second condition and that the researcher had confidence in the validity of the results. Otherwise, the researcher would have to proceed with caution to analyze further data. In this case, all significant values were greater than .05 (see Table 3) and this situation indicated that the data were valid for the further analysis.

RESULTS

The findings of this quantitative study are presented according to the classroom management self-assessment of middle school teachers. Data were analyzed using descriptive and inferential statistics. First, ranges, standard deviations, and mean scores between groups were analyzed. Second, one-way Anova test was conducted to indicate significant differences between groups. Lastly, multiple comparisons were conducted by Post Hoc tests to determine significant differences between two groups.
Table 4: Comparison in Mean Scores among all Teachers on SACM

<table>
<thead>
<tr>
<th>Variances</th>
<th>6th Grade Teachers</th>
<th>7th Grade Teachers</th>
<th>8th Grade Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min-Max M SD</td>
<td>Min-Max M SD</td>
<td>Min-Max M SD</td>
</tr>
<tr>
<td>1-Maximize structure and predictability in the classroom</td>
<td>0-3 1.68 0.74</td>
<td>0-3 1.62 0.86</td>
<td>0-3 1.56 0.75</td>
</tr>
<tr>
<td>2-Establish, teach, and positively stated classroom expectations</td>
<td>.25-3 1.57 0.6</td>
<td>.25-3 1.71 0.65</td>
<td>0-3 1.74 0.7</td>
</tr>
<tr>
<td>3-Manage behavior through effective instructional delivery</td>
<td>.25-3 1.73 0.58</td>
<td>.25-3 1.76 0.66</td>
<td>0-3 1.63 0.71</td>
</tr>
<tr>
<td>4-Actively engage students through use of varied instructional strategies</td>
<td>.33-3 1.71 0.79</td>
<td>0-3 2.03 0.78</td>
<td>0-3 1.69 0.85</td>
</tr>
<tr>
<td>5-Evaluate Instruction</td>
<td>.33-3 1.97 0.72</td>
<td>.33-3 1.68 0.77</td>
<td>0-3 1.72 0.81</td>
</tr>
<tr>
<td>6-Maximize positive interactions</td>
<td>.33-3 1.80 0.86</td>
<td>.33-3 1.71 0.72</td>
<td>0-3 1.74 0.73</td>
</tr>
<tr>
<td>7-Use a continuum of strategies to acknowledge expected behavior</td>
<td>.33-3 1.97 0.74</td>
<td>.33-3 1.68 0.77</td>
<td>0-3 1.72 0.81</td>
</tr>
<tr>
<td>8-Use a continuum of strategies to respond to rule violations</td>
<td>0-3 1.96 0.75</td>
<td>0-3 1.74 0.77</td>
<td>.33-3 1.91 0.68</td>
</tr>
<tr>
<td>9-Develop caring and supportive relationships</td>
<td>.25-3 1.54 0.61</td>
<td>.25-3 1.83 0.74</td>
<td>0-3 1.84 0.75</td>
</tr>
<tr>
<td>10-Teach about responsibility and provide opportunities for students to contribute to the functioning of the classroom</td>
<td>0-3 1.79 0.71</td>
<td>.25-3 1.84 0.67</td>
<td>.25-3 1.84 0.77</td>
</tr>
</tbody>
</table>

Note. SACM = Self – Assessment Classroom Management.

When 10 items of SACM survey were analyzed, middle school teachers scored different mean scores on each item (see Table 4). After the comparison between mean scores on item 1, grade 6 teachers scored higher ($M = 1.68, SD = .74$) than grade 7 ($M = 1.62, SD = .86$) and grade 8 ($M = 1.56, SD = .75$) teachers. On item 2, grade 6 teachers scored lower ($M = 1.57, SD = .6$) than grade 7 ($M = 1.71, SD = .65$) and grade 8 ($M = 1.74, SD = .7$) teachers. On item 3, grade 6 teachers scored lower ($M = 1.73, SD = .58$) than grade 7 ($M = 1.76, SD = .66$) and higher than grade 8 ($M = 1.63, SD = .71$) teachers. Grade 6 teachers scored lower ($M = 1.71, SD = .79$) than grade 7 ($M = 2.03, SD = .78$) and higher than grade 8 ($M = 1.69, SD = .85$) teachers on item 4. Grade 6 teachers scored higher ($M = 1.9, SD = .72$) than grade 7 ($M = 1.85, SD = .79$) and grade 8 ($M = 1.84, SD = .81$) teachers on item 5. Similarly, grade 6 teachers scored higher ($M = 1.8, SD = .86$) than grade 7 ($M = 1.71, SD = .72$) and grade 8 ($M = 1.74, SD = .73$) teachers on item 6. On item 7, grade 6 teachers scored higher ($M = 1.97, SD = .74$) than grade 7 ($M = 1.68, SD = .77$) and grade 8 ($M = 1.72, SD = .81$) teachers. Grade 6 teachers scored higher ($M = 1.96, SD = .75$) than grade 7 ($M = 1.74, SD = .77$) and grade 8 ($M = 1.91, SD = .68$) teachers. On item 9, grade 6 teachers scored lower ($M = 1.54, SD = .61$) than grade 7 ($M = 1.83, SD = .74$) and grade 8 ($M = 1.84, SD = .75$) teachers. Lastly, grade 6 teachers scored lower ($M = 1.79, SD = .71$) than grade 7 ($M = 1.84, SD = .67$) and grade 8 ($M = 1.84, SD = .77$) teachers on item 10.
Table 5: One-way Anova Test Results between Groups

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Maximize structure and predictability in the classroom</td>
<td>.29</td>
<td>.48</td>
<td>.61</td>
</tr>
<tr>
<td>2-Establish, teach, and positively stated classroom expectations</td>
<td>.66</td>
<td>1.55</td>
<td>.21</td>
</tr>
<tr>
<td>3-Manage behavior through effective instructional delivery</td>
<td>.38</td>
<td>.91</td>
<td>.40</td>
</tr>
<tr>
<td>4-Actively engage students through use of varied instructional strategies</td>
<td>2.89</td>
<td>4.38</td>
<td>.01</td>
</tr>
<tr>
<td>5-Evaluate Instruction</td>
<td>.08</td>
<td>.14</td>
<td>.86</td>
</tr>
<tr>
<td>6-Maximize positive interactions</td>
<td>.16</td>
<td>.27</td>
<td>.76</td>
</tr>
<tr>
<td>7-Use a continuum of strategies to acknowledge expected behavior</td>
<td>2.06</td>
<td>3.44</td>
<td>.03</td>
</tr>
<tr>
<td>8-Use a continuum of strategies to respond to rule violations</td>
<td>1.13</td>
<td>2.07</td>
<td>.12</td>
</tr>
<tr>
<td>9-Develop caring and supportive relationships</td>
<td>2.38</td>
<td>4.83</td>
<td>.01</td>
</tr>
<tr>
<td>10-Teach about responsibility and provide opportunities for students to contribute to the functioning of the classroom</td>
<td>.05</td>
<td>.11</td>
<td>.89</td>
</tr>
</tbody>
</table>

Data analysis from Anova tests showed that there were significant differences on mean scores between middle school teachers on item 4 with conditions $F(2, 234) = 4.38, p = .01, \eta^2 = 2.89$, item 7 with conditions $F(2, 234) = 3.44, p = .03, \eta^2 = 2.06$, and item 9 with conditions $F(2, 234) = 4.83, p = .01, \eta^2 = 2.38$. On the other hand, the data results showed non-significant differences on mean scores between groups on item 1 with conditions $F(2, 234) = .48, p = .61, \eta^2 = .29$, item 2 with conditions $F(2, 234) = 1.55, p = .21, \eta^2 = .66$, item 3 with conditions $F(2, 234) = .91, p = .4, \eta^2 = .38$, item 5 with conditions $F(2, 234) = .14, p = .86, \eta^2 = .08$, item 6 with conditions $F(2, 234) = .27, p = .76, \eta^2 = .16$, item 8 with conditions $F(2, 234) = 2.07, p = .12, \eta^2 = 1.13$, and item 10 with conditions $F(2, 234) = .11, p = .89, \eta^2 = .05$.

Table 6: Multiple Comparisons from Post Hoc Test Results.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Actively engage students through use of varied instructional strategies</td>
<td></td>
<td></td>
<td>.03</td>
</tr>
<tr>
<td>7th Grade Teacher</td>
<td>6th Grade Teacher</td>
<td>.32*</td>
<td>.12</td>
</tr>
<tr>
<td>8th Grade Teacher</td>
<td>.33*</td>
<td>.12</td>
<td>.02</td>
</tr>
<tr>
<td>7-Use a continuum of strategies to acknowledge expected behavior</td>
<td></td>
<td></td>
<td>.04</td>
</tr>
<tr>
<td>6th Grade Teacher</td>
<td>7th Grade Teacher</td>
<td>.29*</td>
<td>.12</td>
</tr>
<tr>
<td>9-Develop caring and supportive relationships</td>
<td></td>
<td></td>
<td>.02</td>
</tr>
<tr>
<td>7th Grade Teacher</td>
<td>6th Grade Teacher</td>
<td>.29*</td>
<td>.11</td>
</tr>
<tr>
<td>8th Grade Teacher</td>
<td>.31*</td>
<td>.11</td>
<td>.01</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

After data were analyzed from Anova tests, it was crucial to determine the meaningful differences between each grade level. The significant mean scores between groups resulted on item 4: Actively engage students through use of varied instructional strategies, item 7: Use a continuum of strategies to acknowledge expected behavior, and item 9: Develop caring and supportive relationships. Therefore, Post Hoc tests were conducted and revealed how each grade level teachers differed from one another on mean scores (see Table 6). Grade 7 teachers scored significantly higher than grade 6 teachers ($p = .03$) and grade 8 teachers ($p = .02$) on item 4. On
item 7, grade 6 teachers scored significantly higher than grade 7 teachers \((p = .04)\). Finally, both grade 7 teachers \((p = .02)\) and grade 8 teachers \((p = .01)\) scored significantly higher than grade 6 teachers on item 9.

**DISCUSSION AND CONCLUSION**

The purpose of this study was to investigate the perception of teachers on their classroom management skills and how such strategies impact student attitudes. Middle school teachers from grade 6, grade 7, and grade 8 answered 34 questions on a questionnaire. In addition, discipline referrals written by these teachers were analyzed. SPSS analysis indicated significantly different indicators on several items. Based on research results, teachers who lack classroom management skills had more discipline referrals than teachers with less deficiency in classroom management skills (Bandura, 1997; Canter & Canter, 2001; Floden & Buchmann, 1993).

Classroom management skills require teachers to take effective measures in eliminating negative student behaviors and provide active learning. Teachers with strong classroom management skills can successfully establish expectations for students’ attitudes in order to lower number of discipline referrals (Wong & Wong, 2005). They would be able to promote student learning and develop self-control among all students to minimize students’ negative behaviors (Heit et al., 2003). Students engaging in learning activities would not exhibit any behavioral problems towards their peers or teachers (Canter & Canter, 2001).

Some findings in this study indicated consistency with those of research aimed at testing teachers’ classroom management self-assessment and number of discipline referrals. Effective classroom management skills not only utilize effective learning environment, it promotes positive student behavior and lower number of discipline referrals (Walker et al., 2004). In parallel research findings, Froyen and Iverson (1999) found that classroom management is directly linked to classroom environments in which students’ behavioral problems are controlled and higher learning expectations are established. Moreover, in their research, Reupert and Woodcock (2010) suggested that teachers, who are ineffective in classroom management, would have to spend most of the instructional time on controlling students’ behaviors and write more discipline referrals. However, in this study, data analysis from some middle school teachers indicated conflicting results compared to those previously found ones. For example, although grade 6 teachers scored significantly higher mean scores on item 7 compared to other grade level teachers, they experienced the most number of non-complaint student behaviors resulting in higher volumes of discipline referrals. Therefore, it is passable to suggest that middle school teachers have different perceptions about their own classroom management assessment whereas it is difficult to suggest whether there is a relationship between middle school teachers'classroom management self-assessment and number of written discipline referrals.

This study has important limitations that must be considered if the findings are to be adequately interpreted. First, the data were obtained from a convenience sample; such non-random selection of participants is a frequent limitation in school-based studies (Hedges & Hedberg, 2007). Second, the small sample size may not be generalized to the entire population of teachers and students in the state or the nation. Finally, possible researcher bias, due to the researcher being the sole person responsible for data collection and analysis (Merriam, 2009). To minimize researcher biases and to strengthen the case study design, strategies were used to enhance the reliability and validity of this study, as well as adherence to protocols of data collection and analysis.

**CONCLUSION**

When dealing with classroom management, educators will need to be one step ahead of the situation. Classroom management is related to all of the things that teachers do to organize students, settings, time, and materials so that student learning can be effective and meaningful. School communities need teachers with a better understanding of classroom management approaches. Schools should provide training and professional development on classroom management strategies for all teachers so that they can be efficient utilizing classroom management approaches and be able to control students’ discipline problems. Otherwise, teachers, who are inadequate in classroom management, may be least effective in teaching and end up using most of the
crucial instructional time on discipline problems. Finally, implications for positive social change are that schools could institute staff development concerning types of effective classroom management strategies, which could be utilized to reduce students’ noncompliant behaviors that may prevent a successful learning environment.

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**References**


SEMI-STRUCTURED PROBLEM POSING CASES OF PROSPECTIVE MATHEMATICS TEACHERS: EXPERIENCES AND SUGGESTIONS

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ABSTRACT

Problem posing which a way of analytical thinking is a process which is based on mathematical experiences and in which interpretations which are created by moving from concrete situations are transformed into meaningful mathematical problems. Problem posing which helps teachers about to what extent the learning is realized informs us about the problematic fields that needed to be improved and emphasized in teaching-learning environments. For this reason, it is necessary for teachers to have a deep understanding about problem posing activities.

In this sense, the aim of this study is to evaluate semi-structured problem posing cases of prospective mathematics teachers about Ratio and Proportion Subject’, to determine the experiences of the prospective teachers during problem posing process and to elicit suggestions regarding the experienced difficulties (if any). For this purpose a data collection form was created by the researchers. This data collection form has three parts which were i) The task of posing semi-structured problems, ii) The experiences during problem posing process (for example; the difficulties faced) and iii) Suggestions for solutions.

The data collection form was carried out with 59 prospective primary mathematics teachers. The prospective teachers were given 40 minutes to fill in this form. ‘Problem Posing Evaluation Form (PPEF)’ which was developed by the researchers was used during the analysis of the data obtained from first part of the data collection form. This evaluation form is consisted of four main dimensions and three sub-dimensions for each dimension. The main dimensions are as in the following: i) Problem text (language and expression), ii) The compatibility of the problem with the mathematical principles, iii) The type/structure of the problem and iv) The solvability of the problem. The first part data was evaluated with this evaluation form by the researchers separately and then the results were compared. The differences appeared were discussed and an agreement was reached between the researchers. At the end the evaluation results created regarding the each sub-dimension were given on the basis of frequency (f) and percentage (%). Content analysis was used for the analysis of the data obtained from the second and third parts of the form, and the program which is called as NVivo 10 was used in content analysis.

In conclusion, it was concluded that prospective mathematics teachers posed clear and understandable problems which were compatible with the mathematical principles and which were in the form of simple and easy problem types. Besides, it was concluded that posed problems had solvable problem features. The experiences/difficulties faced during problem posing process determined as; inability to construct the problem, finding the data as insufficient, inability to pose creative problems, in ability to provide a whole number for the solution and inability to arrange the level of problem according to the levels of the students. The solutions which were proposed for the difficulties faced were determined as in the following; no data limitation, carrying out problem solving and problem posing studies, having a sound content knowledge and using additional sources.

Key Words: Semi-structured problem posing, experiences, solutions.
INTRODUCTION

The study of mathematics is, if an unprofitable, a perfectly harmless and innocent occupation!...

Godfrey Harold Hardy (1877-1947)

Problem posing which has not been fully understood yet and which is a complex learning activity (Christou, Mousoulides, Pittalis, Pitta-Pantazi & Sriraman, 2005; Crespo & Sinclair, 2008; English, 2003; Mamona-Downs & Downs, 2005) is stated as the focal point of teaching mathematics (English, 1997; Silver & Cai, 1996). It includes re-formulating a given problem and/or creating new problems in accordance with the given situation (Mestre, 2002). Besides, problem posing which is a way of analytical thinking (Akay & Boz, 2010) and which includes for learners to produce new thoughts by using different ways (Kojima, Miwa & Matsui, 2009) is a process which is based on mathematical experiences and in which interpretations which are created by moving from concrete situations are transformed into meaningful mathematical problems (Stoyanova & Ellerton, 1996).

In this so called process, students face with a complicated situation or event and they feel personally responsible from this situation or event (Gür & Korkmaz, 2003). In this way, problem posing in addition to helping students’ individual learning (İşik, Kar, Yağcı & Zehir, 2011) provides critical perspectives for them to understand mathematical concepts and processes (Van den Heuvel Panhuizen, Middleton & Streefland, 1995). Besides, in addition to helping teachers about to what extent the learning is realized, problem posing informs us about the problematic fields that needed to be improved and emphasized in teaching-learning environments (Lin & Leng, 2008). For this reason, it is expected that teachers need to have a deep understanding about problem posing activities. In this sense, the aim of this study is to evaluate semi-structured problem posing cases of prospective mathematics teachers, to determine the experiences of the prospective teachers during problem posing process and to elicit suggestions regarding the experienced difficulties (if any).

When related literature was analyzed within the scope of this purpose, it was seen that there are various problem posing methods (Abu-Elwan, 2007; Dickerson, 1999; Grundmeier, 2003). These methods are as follows; ‘free problem posing’, ‘semi-structured problem posing’, ‘structured problem posing’ (Stoyanova, 2003) and iv) ‘what if?...what if not?’ (Abu-Elwan, 2007).

In free problem posing process, students are given a situation or subject from daily life. Students are expected to produce a problem by using them (Akay, 2006). In addition to that it is the case of asking students to pose problems about any subject without providing them any data, figure or problems (Ergün, 2010). ‘Pose/write a problem about Numbers subject by using your existing knowledge’ can be given as an example for this method. In semi-structured problem posing method, an open-ended situation is given to students. Students are asked to generate problems about this situation by using their own skills, knowledge and mathematical experiences (Akay, 2006). For example, Christou, Mousoulides, Pittalis, Pitta-Pantazi and Sriraman (2005) gave figures and tables as a problem posing task in their studies to students and they were asked from students to pose problems by using the information stated in those figures and tables. Grundmeier (2003) gave students a story as a problem solving task in his study and asked from students to pose problems by using this story.

In structured problem posing, the matter is posing a new problem by changing the known (Akay, 2006). It is stated that ‘what if?...what if not?’ method is deal within the scope of structured problem posing method (Brown & Walter, 1993). In this sense, it was seen that there are little differences between the implementations of these two methods.

In the analysis of literature regarding problem posing, it was determined that semi-structured problem posing method was in the centre of interest among researchers and they were focused on ‘Fractions’ subjects (Bunar, 2011; İşik, 2011; İşik & Kar, 2012a; İşik & Kar, 2012b; Kar & İşik, 2013). In this regard, it was seen as necessary to carry out this study by moving from the thought that it can contribute to literature since there are not enough studies about ‘Ration and Proportion’ subject in accordance with the specified method. Therefore the answers
of the following research questions were searched by considering the specified purpose, subject and the points highlighted in the literature.

1. What is the level of semi-structured problem posing skills of prospective teachers?
2. What are the experiences that prospective mathematics teachers face during posing semi-structured problems process (for example the difficulties that they faced)?
3. What are the solutions related with the difficulties that prospective mathematics teachers face (if any)?

**METHOD**

**The Research Design**
The qualitative researches are the studies where perceptions and events are demonstrated in a holistic and realistic manner in a natural environment (Yıldırım & Şimşek, 2008). In this sense, this study is a qualitative research which is aimed to demonstrate results regarding a particular situation. The document analysis which includes the analysis of written documents about the case or cases which are intended to study (Yıldırım & Şimşek, 2008) was carried out within the scope of this study.

**Study Group**
The work group of this study is consisted of 59 prospective sophomore students who are studying in Marmara University, Teaching Primary School Mathematics. 41 of the prospective teachers are female (69,49%) and 18 (30,51%) of them are male.

**Data Collection Tools and Data Collection**
The data was collected through a ‘data form’ which was prepared by the researchers. This data form is composed of three parts and these parts are as in follows: i) The task of posing semi-structured problems, ii) the experiences during problem posing process (for example; the difficulties faced) and iii) Suggestions for solution strategies. The data form stated above was given in Table 1.

**Table 1: The Data Form**

<table>
<thead>
<tr>
<th>About ‘Ratio and Proportion’ Subject;</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Pose and solve a problem about direct or inverse proportion by using the following expressions “2, master, apprentice, 12, 6, time” as much as you want.</td>
</tr>
<tr>
<td>ii. Please write your experiences that you had (for example; what kind of difficulties do you have?) during problem posing.</td>
</tr>
<tr>
<td>iii. What are your suggestions for the solutions regarding the problems that you faced during problem posing process (If any)?</td>
</tr>
</tbody>
</table>

This data form which was prepared by the researchers was distributed to prospective teachers. The prospective teachers were asked to fill in this form and given 40 minutes for filling the form. In conclusion, the documents of the study were composed of all this collected data was and they were used in document analysis.

**Data Analysis**
First of all, the data obtained from the first part of the data form was evaluated by the researchers separately. As a result of this analysis it was determined that all the posed semi-structured problems were about ‘Ratio and Proportion’ subject. For instance;
Figure 1: Semi-Structured Problem Posing Task of Prospective Teacher with Number 16

A master is finishing a construction in 6 days and an apprentice is finishing the same construction in 12 days. How many days do 1 master and 2 apprentices need to finish the same construction?

Figure 2: Semi-Structured Problem Posing Task of Prospective Teacher with Number 46

A task is completed by a master in 6 days and in 12 days by his apprentice. What proportion of the task will be finished if they work together?

These 59 posed problems from the first part were evaluated by using ‘Problem Posing Evaluation Form (PPEF)’ which was developed by the researchers (Şengül & Katrancı, 2014a). This evaluation form consists of four dimensions and each dimension consists of three sub-dimensions. It was decided that the agreement percentage regarding the compatibility of each dimension for evaluation changed between 0.89 and 0.92 and the agreement percentage regarding the compatibility of the sub-dimensions to dimensions changed between 0.86 and 0.90. 59 problems which were created in a semi-structured method were evaluated by the researchers separately with this evaluation form. The results were compared and then the differences appeared were discussed, finally the researchers reached an agreement about the differences. In conclusion, the results of the evaluation which was conducted as being related with each sub-dimension were presented on the basis of frequency (f) and percentage (%).

Content analysis was used in the analysis of the data regarding the second and third part of the data form. In content analysis similar data is combined around particular concepts and themes and they are edited and interpreted as readers can understand (Yıldırım & Şimşek, 2008). In this sense, first of all the data was coded. At this phase by analyzing the collected data the researcher tries to divide the data into meaningful parts and to find what each part means conceptually (Yıldırım & Şimşek, 2008). For this reason, a code list was created by reading the data by the researchers separately more than once. The codes were compared and then discussion was made on different codes. In content analysis, it is necessary to find themes which can generally explain the data by considering the codes appeared. (Yıldırım & Şimşek, 2008). In this regard, researchers secondly created themes separately by gathering similar codes together. The level of agreement between researchers was set by using the formula as “Agreement Percentage = [Agreement / (Agreement + Disagreement)] x 100” (Miles & Huberman 1994). In this regard, it was decided that the agreement percentage of the researchers regarding the themes changed between 0.90 and 0.92. After calculating the agreement percentages, themes were organized and presented to readers. For the interpretation of the findings, the themes were presented on the basis of frequency (f) and percentage (%) by digitalizing the data. The qualitative data was digitalized to enable to repeat a small scale research or case study with a bigger sample later on by using instruments such as surveys (Yıldırım & Şimşek, 2008). NVivo 10 program was used in content analysis.
FINDINGS AND COMMENTS

Findings and comments regarding the research problem which was specified as “What is the level of semi-structured problem posing skills of prospective mathematics teachers?” are as in the following.

Table 2: The Evaluation of the Tasks of Posing Semi-Structured Problems

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Text (Language and Expression)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The text of the problem is not clear and understandable.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The text of the problem is relatively clear and understandable.</td>
<td>17</td>
<td>28.81</td>
</tr>
<tr>
<td>The text of the problem is clear and understandable.</td>
<td>42</td>
<td>71.19</td>
</tr>
<tr>
<td>The Compatibility of the Problem with the Mathematical Principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The problem is not suitable to mathematical principles.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The problem is relatively suitable to mathematical principles.</td>
<td>9</td>
<td>15.25</td>
</tr>
<tr>
<td>The problem is suitable to mathematical principles.</td>
<td>50</td>
<td>84.75</td>
</tr>
<tr>
<td>The Type/Structure of the Problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise.</td>
<td>28</td>
<td>47.46</td>
</tr>
<tr>
<td>Easy Problem.</td>
<td>30</td>
<td>50.85</td>
</tr>
<tr>
<td>Difficult problem.</td>
<td>01</td>
<td>1.69</td>
</tr>
<tr>
<td>The Solvability of the Problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The problem cannot be solved.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Problem can be solved but it is erroneous.</td>
<td>01</td>
<td>1.69</td>
</tr>
<tr>
<td>It can be solved.</td>
<td>58</td>
<td>98.31</td>
</tr>
</tbody>
</table>

When Table 2 was analyzed, it was seen that 42 (71.19%) of the problem texts were clear and understandable and 17 (28.81%) of them were relatively clear and understandable. It was determined that 9 (15.25%) of the posed problems were relatively suitable to mathematical principles and 50 (84.75%) of them were suitable to mathematical principles. It was appeared that 28 (47.46%) of the posed problems were exercise type problems, 30 (50.85%) of them were easy problems and 1 (1.69%) of them was a difficult problem. According to Table 2, there were not any problems which did not have any solution. It was understood that 1 (1.69%) of the posed problems was solvable but there were mistakes at the solution. It is seen that 58 (98.31%) of the problems are solvable problems. For instance;

New buildings are being constructed in Fikirtepe under the name of urban transformation. A building is to be constructed on Bahth Street. For this construction, we have 1 master worker and 1 apprentice worker. A master worker constructs 1 flat in a month on his own and an apprentice worker constructs it in 12 months. If they work together, when will they finish the construction?

Figure 3: Semi-Structured Problem Posing Task of Prospective Teacher with Number 6
Findings and comments regarding the research problem which was specified as “What are the experiences that prospective mathematics teachers have during posing semi-structured problems process (for example the difficulties that they faced)?” are as in the following;

As a result of the analysis, it was determined that prospective teachers mostly focused on points that they had difficulties regarding the experiences in this process. In this sense, when Figure 5 is analyzed, it is seen that 18 (30,51%) of the prospective teachers stated that they did not face with any kind of difficulty during semi-structured problem posing process. It was determined that 18 (30,51%) of the prospective teachers stated their opinions about ‘editing’ theme. In this regard, it was appeared that prospective teachers could not construct the problem. It was also understood that they had difficulties in deciding about the kind of the problem that they need to construct and they stated that they had difficulties in constructing the problem with given statements. For instance;

Figure 4: Semi-Structured Problem Posing Task of Prospective Teacher with Number 35

Figure 5: The Experiences in the Process of Posing Semi-Structured Problems

Problem:
Two master workers completes a task in 6 days, an apprentice workers can do the same job in 12 days. In how many days will 3 master works and 2 apprentice works do the same job?
When Figure 5 is analyzed, it is seen that 13 (22.03%) of the prospective teachers stated their opinions about ‘data’ theme. In this regard, it was determined that prospective teachers found the data which was provided for posing problems as insufficient. For this reason, it was determined that they stated that they had difficulties in posing problems. For instance;

In using data, I had difficulties in posing problems. The data was insufficient.

Besides, it was appeared that 4 (6.78%) of the prospective teachers were stated their opinions about ‘creativity’ theme, 4 (6.78%) of them stated about ‘integer’ and 2 (3.39%) of them about ‘the level of students’. In this regard, it was concluded that prospective teachers thought that their problems were not creative, they were not able to conclude the result with a integer and they had hesitations whether the level of the problems were suitable to students’ levels or not. For instance;
Findings and comments regarding the research problem which was specified as “What are the solutions related with difficulties that prospective teachers face (if any)?” are as in the following.

When figure 10 is analyzed, it is seen that prospective teachers proposed solutions about five different themes. It was determined that 17 (28.81%) of the prospective teachers did not propose any solutions about the difficulties. 18 (30.51%) of the prospective teachers proposed solutions about ‘data’ theme. In this regard, it was determined that prospective teachers found the given data insufficient so they proposed a solution in accordance with the necessity to provide more data. For instance;

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Figure 9: The Experiences of Prospective Teacher with Number 20 in the Process Posing Semi-Structured Problems

While writing a question, I tried to avoid misusing numbers but anyway there was the possibility of posing a problem with an incorrect result. I have concerns about whether the student would understand the question or not. In solution process, I cannot think simple; it appears as if I cannot descend to the levels of the students. I have a lot of difficulties because of this.
It was determined that the other proposed solution for the difficulties faced in posing semi-structured problems is the theme of ‘problem posing’. In this sense, it was appeared that prospective teachers proposed to carry out problem posing studies for overcoming the stated difficulties. It is seen that the other proposed solution is the theme of ‘problem solving’. In this regard, it was determined that prospective teachers stated their opinions in favour of carrying out problem solving studies for overcoming the stated difficulties. For instance;

Figure 11: The solution of the Prospective Teacher with Number 8

Figure 12: The solution of the Prospective Teacher with Number 16

Figure 13: The Solutions of the Prospective Teacher with Number 33

It was determined that another solution which was propped by the prospective teachers is related with the theme of ‘sources’ and the other one is related with the theme of ‘content knowledge’. In this regard, it was seen that prospective teachers stated their opinions about using different sources in the process of posing problems and the necessity of having a sound content knowledge for posing problems. For instance;
CONCLUSION, DISCUSSION AND SUGGESTIONS

The purpose of this study is to evaluate prospective teachers’ levels in posing semi-structured problems about the subject of ‘Ratio and Proportion’. As a result of the analysis in accordance with this purpose, it is concluded that the texts of the problems which were posed by prospective teachers are clear and understandable. While it was determined that the problems are suitable to mathematical rules and principles, it was appeared that all the problems are solvable problems. Besides, it was concluded that the posed problems are in the type of easy problems. It was also determined that the problem texts of the prospective teachers were clear and understandable in the study which Şengül and Katrancı (2014b) analyzed the free problem posing levels of the prospective teachers. It was appeared that problems were suitable to mathematical principles and solvable problems. In this regard, it can be said that the problems within the scope of the same subject posed by prospective teachers have same features both in free problem posing and semi-structured problem posing methods. It was found out that prospective teachers posed exercise type problems in free problem posing studies (Şengül & Katrancı, 2014b). In this sense, it can be said that that these two studies have differences. It is thought for the reason of this situation that in free problem posing method students are not provided any kind of data. At this point, it is suggested to focus on this situation and to search the reasons in the future studies.

The other purpose of the study is to determine the experiences of prospective teachers in semi-structured problem posing process. At this point, it was concluded that prospective teachers mainly expressed their experiences mostly by focusing on the points that they have difficulties. In this sense, it was found out that prospective teachers have difficulties in five different themes. These themes are appeared as; “editing”, “data”, “creativity”, “integer” and “the level of students”. The difficulties faced in this process are appeared as; the inability to construct the problem, finding the data as insufficient, the inability to pose creative problems, in ability to provide a whole number for the solution and the inability to arrange the level of the problem. While Şengül and Katrancı (2014b) found the difficulties faced by the prospective teachers as; the lack of experience, the lack of the content knowledge, not recognizing the cognitive levels of students, the lack of curriculum knowledge and the difficulties in writing problem texts, Akay and Boz (2009) were determined the faced
difficulties as; not being creative, being shy, not feeling confident, the lack of mathematical knowledge, the fact that problem posing activities are different approaches and the nature of posing problems. Although it is determined in the studies which were carried out before that the difficulties faced by the prospective teachers have parallel features, it is obvious that they have difficulties in posing problems. Besides, it is expressed that posing different problems is related with the creativity (Fetterly, 2010; Silver & Cai, 2005; Yuan & Sriraman, 2010). At this point, the expression of prospective teachers about having difficulties in ‘creativity’ subject can be interpreted as they recognized the correlation between problem posing and creativity. In this sense, it is suggested to provide opportunities for prospective teachers to pose creative problems.

Yet another purpose of this study is to set for the solutions proposed by the prospective teachers for the difficulties (if any) that they faced in the process of posing problems. As a result of the analysis carried out within the scope of this purpose, it was determined that the solutions for the stated difficulties were expressed in five different themes. The themes regarded the proposed solutions were appeared as; “data”, “problem posing”, “solving problems”, “source” and “content knowledge”. In this regard, the proposed solutions were appeared as; not limiting the data, carrying out problem posing and problem solving studies, having a sound content knowledge and using additional sources. Şengül and Katrancı (2014b) determined the proposed solutions in their studies as; emphasizing problem solving and problem posing studies, the in depth analysis of the curriculum, teaching special teaching methods in detail and resorting to resources during problem posing process. It can be said that these two studies have parallel outcomes in terms of focusing problem solving and problem posing activities and the necessity for consulting resources. In this regard, it suggested that problem posing studies about different mathematics subjects should be carried out with prospective teachers. Işık and Kar (2012b) stated the necessity that prospective teachers should be allowed to have opportunities to pose their own problems. Thus, they expressed their thoughts that prospective teachers could improve their own skills regarding posing problems. Besides it was found by Stickles (2006) that teachers and prospective teachers made an effort to pose their own problems. At this point, it is suggested to provide opportunities for the prospective teachers to pose problems their own problems. It is thought that this can be ensured with the help of elective lessons in education faculties.

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INVESTIGATING THE PSYCHOLOGICAL WELL-BEING AND SOCIAL GENERATIVITY LEVELS OF INDIVIDUALS IN THE MIDDLE ADULTHOOD PERIOD DEPENDING ON DIFFERENT VARIABLES

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ABSTRACT

Individuals in the middle adulthood period might encounter many personal, social, professional and economic problems as they do in other developmental periods. The important point in this case is the ability of the individuals to create alternative solutions to deal with these problems and use their social generativity effectively without depriving themselves of their general psychological well-being. The aim of this study is to investigate the psychological well-being and social generativity levels of 40-60-year-old individuals in the middle adulthood period depending on different variables and to shed lights on similar further studies. The participants of the study are 151 40-60-year-old individuals with different socio-economic levels in different cities. In this study based on a descriptive research model, the Short form of the Scales of Psychological Well-being and the Loyala Generativity Scale were used as data collection instruments. As a result of the regression analysis, it was realized that the psychological well-being variable predicts social generativity. In addition, it was found that while the psychological well-being and the social generativity scales do not differ significantly depending on the gender variable, both of these scales differ significantly depending on their educational background and whether they work or not. Furthermore, while psychological well-being differ significantly depending on socio-economic level, social generativity doesn’t.

Key Word: Psychological well-being, social generativity, middle adulthood.

INTRODUCTION

As in other psychosocial developmental periods, the middle adulthood is one of the life periods that should be adapted and dealt with wholesomely by individuals. Within the natural process of life-long development, individuals continue to develop in this period as they do in the earlier childhood and adolescence periods (Karacan, 2007). Individuals in the middle adulthood period might come across many personal, social, professional and economic problems. In addition to these, the age norms determined by the culture individuals live in and the responsibilities as well as the roles arising from these norms come into play during this period (Uçanok, 2001). Besides, individuals in the process of emotional change and development strive to reach a
specific level of competence during this period. They are also able to make new choices related to many issues in their personal, family and social life, gain experiences and discover things that have not been experienced beforehand. Towards the end of this period, on the other hand, individuals are inclined to achieve the goals they have wished for and wanted to reach (Ültanır and Ültanır, 2006 cited in Yazar, 2012).

Erik Erikson (1963) regards development as a process covering the whole life of the individual and defines the common characteristics of the period following the adolescence. The seventh phase overlapping with the middle adulthood period was defined by a period of “generativity vs. stagnation”. If the individuals have successfully overcome the earlier phases in their lives, they can be productive, efficient and creative during this period. In this period, generativity refers to fertility, producing something and creativity. Self-development, producing something new, uncovering new ideas and leading to new generations are considered to be within the scope of generativity. Therefore, it is important to provide counseling to these individuals with regard to the continuation of their generation by means of having children and to the rearing of the future generation in such a way that they can do useful things both at home and outside in their social life. In brief, generativity is the basic characteristics of this phase. Unless the middle aged individuals can be generative, they can be stuck in the state of stagnation by feeling themselves useless later in life, might ignore what is happening in their surrounding and behave selfishly by establishing unhealthy relationships with others. In brief, from Erikson’s perspective, generativity in general is the interest in establishing and guiding the next generation (Bacanlı and Işık-Terzi, 2013; Corey, 2008; Karacan and Berument, n.d.; Onur, 2011; Senemoğlu, 2007).

In their study involving fathers, Snarey et al. (1987) define three types of generativity as biological generativity (contribution to future generations by having children); parental generativity (getting involved in any child-rearing activities regardless of the having children) and social generativity (leading the society or contributing somehow to the society by involving in voluntary work, for example). Their study explored the relationship among these three types of generativity. As a result of the study, they concluded that biological and parental generativity made the achievement of the social generativity easier (Karacan, 2007; Karacan and Berument, n.d.). Thus, it would be fair to state that the ultimate objective in the middle adulthood period is to accomplish social generativity by means of the support of the other generativity types.

For an individual to spend the middle adulthood period productively in all aspects and to proceed healthily to the old age by meeting the developmental needs of the middle adulthood period, he/she needs to be motivated. This is true not only for the middle adulthood period but also for all the other life-long developmental phases. Thanks to this motivation, the individual can cope with the period-specific problems they encounter. For that reason, an individual's general happiness and psychological healthiness and wellness gain importance as they proceed to a socially productive middle adulthood period (Erikson, 1963 cited in Karacan, 2007).

In Myers, Sweneey & Witner's (2003) opinion, well-being is a way of life. More specifically, it refers to a functional life in all the areas of social and personal life for people tending towards being ideally healthy and good, integrating body, mind and spirit and for those with an individual purpose and an aim to lead to a productive life (Akça-Koca, 2013). Hence, people want to be happy and good as one of their biggest goals and perceive well-being in general as something embodying happiness (Ryff and Singer, 2006). On the other hand, for people to establish proper relationships with themselves and with their environment by being aware of their potentials, to set a goal in life and make efforts to reach this goal are important reflections of the state of psychological well-being. Keyes, Shmotkin and Ryff (2002) define psychological well-being as a person's perception of him/herself as positive and explain that a person with psychological well-being is able to act autonomously, has a positive purpose in life, is able to establish positive relationships with the environment and is aware of his/her capacity and limitations (Hamurcu, 2011).

According to Ryff, psychological well-being is comprised of six components: The first component is "self-acceptance" that refers to an individual's positive assessment of his/her past life or of him/herself and to the recognition and acceptance of various aspects of the self. The second dimension is “positive relationships with others” that refers to a tendency towards quality, strong empathy, love and friendship in his/her relationships.
with other people. The third component is "autonomy" that is a combination of the adjustment of the feeling of self-determination and the determination related to the self, the autonym and behaviors. The fourth component, "environmental mastery", refers to people's capacity to effectively manage their own lives and the life in their surroundings as well as their active involvement. On the other hand, 'purpose of life' is the fifth component described as the individuals' belief in the meaningfulness and purposefulness of their lives, their desires, targets and the accompanying feelings of meaningfulness and integrity. "Personal growth" is the last component that is described as having the feeling that their development is continuing and they gain new experiences and a sense of realizing their potentials (Ryff, 1995; Ryff and Singer, 2006). As can be understood from all components of psychological well-being and especially from "environmental mastery" and "purpose in life" components referring to their desires, their interaction with the environment to realize meaningful and integral goals in their lives is closely related to the concept of social generativity underlined by Erikson for middle adulthood period (Timur, 2008). Consequently, exploring the relationship between psychological well-being and social productivity that are focused in this study is important to help individuals to be able to overcome problems in the middle adulthood period more healthily, to realize necessary motivation areas and to lead to a more active and effective middle adulthood period. This study is also important as it can lead to further similar studies.

There have been some studies abroad dealing with the relationship between the psychological well-being and generativity of middle aged individuals. In these studies, it was found that generativity is a predictor of life satisfaction and happiness that are related to psychological well-being (McAdams, 1993 cited in Karacan, 2007). Similarly, some studies led to conclusion that generativity and psychological well-being are related (Jeong-Shin & Cooney, 2006; Ochse & Plug, 1989 cited in Huta & Zuroff, 2008; Peterson & Klohn, 1995 cited in Karacan, 2007; Rothrauff & Cooney, 2008). For instance, Phelan (2002) whose participants were 74 college student and 67 middle aged people living in the USA investigated whether the generativity behaviors could be the predictor of the psychological well-being by keeping the marital status, age, health and income variables under control. She concluded that generativity level significantly predicts psychological well-being in terms of successful aging. In another study, Azarow (2003) focused on Erikson’s view that psychological well-being and generativity are related. Conducting the study with 273 35-64-year-old participants, Azarow revealed that generativity and psychological well-being are connected.

On the other hand, some studies dealing with various topics and involving middle-aged groups have been carried out in our country. These studies are mostly in the form of comparison of the participants in terms of future time orientation (Güler-Edwards, 2008), adaptive self-management, psychological well-being, classic and everyday problem-solving performances (Altınordu, 2005), suicidal tendencies (Durak-Batığın, 2002), job satisfaction and work efficiency (Güler, 1990). Similarly, Özkorumak, Sağlam Aykut and Tiryaki (2014) compared middle aged, old and young groups with mania disorders. In addition to this study, the anxiety and depression of middle aged women arising from menopause (Duç, 2014) and the anxiety levels of individuals in the middle age period (Gülnaz-Makiniz, 2003) are among other studies with different focuses studied in Turkey. However, no research studies investigating the relationship between the concepts of social generativity and psychological well-being have been encountered in our country. Thus, the current study aims to explore the relationship between the psychological well-being and social generativity levels of 40-60-year-old individuals in the middle age period.

In line with the aim of the study, the following research questions have been formulated:
- Do the psychological well-being and social generativity levels of 40-60-year-old individuals differ depending on the variables of gender, socio-economic level, educational background and whether they work or not?
- Are the psychological well-being and social generativity levels of 40-60-year-old individuals related to each other?
- Is the social generativity levels of 40-60-year-old individuals can significantly justify their psychological well-being?
METHOD

In this part, the model of the research study, sample, data collection instruments and data analysis are explained.

Research Model

In this research study, the relational screening model, which is a type of general screening model, was used. The relational screening model is a research model aiming to identify the presence and/or degree of the simultaneous change in two or more variables. This study can be categorized as a predictive relationship research study as it examines the relationship between the level of social generativity and psychological well-being (Karasar, 2005; Balı, 2005).

Participants of the Study

The participants of the study are 151 adults (64 female and 87 female) living in İstanbul, Gaziantep and Balıkesir provinces. Their ages range from 40 to 60 and the mean of their ages is 46. Among the participants, 17 of them (11.3%) categorized themselves in the low socio-economic level, 95 (62.9%) in the middle socio-economic level while 39 (25.8%) in the high socio-economic level group. Also, 34 of the participants (22.5%) were primary school graduates while 9 (6.0%) were secondary school, 24 (15.9%) were high school, 84 (55.6%) were university graduates. Out of the total number of participants, 107 (70.9%) were working while the remaining 44 (29.1%) were not.

Data Collection Instruments

The Short form of the Scales of Psychological Well-being (PWBS-42): The scales of psychological well-being (PWBS) were developed by Ryff (1989) as a self-report scale aiming to assess psychological well-being. The scale contains 6 sub-dimension (i.e. self-acceptance, positive relationships, autonomy, environmental mastery, purpose of life and personal growth) each of which includes 14 questions. The total number of questions in the scale is 84. The highest score that can be obtained from the scale scored on the basis on the 7 Likert type is 504 while the lowest score is 84. High scores mean that the psychological well-being is high. On the other hand, Akın et al. (2012) adapted the Short form of the Scales of Psychological Well-being (PWBS-42) into Turkish and studied its reliability and validity. Their study led to the PWBS’s short form with 42 questions. The correlations of the sub-dimension of the English and Turkish forms are as follows: .94 for autonomy, .97 for experimental mastery, .97 for personal growth, .96 for positive relationships, .96 for purpose of life and .95 for self-acceptance (Akın, 2008; Topuz, 2013).

Loyala Generativity Scale (LGS): Developed by McAdams and de St. Aubin (1992), the Loyala Generativity Scale including 20 items assesses social productivity. The scale with a Cronbach alpha coefficient of .76 assesses the individual's generative interest in making a positive and permanent impact on the future generations using their generative behaviors (Karacan, 2007; Vatan and Gençöz, n.d.).

The data of the study were collected from volunteering participants by means of these scales. The scales were administered by researchers in the houses and working places of the participants. Only the volunteering participants took part in the study. The administration of the scales took approximately 20. In addition to descriptive statistics used to analyze the data obtained in the study, Independent Samples T-Test, Pearson product moment correlation coefficient techniques and regression analysis were used. The data were analyzed using SPSS 15.0 package program.

FINDINGS

The findings relevant to each research question are presented below:

The first research question of study is "Do the psychological well-being and social generativity levels of 40-60-year-old individuals differ depending on the variables of gender, socio-economic level, educational background and whether they work or not?" The findings pertaining to this question are illustrated in Tables 1, 2, 3, 4, 5, 6, 7 and 8.
Table 1: Results of the Independent Group T-test Applied to Determine whether the Psychological Well-being Scale Scores Differ Depending on the Gender Variable

<table>
<thead>
<tr>
<th>Score</th>
<th>Groups</th>
<th>N</th>
<th>(\bar{x})</th>
<th>ss</th>
<th>Sh(\bar{x})</th>
<th>(t)</th>
<th>Sd</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psy. Well-being</td>
<td>Male</td>
<td>64</td>
<td>213,24</td>
<td>29,57</td>
<td>3,69</td>
<td>-.230</td>
<td>149</td>
<td>.818</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>87</td>
<td>214,41</td>
<td>31,84</td>
<td>3,41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As can be realized in Table 1, the Independent Group t-test done to reveal whether the "Psychological Well-being Scale" scores of the participants significantly differ depending on the gender variable showed that the difference in the arithmetic means of the groups was not significant \((t=-.230; p>.05)\).

Table 2: Results of the Independent Samples T-Test Applied to Determine whether the Generativity Scale Scores Differ Depending on the Gender Variable

<table>
<thead>
<tr>
<th>Score</th>
<th>Groups</th>
<th>N</th>
<th>(\bar{x})</th>
<th>ss</th>
<th>Sh(\bar{x})</th>
<th>(t)</th>
<th>Sd</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generativity</td>
<td>Male</td>
<td>64</td>
<td>57,20</td>
<td>10,38</td>
<td>1,29</td>
<td>-.895</td>
<td>149</td>
<td>.372</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>87</td>
<td>58,62</td>
<td>9,01</td>
<td>.96</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 illustrates the results of the Independent Samples t-test done to find an answer to the question whether the "Generativity Scale" scores of the participants significantly differ depending on the gender variable. According to the results, the difference in the arithmetic means of the groups was not statistically significant \((t=-.895; p>.05)\).

Table 3: Results of the Kruskal Wallis-H Test Applied to Determine Whether the Psychological Well-being Scale Scores Differ Depending on the Socio-economic Level Variable

<table>
<thead>
<tr>
<th>Score</th>
<th>Groups</th>
<th>N</th>
<th>(\bar{x}_{ra})</th>
<th>(x^2)</th>
<th>sd</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-being</td>
<td>Low</td>
<td>17</td>
<td>42,15</td>
<td>15,63</td>
<td>2</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>95</td>
<td>75,36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>39</td>
<td>92,31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>151</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 summarizing the results of the Kruskal Wallis-H test applied to investigate whether there is a significant difference in the "Psychological Well-being Scale" scores of the participants depending on the socio-economic level (SOL) variable indicates that the difference in the ranking averages (RA) of the groups was significant \((X^2=15,63; p<001)\). Additionally, the results of the Mann Whitney U test done to reveal between which groups the difference occurs in the psychological well-being scores depending on the perceived SOL variable showed that the difference was between groups with perceived low and middle levels of SOL, and the difference was found to be in favor of the group with middle levels of SOL (RA=42,15) at the level of p<.05; the difference between middle and high groups was found to be in favor of the group in the high level (RA=75,36) at the level of p<.05; the difference between low and high group was in favor of high group (RA=92,31) at the level of p<.001.
Table 4 demonstrates the results of the Kruskal Wallis-H test done to explore whether there is a significant difference in the "Generativity Scale" scores of the participants depending on the SOL variable. Form Table 4, it can be realized that the difference in the ranking averages of the group were not significant ($x^2 = 5.84; p>0.05$).

Table 5: Results of the Kruskal Wallis-H Test Applied to Determine Whether the Psychological Well-being Scale Scores Differ Depending on the Educational Background Variable

As can be understood from Table 5, according to the results of the Kruskal Wallis-H test applied to show whether the "Psychological Well-being Scale" scores differ depending on the educational background variable, the difference in the ranking averages of the groups were significant ($x^2 = 19.42; p<0.001$). Also, the Mann Whitney U test was used to reveal among which groups the difference occurs in the psychological well-being scores depending on the perceived educational background variable. The test revealed that the difference was between groups with primary school graduates and university or higher program graduates and the difference was found to be in favor of the group graduating from university or higher programs (RA=55,03) at the level of p<0.01; the difference between graduates of secondary school and graduates of university or higher programs was in favor of the latter group (RA=52,83) at the level of p<0.05; the difference between high school graduates and those who graduated from the university or graduate programs was also in favor of the latter (RA=66,98) at the level of p<0.05. On the other hand, the difference in the ranking averages of the other groups was not found to be statistically significant (p>0.05).

Table 6: Results of the Kruskal Wallis-H Test Applied to Determine whether the Generativity Scale Scores Differ Depending on the Educational Background Variable

As illustrated in Table 6, the Kruskal Wallis-H Test was applied to explain whether a significant difference in the "Productivity Scale" scores of the participants occurs depending on their educational background, and the test results revealed a significant difference in the ranging averages of the groups ($x^2 = 19.32; p<0.001$). Besides, the Mann Whitney U test was used to reveal among which groups the difference occurs, and the results of the test showed the following: the difference between participants who graduated from primary school and university...
or higher programs was found to be in favor of the latter group (RA=58.69) at the level of p<.001; the difference between high school graduates and the participants who graduated from university or higher graduates programs was similarly found to be in favor of the latter group (RA=57.00) at the level of p<.05. However, it was revealed that the difference in the ranking averages of the other groups was not statistically significant (p>.05).

Table 7: Results of the Independent Samples T-Test Applied to Determine whether the Psychological Well-being Scale Scores Differ Depending on the Working Conditions Variable

<table>
<thead>
<tr>
<th>Score</th>
<th>Groups</th>
<th>N</th>
<th>x</th>
<th>ss</th>
<th>sht</th>
<th>t</th>
<th>Sd</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psy. Well-being</td>
<td>Working</td>
<td>107</td>
<td>219.79</td>
<td>30.29</td>
<td>2.92</td>
<td>3.812</td>
<td>149</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Not working</td>
<td>44</td>
<td>199.64</td>
<td>27.46</td>
<td>4.14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As can be seen from Table 7, the Independent Samples t-test was used to identify whether the "Psychological Well-being Scale" scores of the participants differ depending on their working conditions. The result of the test showed that the difference in the arithmetic means of the groups was found to be significant in favor of the participants who were working at the time of the research study (t=3.812; p<.001).

Table 8: Results of the Independent Samples T-Test Applied to Determine whether the Generativity Scale Scores Differ Depending on the Working Conditions Variable

<table>
<thead>
<tr>
<th>Score</th>
<th>Groups</th>
<th>N</th>
<th>x</th>
<th>ss</th>
<th>sht</th>
<th>t</th>
<th>Sd</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generativity</td>
<td>Working</td>
<td>107</td>
<td>59.42</td>
<td>10.03</td>
<td>.96</td>
<td>2.857</td>
<td>149</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>Not working</td>
<td>44</td>
<td>54.61</td>
<td>7.57</td>
<td>1.14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As presented in Table 8, the Independent Samples t-test done to investigate whether the "Generativity Scale" scores of the participants significantly differ depending on the working conditions variable revealed that the difference in the arithmetic means of the groups was in favor of the group including participants who were working (t=3.812; p<.05).

The second research question is "Are the psychological well-being and social generativity levels of 40-60-year-old individuals related to each other?" Findings relevant to this question are presented in Table 9:

Table 9: Results of the Pearson Product Moment Correlation Analysis Applied to Determine the Relationship between the Psychological Well-being Scale Scores and Generativity Scale Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>R</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psy. Well-being</td>
<td>151</td>
<td>.527</td>
<td>.000</td>
</tr>
</tbody>
</table>

As shown in Table 9, the Pearson analysis used to determine whether there is a significant relationship between the psychological well-being scale scores and generativity scale scores of the participants led to the finding that the relationship among the variables was found to be significantly positive (r=.52; p<.001).

The third research question of this study is "Is the social generativity levels of 40-60-year-old individuals can significantly justify their psychological well-being?" Table 10 summarizes the findings related to this question.
As illustrated in Table 10, as a result of the regression analysis applied to reveal the predictive power of the "Social Generativity Test" scores for the "Psychological Well-being Test" scores, the model was found to be significant ($F=57.436; \ p<.05$). In other words, the results showed that the predictive power of the "Social Generativity Test" scores for the "Psychological Well-being Test" scores was found to be significant ($R^2=.278; \ p<.001$). Social generativity justifies approximately 27% of the psychological well-being.

### DISCUSSION

According to the findings of the study, there is a positive relationship between the participants' scores of psychological well-being and their scores of social generativity. This finding is in line with the views of Eriksoninan approach (Erikson, 1963 cited in Azarow, 2003). Additionally, researchers such as Azarow (2003), McAdams (1993), Peterson & Klohnen (1995), Ochse & Plug (1989) and Phelan (2002) found similar results in their studies. Similarly, Peterson & Klohnen (1995) concluded in their study that productivity and psychological well-being are related. For instance, McAdams (1993) revealed that productivity could predict life satisfaction and happiness that are related to psychological well-being. On the other hand, Azarow (2003) evaluated Erikson's idea that psychological well-being and productivity are related. As a result of this study whose participants were 273 35-64-year-old people living in Illinois, it was realized that productivity and psychological well-being are related.

Moreover, the social generativity levels of the participants can significantly predict their psychological well-being. Involving 74 college students and 67 middle aged individuals living in the USA, Phelan’s (2002) study explored whether the generativity behaviors could predict the psychological well-being by keeping the age, marital status, income and health variables under control. The study yielded the finding that generativity level significantly predicts psychological well-being in terms of successful aging.

The variables of socio-economic level, educational background and whether they work or not are focused within the scope of the present study. According to the data obtained in the present study, educational level and working condition caused significant differences in the psychological well-being and social generativity scores of the participants while the gender variable did not result in a any significant differences. Tough psychological well-being differ significantly depending on socio-economic level, social generativity doesn’t differ. Thus, it would be fair to suggest that working participants have higher levels of psychological well-being, and social generativity and working play an effective role in the development process of their personality. In Azarow’s (2003) study, it was found that generativity and well-being do not differ depending on gender. However, contrary to the findings of the present study, Azarow’s study revealed that generativity and psychological well-being do not differ depending on the income and educational background. The difference between the findings of Azarow’s study and the current study might result from the cultural differences of two different samples selected in Turkey and the USA.

The findings of the study also show that the scales differ depending on the educational background variable only in the university and higher levels. This result implies that graduating from a university or from any higher graduate programs is an important factor in increasing individuals' well-being and social generativity.

Furthermore, the results of the study indicate that as the individuals' socio-economic levels increase, the levels of their psychological well-being decrease. This finding can be justified by stating that individuals cannot satisfy their psychological needs as they are occupied with meeting their basic personal needs. On the other hand, the fact that the social generativity doesn't differ depending on socio-economic level can be considered to be a result of their all socio-economic level's openness to help others.
Considering the effects of the social generativity and psychological well-being of the individuals in the middle adulthood period on their personality development, it can be recommended that it would be useful for them to acquire a profession and work and raise their educational level to the university level so that they can increase their level of generativity.

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STUDENTS’ CHARACTERISTICS NEEDED BY COMPANIES ACCORDING TO COOPERATIVE EDUCATION: THE CASE OF MUANG DISTRICT AT SURATTHANI PROVINCE, THAILAND

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ABSTRACT
This study examined students’ characteristics needed by companies according to cooperative education: the case of Muang District at Suratthani Province, Thailand. The sample was 370 respondents in companies. Data collection was obtained through a questionnaire. The statistics used in this study were frequency, percentage, mean, standard deviation and testing hypotheses by using t-test, F-test and a chi-square. The results were found that most companies required fourth year students from state universities, majoring in business administration. Students’ characteristics which most companies needed from students the most were morality and ethics. Characteristics of entrepreneurs and companies were important and had an effect to students’ characteristics in terms of the Thai Qualifications Framework for Higher Education (TQF) and characteristics of entrepreneurs and companies were related to students’ basic information significantly at p<0.05. In addition, this study suggested that universities should focus on appropriate students’ development, particularly by developing proper curricula in order to enhance competence and readiness before working according to cooperative education with companies.

Key words: Cooperative education, Students’ characteristics, Companies, Muang District at Suratthani Province, Thailand.

INTRODUCTION
Nowadays, news and information are important sectors for the people of Thailand. Particularly, Thailand’s society state is to be learning social and there are innovation and new knowledge which have occurred all the time. Consequently, the people of Thailand have to develop capability in various fields consecutively. However, the development for the people of Thailand in terms of obtaining knowledge, skill and preparation in various fields is also necessary extremely for country propulsion. Moreover, since 2002 various universities in Thailand...
have made an effort to improve the quality of education by emphasizing self-learning and promoting learner-centered educational activities. Students must be eager to learn and use creativity in order to get the most knowledge of academic and education before graduating (Khammanee, 2002). The principal goal of educational program is to sustain and facilitate students’ learning and in educational program, assessment is intrinsically linked to students’ learning and effectiveness (Hodges, Eames & Coll, 2014). Many universities in Thailand have realized the importance of generating the high quality and potential graduates in order to respond needs of the government and the private sectors. Particularly, cooperative education that focuses to students who will get many experiences directly from working in companies (Kolb, 1984). Today, the world moves to the situation of enhancing globalization, cooperative education has experienced growth and development in needs for the international placements (Coll, Pinyonatthagarn & Pramoolsook, 2003).

Cooperative education is educational system which focuses on gaining experiences by working in companies systemically. Cooperative education affords students teaching in universities and work together with students’ working according to cooperative education in companies. Cooperative education was developed the first in the U.S.A. because of many lecturers in universities have low performance issues in students teaching (Yamenun, 2009). However, most students also have low professional skill as well. Hence, cooperative education can also improve lecturers’ performance in students teaching properly. According to Thailand has developed cooperative education in various universities by using a prototype from Suranaree University of Technology in Nakhonratchasima Province. Cooperative education is educational system that integrates working and learning. Students can work in real situations permanently. After working in companies through cooperative education, students can get the chance to work in companies and make various benefits for it. Normally, companies assigned a special project to students. The project can be finished completely within four months. A mentor or job supervisor guides and provides recommendations to students during the project duration. Moreover, many companies are now interested in cooperative education and thus have increased cooperation with universities. Office of the Higher Education Commission is the organization under the Ministry of Education in Thailand which accounts with a database of companies’ number that have cooperated through cooperative education. According to in 2011, including 108 universities, 12,962 companies and 26,048 students in Thailand had participated in cooperative education (Office of the Higher Education Commission, 2013). As mentioned before, the mission of cooperative education is to encourage professionals to share their experiences to students in accordance with they can learn how to handle in real-life situations (Gordon, 1998). Therefore, various companies in Thailand should participate in cooperative education management to obtain the most benefit by human resource improvement in order to respond more effectively to the country development needs.

Suratthani Province is the biggest province in the Southern region of Thailand which has a total area of approximately 12,891 square kilometers. It has the second highest economic growth of the Southern region which is shown on how business and investment has prospered in recent years. Consequently, many companies also have been established in Suratthani Province. According to in 2012, there were a total number of 23,670 companies in this province. Particularly, Muang District had the highest number of companies in amount of 6,905 companies (Suratthani Provincial Statistical Office, 2012). Therefore, they also have influenced on the increasing of employment and labor needs as well. Accordingly, there are three main universities namely, Suratthani Rajabhat University, Prince of Songkla University Suratthani Campus and Tapee University which is located in Muang District at Suratthani Province. Particularly, all of them have encouraged to generate students into working with companies after graduating. In addition, characteristic of graduates that needs by companies is having an academic profundity appropriately and morality and ethics in occupation (Maejo University, 2005). Nowadays, graduates also have to understand and learn working in globalization era in order to obtain the development of occupational skill which can emerge from learning while they have a good opportunity into working with companies. However, the organization development plays an important role to the growth and competition with business competitors. Companies have to receive the highest quality of personnel in order to work with the organization. Hence, working according to cooperative education can be training to students in order to obtain knowledge, experience and readiness into working with companies after graduating and this is also regarded as a key force and principal goal of cooperative education. However, most
universities still have not had the information of students’ characteristics needed by companies according to cooperative education.

Thus, this study is also necessary and important in order to realize appropriate students’ characteristics needed by companies according to cooperative education and using the results for students’ development and generating in order to conform to companies’ needs. Moreover, the purpose of this study was to examine characteristics of entrepreneurs and companies, students’ basic information, students’ characteristics in terms of the Thai Qualifications Framework for Higher Education (TQF), the differentiation comparison between characteristics of entrepreneurs and companies with students’ characteristics in terms of the Thai Qualifications Framework for Higher Education (TQF), the relationship between characteristics of entrepreneurs with companies and students’ basic information, and the recommendations for universities, companies and students, respectively.

LITERATURE REVIEW

Cooperative Education in Thailand
Cooperative education is educational novelty for Thailand which provides students with on-site work based learning systematically and efficiently (Sirijeerachai, 2009). Professor Wichit Srisa-an was the first person who introduced cooperative education to Thailand in 1993 (Srisa-an, 2002). Over the past years there has been the dramatic growth in the number of universities which making cooperative education available for participation in terms of activities by students and companies in many countries (Ryder & Wilson, 1987), including Thailand. In 1993, the first public autonomous universities of Thailand namely, Suranaree University of Technology in Nakhonratchasima Province was the first universities that initiated cooperative education in the country. Most universities operate cooperative education in a semester system. Only a few, including Suranaree University of Technology in Nakhonratchasima Province, Walailuk University in Nakhonsithammarat Province and Maefaluang University in Chiangrai Province operate a trimester system and each trimester consists of approximately sixteen weeks (Pinpetch & Baum, 2009). However, students can usually join cooperative education during their third and fourth years. Besides, there are 108 universities in Thailand which have adopted cooperative education with students and have achieved satisfactory results.

Thai Qualifications Framework for Higher Education (TQF)
The Thai Qualifications Framework for Higher Education (TQF) is a frame which developed from the National Qualifications Framework (NQF). Its purpose is to determine the education qualification system for higher education in the country. It consists of the qualification level, the constantly connection of one qualification to another qualification, the standard of learning in each qualification level that increased followed by each qualification level, the quantitative of learning which is consistent with required time, the characteristics of curricula in each qualification level which is promoting long life learning, including system and mechanism which ensure effectiveness and implementation followed by the Thai Qualifications Framework for Higher Education (TQF) of universities in order to generate graduates for achievement followed by the standard of learning (Ministry of Education, 2009).

Moreover, The Thai Qualifications Framework for Higher Education (TQF) comprises five categories as follows:
1. Morality and ethics
2. Knowledge
3. Intellectual
4. Interpersonal and responsibility
5. Numbering analysis, communication and information technology

Companies in Suratthani Province of Thailand
Suratthani Province is the capital of the Upper Southern region and the economical center of the government and the private sectors. There are a variety of companies and many type of business have been growing rapidly in this area. Thus, the government and the private sectors also have sustained the best policies for business development in Suratthani Province. Suratthani Provincial Statistical Office surveys and prepares a database of
companies in Suratthani Province every five years. The latest survey results were published on November 2012. In addition, companies in Suratthani Province were classified in ten categories as follows:

1. Motor Vehicle business group
2. Hotel and restaurant business group
3. Banking and real estate business group
4. Information and computer business group
5. Service and recreation business group
6. Agricultural producing and processing business group
7. Construction business group
8. Tourism and hospitality business group
9. Telecommunication and communication business group
10. Hospital business group

METHODOLOGY

Data Collection and Sampling
In this study was the quantitative research. Both secondary data and primary data are collected for analysis. The secondary data is collected from Suratthani Provincial Statistical Office and Office of the Higher Education Commission under the Ministry of Education in Thailand. The primary data is collected through the method of convenience sampling from respondents by a questionnaire. The sample was comprised of 370 respondents in companies from 11 different Sub-Districts in Muang District at Suratthani Province, Thailand. The sample size was set by Yamane (1967). However, the sample was divided by Sub-Districts (see Table 1).

Table 1: The population and sample

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name of Sub-Districts in Muang District at Suratthani Province, Thailand</th>
<th>Population (Companies)</th>
<th>Sample (Companies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Makham Tia Sub-District</td>
<td>2,609</td>
<td>140</td>
</tr>
<tr>
<td>2.</td>
<td>Talat Sub-District</td>
<td>2,024</td>
<td>108</td>
</tr>
<tr>
<td>3.</td>
<td>Bang Kung Sub-District</td>
<td>954</td>
<td>51</td>
</tr>
<tr>
<td>4.</td>
<td>Khun Thale Sub-District</td>
<td>769</td>
<td>41</td>
</tr>
<tr>
<td>5.</td>
<td>Wat Pradu Sub-District</td>
<td>311</td>
<td>16</td>
</tr>
<tr>
<td>6.</td>
<td>Khlong Chanak Sub-District</td>
<td>108</td>
<td>6</td>
</tr>
<tr>
<td>7.</td>
<td>Bang Bai Mai Sub-District</td>
<td>46</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Bang Chana Sub-District</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>Khlong Noi Sub-District</td>
<td>29</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>Bang Pho Sub-District</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>Bang Sai Sub-District</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6,905</td>
<td>370</td>
</tr>
</tbody>
</table>

Research Framework and Variables
According to figure 1 illustrates the research framework and which indicated independent and dependent variables of this study. Firstly, the independent variables for component A are characteristics of entrepreneurs which are gender, age, education and position in companies; and Component B contains characteristics of companies such as type of companies, number of employees in companies, time period of running business, companies profit and time period that companies needed students according to cooperative education. Secondly, the dependent variables for component C are students’ basic information which includes type of universities, major that companies needed students according to cooperative education, students’ year, grade point average and number of students that companies needed according to cooperative education; and Component D comprises students’ characteristics needed by companies according to cooperative education followed by the Thai Qualifications Framework for Higher Education (TQF) such as morality and ethics,
knowledge, intellectual, interpersonal and responsibility and numbering analysis, communication and information technology, respectively.

In this study, a questionnaire was designed to collect data followed by the research framework and adapted by various researches. There are three sections in a questionnaire. For the reliability, a questionnaire was examined through a group of respondents in 40 companies who were not the sample of this study in Muang District at Suratthani Province. The Statistical Package for Social Science (SPSS) software was used to test on three sections of a questionnaire in order to determine the reliability. It was found in terms of the Cronbach’s Alpha Coefficient = 0.971 which was an acceptable level. In addition, the statistic methods of this study were frequency, percentage, mean, standard deviation, t-test, F-test and a chi-square. However, the SPSS software was used to analyze them and testing hypotheses.

In this study contains two hypotheses as follows:
Hypothesis 1: The differentiation of characteristics of entrepreneurs and companies has an effect to students’ characteristics needed by companies according to cooperative education that to be difference.
Hypothesis 2: There is the relationship between characteristics of entrepreneurs and companies with students’ basic information.

RESULTS

According to the descriptive statistics was used to analyze characteristics of entrepreneurs and companies, students’ basic information and students’ characteristics needed by companies according to cooperative education in the sample. The results found that most respondents were female (214 respondents, 57.8%), average age of respondents was 25 to 34 years (144 respondents, 38.9%), education of respondents was bachelor’s degree (253 respondents, 68.4%), position of respondents in companies was department head or supervisor (115 respondents, 31.1%), type of companies was motor vehicle business group (69 respondents, 18.1%), number of employees in companies was less than 50 persons (239 respondents, 64.6%), time period of running business was more than 5 years (245 respondents, 66.2%), companies profit was increased (274
respondents, 74.1%) and time period that companies needed students according to cooperative education was October to January (123 respondents, 33.2%).

Most companies needed students from state universities (218 respondents, 58.9%), majoring in business administration (229 respondents, 61.9%), fourth year (263 respondents, 71.1%), grade point average was during 2.51 to 3.00 (126 respondents, 34.1%) and number of students that companies needed according to cooperative education was two students (160 respondents, 43.2%).

Moreover, the 5 level Rating Scale ranging from 5 = extremely important to 1 = not at all important was adopted to analyze students’ characteristics needed by companies according to cooperative education. Auon (2007) recommended that the calculation in order to determine the width of class interval which was found by dividing between the data range and the number of classes. According to in this study, the data range = highest value – lowest value = 5 – 1 = 4, the number of classes = 5 and the width of class interval will be 4/5 = 0.80. Consequently, in order to estimate the results obtained from data analysis, the intervals were used as follows: 4.21 to 5.00 = extremely important, 3.41 to 4.20 = very important, 2.61 to 3.40 = moderately important, 1.81 to 2.60 = slightly important and 1.00 to 1.80 = not at all important. The results found that overall of them were very important (mean = 4.14, standard deviation = 0.35). When they were considered separately, there were 2 aspects which most companies needed from students that were considered as extremely important which included morality and ethics (mean = 4.46, standard deviation = 0.44) and interpersonal and responsibility (mean = 4.32, standard deviation = 0.45) and 3 aspects were considered as very important that contained knowledge (mean = 4.00, standard deviation = 0.46), numbering analysis, communication and information technology (mean = 3.98, standard deviation = 0.49) and intellectual (mean = 3.92 standard deviation = 0.50).

Table 2: The differentiation comparison between characteristics of entrepreneurs and companies with students’ characteristics needed by companies according to cooperative education

<table>
<thead>
<tr>
<th>Characteristics of entrepreneurs and companies</th>
<th>Students’ characteristics needed by companies according to cooperative education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Morality and ethics</td>
</tr>
<tr>
<td>1. Gender</td>
<td>0.897</td>
</tr>
<tr>
<td></td>
<td>(t = -0.130)</td>
</tr>
<tr>
<td>2. Age</td>
<td>0.886</td>
</tr>
<tr>
<td></td>
<td>(F = 3.888)</td>
</tr>
<tr>
<td>3. Education</td>
<td>0.082</td>
</tr>
<tr>
<td></td>
<td>(F = 2.249)</td>
</tr>
<tr>
<td>4. Position in companies</td>
<td>0.001*</td>
</tr>
<tr>
<td></td>
<td>(F = 2.090)</td>
</tr>
<tr>
<td>5. Type of companies</td>
<td>0.640</td>
</tr>
<tr>
<td></td>
<td>(F = 0.775)</td>
</tr>
<tr>
<td>6. Number of employees in companies</td>
<td>0.027*</td>
</tr>
<tr>
<td></td>
<td>(F = 2.557)</td>
</tr>
<tr>
<td>7. Time period of running business</td>
<td>0.434</td>
</tr>
<tr>
<td></td>
<td>(F = 0.915)</td>
</tr>
<tr>
<td>8. Companies profit</td>
<td>0.000*</td>
</tr>
<tr>
<td></td>
<td>(F = 8.282)</td>
</tr>
</tbody>
</table>
Table 2 demonstrated that t-test and F-test results for the differentiation comparison between characteristics of entrepreneurs and companies with students’ characteristics needed by companies according to cooperative education at p<0.05. The results found that characteristics of entrepreneurs and companies were important and had an effect to students’ characteristics in terms of the Thai Qualifications Framework for Higher Education (TQF) significantly at p<0.05. Particularly, when considering in each items the results revealed that gender with interpersonal and responsibility were significantly different, age with knowledge and intellectual were significantly different, education with interpersonal and responsibility were significantly different, position in companies with morality and ethics were significantly different, type of companies with knowledge were significantly different, number of employees in companies with morality and ethics and interpersonal and responsibility were significantly different, time period of running business with intellectual were significantly different, companies profit with morality and ethics, intellectual and interpersonal and responsibility were significantly different and time period that companies needed students according to cooperative education with knowledge were significantly different. Therefore, hypothesis 1 is accepted.

Table 3: The relationship between characteristics of entrepreneurs and companies with students’ basic information

<table>
<thead>
<tr>
<th>Characteristics of entrepreneurs and companies</th>
<th>Type of universities</th>
<th>Major that companies needed students according to cooperative education</th>
<th>Students’ year</th>
<th>Grade point average</th>
<th>Number of students that companies needed according to cooperative education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td>0.165 (Χ² = 3.600)</td>
<td>0.614 (Χ² = 1.608)</td>
<td>0.025* (Χ² = 7.373)</td>
<td>0.017* (Χ² = 12.084)</td>
<td>0.816 (Χ² = 1.559)</td>
</tr>
<tr>
<td>2. Age</td>
<td>0.558 (Χ² = 10.662)</td>
<td>0.319 (Χ² = 7.487)</td>
<td>0.040* (Χ² = 21.766)</td>
<td>0.127 (Χ² = 32.014)</td>
<td>0.407 (Χ² = 24.970)</td>
</tr>
<tr>
<td>3. Education</td>
<td>0.322 (Χ² = 6.991)</td>
<td>0.060 (Χ² = 8.307)</td>
<td>0.159 (Χ² = 9.272)</td>
<td>0.000* (Χ² = 41.191)</td>
<td>0.000* (Χ² = 35.493)</td>
</tr>
<tr>
<td>4. Position in companies</td>
<td>0.606 (Χ² = 4.528)</td>
<td>0.126 (Χ² = 6.230)</td>
<td>0.001* (Χ² = 23.366)</td>
<td>0.000* (Χ² = 48.117)</td>
<td>0.040* (Χ² = 21.795)</td>
</tr>
<tr>
<td>5. Type of companies</td>
<td>0.090 (Χ² = 26.449)</td>
<td>0.000* (Χ² = 36.375)</td>
<td>0.128 (Χ² = 24.880)</td>
<td>0.001* (Χ² = 66.576)</td>
<td>0.000* (Χ² = 74.292)</td>
</tr>
<tr>
<td>6. Number of employees in companies</td>
<td>0.563 (Χ² = 8.677)</td>
<td>0.182 (Χ² = 11.380)</td>
<td>0.827 (Χ² = 5.861)</td>
<td>0.155 (Χ² = 26.350)</td>
<td>0.000* (Χ² = 55.868)</td>
</tr>
<tr>
<td>7. Time period of running business</td>
<td>0.043* (Χ² = 13.031)</td>
<td>0.547 (Χ² = 2.232)</td>
<td>0.035* (Χ² = 8.618)</td>
<td>0.639 (Χ² = 9.739)</td>
<td>0.014* (Χ² = 25.088)</td>
</tr>
<tr>
<td>8. Companies</td>
<td>0.144</td>
<td>0.010* (Χ² = 12.084)</td>
<td>0.625 (Χ² = 8.618)</td>
<td>0.260 (Χ² = 9.739)</td>
<td>0.041* (Χ² = 25.088)</td>
</tr>
</tbody>
</table>

*Significantly different at p<0.05
Table 3 demonstrated that a chi-square results of the relationship between characteristics of entrepreneurs and companies with students' basic information. The results found that characteristics of entrepreneurs and companies were related to students' basic information significantly at p<0.05. Particularly, after testing in each items, the results revealed that gender was significantly related to students' year and grade point average, age was significantly related to students' year, education was significantly related to grade point average and number of students that companies needed according to cooperative education, position in companies was significantly related to students' year, grade point average and number of students that companies needed according to cooperative education, type of companies was significantly related to major that companies needed students according to cooperative education, grade point average and number of students that companies needed according to cooperative education, number of employees in companies was significantly related to number of students that companies needed according to cooperative education, time period of running business was significantly related to type of universities, students' year and number of students that companies needed according to cooperative education, companies profit was significantly related to major that companies needed students according to cooperative education and number of students that companies needed according to cooperative education was significantly related to type of universities, students' year and grade point average. Consequently, hypothesis 2 is accepted.

DISCUSSION

According to in this study, the findings showed that characteristics of entrepreneurs and companies conforms to Jubplung (2009) which studied needs by companies in Suratthani Province towards graduates' characteristics in business administration program, the study found that time period of running business for companies was more than 5 years and education of entrepreneurs was bachelor’s degree, Aujirapongpan and Whannurak (2009) studied requirements concerned cooperative education and characteristics of cooperative education students in accounting program Walailak University, it was observed that education of accounting officers in companies was bachelor’s degree and number of employees in companies was less than 50 persons, Suwanno (2008) studied satisfaction of employers towards Maejo University at Chumphon’s graduates between 2002 to 2006, the finding showed that education of employers was bachelor’s degree, position in companies was head or supervisor and number of employees in companies was less than 50 persons.

Students’ basic information conforms to Aujirapongpan and Whannurak (2009) which studied requirements concerned cooperative education and characteristics of cooperative education students in accounting program Walailak University, the findings showed that most companies needed fourth year students, Visuthikorn (2006) analyzed needs trend for graduates in management of Suranaree University of Technology, the study found that most companies needed graduates in terms of accounting, marketing and human resource management, respectively.

Students’ characteristics needed by companies according to cooperative education conforms to Jubplung (2009) which studied needs by companies in Suratthani Province towards graduates’ characteristics in business administration program, the finding showed that students’ characteristics which most companies needed from students the most were morality and personality, Lormahamongkol (2007) investigated desired characteristics
of training students by travel agency, the finding showed that students’ characteristics which most companies needed from students the most were attitude, habit and knowledge, respectively.

The differentiation comparison between characteristics of entrepreneurs and companies with students’ characteristics needed by companies according to cooperative education conforms to Aujirapongpan and Whannurak (2009) which studied requirements concerned cooperative education and characteristics of cooperative education students in accounting program Walailak University, the findings showed that the differentiation comparison between general characteristics of accounting companies with desirable students’ characteristics of accounting program had significantly difference at p<0.05.

Finally, the relationship between characteristics of entrepreneurs and companies with students’ basic information conforms to Aujirapongpan and Whannurak (2009) which studied requirements concerned cooperative education and characteristics of cooperative education students in accounting program Walailak University, the findings showed that the relationship between general characteristics of accounting companies with format of cooperative education had significantly relationship at p<0.05.

CONCLUSION

Cooperative education plays an important role in Thailand’s educational system development. It is a matter of concern for cooperation and participation among universities, companies and students. Particularly, universities should follow the values of the Thai Qualifications Framework for Higher Education (TQF) in terms of morality and ethics, knowledge, intellectual, interpersonal and responsibility and numbering analysis, communication and information technology in order to help students before engaging to work according to cooperative education with companies. Besides, companies should provide a database of students’ characteristics needed by companies according to cooperative education to universities in order to improve and generate readiness for students. However, the practical experience gained through cooperative education can contribute to students’ self-improvement in terms of the Thai Qualifications Framework for Higher Education (TQF) profitably and efficiently.

RECOMMENDATIONS

Based upon the results of this study are useful and important for universities, companies and students. The recommendations are drawn as follows:

For universities

Universities should focus on what companies are looking for in students and to use the results of students’ characteristics needed by companies according to cooperative education for applying to improve the curricula for students in order to respond followed by companies requirements. The findings indicated that students’ characteristics which most companies needed from students the most were morality and ethics. Therefore, universities should teach skill, preparation and knowledge of morality and ethics to students with training in order to effect on students directly and they will have readiness before working according to cooperative education with companies.

For companies

Companies should work together with universities to have an efficient in cooperative education management. Particularly, companies should inform to the universities that what positions are available for students every semester in order to let students who are interested and can be prepared several documents such as application form, resume, autobiography, recommendation letter from their advisors. Finally, universities could send the applicant’s information to companies for further evaluation to receive students for working according cooperative education
For students
Students should learn the basic information concerning cooperative education in order to have readiness and they can find the best appropriate companies and have a better performance for their working with companies after graduating. However, companies are looking for students that are willing to work and know how to apply their knowledge for working inside companies.

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REFERENCES


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Islamabad- PAKISTAN

ABSTRACT

In a country like Pakistan (and similar developing countries) where teachers are not represented in decision making bodies and perception of the profession itself is low; a broader question which needs to be deliberated upon is how is it possible ‘to produce’ teachers/teacher-educators who ‘think they are able’ to make a difference? A case study of a Masters in Education program at one of the private universities of Pakistan was carried out in order to explore the link between teacher education and their level of self-efficacy. One would expect that with the systematic exploration of school improvement related issues and concerns, the graduates understanding of what makes teachers/teacher educators more efficacious will grow and so will their faith in themselves. With this premise the specific purpose of the research was to assess whether the Masters in Education program at the university had changed the perceptions of teacher graduates about their own ability to effect educational change? The data for the study was collected at two points in time, i.e., entry into the program (Time 1) and exit (Time 2) and consisted of responses to the six subscales of Bandura’s teachers’ self efficacy scale. The pre-test provided a base against which the post-test scores were measured. The findings suggest that the two year Masters in Education program at the university did bring about changes in the perceptions of graduating students about their efficacy as change agents. Implications of the findings for teacher education are also discussed.

Key Words: Teacher education, self efficacy, change agent, Pakistan.

INTRODUCTION

Albert Bandura (1977), a psychologist who introduced the concept of self-efficacy defines it as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (1997, p.3). Since then a large body of research literature has emerged in which this notion of self-efficacy has been conceptually applied to and empirically tested on teachers whose daily lives revolve around organizing activities and executing tasks related to specifically improving education standards by promoting student learning (Agbaria, 2013; Maddux, 2011; Tschannen-Moran and McMaster, 2009; Dellinger, Bobbett, Olivier and Eliett. 2008; Ross & Bruce, 2007; Brinkerhoff , 2006; Hoya and Sperob, 2005; Ramey-Gassert, Shroyer and Staver. 1996; Evans and Tribble, 1986 just to name a few). The concept of self efficacy has its origin in the social cognitive theory which proposes that human actions are determined by interaction among three types of factors; cognitive (or personal factors), environmental factors and behavioral factors which are made-up of clusters of constructs. Self efficacy along-with two other constructs like skills and practice, is part of behavioral factors. Cognitive factors (also known as ‘personal factors’) include knowledge, expectations and attitudes whereas social norms, access in community and influence on others make up the environmental factors (Bandura, 2005, 1997, 1982). All these factors and their dimensions are interlinked and jointly determine...
human behavior; nevertheless, the primary focus of the conceptual discussion and empirical evidence in the present research is on teachers’ self efficacy which is defined as; “beliefs about the ability to coordinate skills and abilities to attain desired goals in particular domains and circumstances” (Maddux, 2011: 60). The rationale for delimiting the research to teachers’ self efficacy lies in the background of the current study.

Study context
The study is conducted in Pakistan where the government has taken many initiatives for improving the quality of teachers and teacher education (pre- and in-service). The seminal work of Bandura (1977; 1997) recognizes teachers’ ability to effect educational change at various levels but do teachers also ‘think’ they are able as the power of their beliefs in their own ability to effect change is more important than the knowledge of simply having this ability. Hence, teachers’ self efficacy beliefs gain centrality in the process of bringing effective change in the field of education as desired by the government and people of Pakistan. Moreover, teachers’ self efficacy beliefs are also linked to the professional preparation of teachers at all levels (Santiago, 2012; Wong & Wong, 2009; Wenner. 2001; Pigg & Marso, 1994; Martin, 1989). This implies that teacher education programs can be directed to affect the beliefs of teachers about their own abilities to bring about changes in education (Poulou, 2007; Chan, 2005; Ashton, 1984). In a country like Pakistan where teachers are not represented in decision making bodies (Mudhani, 2007), have low status in the society (Kirk, 2007) and feel generally powerless (Warwick and Reimers, 1995) is it possible ‘to produce’ teachers/teacher-educators who think they are able to bring about changes in schools? The present research is an attempt to answer this broader question by exploring the relationship between teachers’ professional development and teachers’ self efficacy.

METHODOLOGY

Purpose
The focus of the study is the self efficacy ratings of students enrolled in Masters in Education degree program at one of the private universities of Pakistan at two points in time; entry into the program (Time 1) and after two years at the end of the program (Time 2). The purpose was to gauge the relationship between in-service teacher education and teachers’ beliefs in their abilities to improve educational standards. The degree program aims to prepare teacher-educators by enhancing their pedagogical content knowledge and formal and informal leadership skills to act as change agents in their own contexts. The courses thus offered are designed to advance skills related to classroom instruction and management, engaging and motivating students and other stakeholders, reflective teaching and effective school management. Therefore, it is reasonable to expect that these teachers will have strong positive beliefs about their own abilities to use the acquired new knowledge, disposition and skills for enhancing their students’ learning through improved practices. The latter will improve not only their schools but will also raise the standard of overall education in Pakistan. With this premise the specific purpose of the research was to assess whether the Masters in Education program at the university had changed the beliefs of teacher graduates about their own ability to effect educational change? Given the nature of the program, the specific hypothesis was that the graduates would have higher levels of efficacy compared to their baseline scores at the time of entry into the program.

Participants
Participants were the entire cohort of in-service teachers /teacher educators enrolled in a two-year Masters in Education degree program at a private university in Pakistan 2009. They were informed about the purpose and procedure of the research through an information letter via e-mail. The letter also mentioned that their participation was voluntary and they could withdraw without negative consequences besides assuring them confidentiality and anonymity. The following table presents their demographic profile.
Table 1: Demographic Profile of Respondents

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>24</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td>Location</td>
<td>Rural</td>
<td>15</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>25</td>
<td>62</td>
</tr>
<tr>
<td>System</td>
<td>government</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Community Schools</td>
<td>28</td>
<td>70</td>
</tr>
<tr>
<td>Age (years)</td>
<td>25 - 30</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>31-35</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>36-40</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Experience</td>
<td>1-5</td>
<td>15</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>19</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>11-15</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>&gt;16</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Grade level taught</td>
<td>Primary</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Both</td>
<td>15</td>
<td>38</td>
</tr>
<tr>
<td>Academic qualification</td>
<td>Bachelors</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Masters</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>Professional degree</td>
<td>No certification</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Teaching Certificate</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Bachelors Edu (B-Ed)</td>
<td>15</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Masters Edu (M-Ed)</td>
<td>16</td>
<td>40</td>
</tr>
</tbody>
</table>

**Research Design**

The study was conducted through one group Pretest-Posttest design methodology with an intact group (Erden, 2009), of 40 in-service teacher educators. They were followed through two years of their program. At the conclusion of the study the participants had evaluated their self efficacy at two points in time\(^1\), i.e., start of the first year (pre), and at the end of the program (post).

**Research Instrument**

Bandura’s ‘Teacher self-efficacy scale’ was used. The instrument consists of 30 items divided into six\(^2\) subscales corresponding to areas important for school improvement. These areas, explicitly or implicitly, are embedded in the content and methodology of the program and should be visible in these aspects of self efficacy which include:

1. efficacy to influence decision making (EID)
2. instructional self-efficacy (ISE)
3. disciplinary self-efficacy (DSE)
4. efficacy to enlist parental involvement (EEPI)
5. efficacy to enlist community involvement (EECI)
6. efficacy to create positive school climate (ECPSC)

\(^1\) Following Martin (1989), a mid point was also added to have two post-test measurements to verify the developmental stages of teachers’ self efficacy. It is not reported here due to space limitation.

\(^2\) The ‘efficacy to influence school resources’ was also a subscale with only one item which was merged with the Instructional self efficacy sub-scale.
Test of internal consistency was conducted for the scale and subscales which is presented in Table 2. The range of Cronbach Alpha values is similar to those reported by other researchers (Page, Pendergraft and Wilson, 2014:35-37; Celiki, 2013: 58; Lam, 2012:3-4; Skaalvik and Skaalvik, 2010:1061).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha (CA)</th>
<th>CA based on Standardized items</th>
<th># of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>.940</td>
<td>.942</td>
<td>30</td>
</tr>
<tr>
<td>EID</td>
<td>.859</td>
<td>.859</td>
<td>2</td>
</tr>
<tr>
<td>ISE</td>
<td>.815</td>
<td>.841</td>
<td>8</td>
</tr>
<tr>
<td>DSE</td>
<td>694</td>
<td>.717</td>
<td>3</td>
</tr>
<tr>
<td>EEPI</td>
<td>.820</td>
<td>.821</td>
<td>3</td>
</tr>
<tr>
<td>EECL</td>
<td>.826</td>
<td>.833</td>
<td>4</td>
</tr>
<tr>
<td>ECPSC</td>
<td>.859</td>
<td>.863</td>
<td>8</td>
</tr>
</tbody>
</table>

Procedure
Self-efficacy Scale was administered during regular classes and took 20-30 minutes for filling in the questionnaires. Students put them in envelopes, wrote their ID numbers and sealed them. Then one of the staff members assigned pre-prepared codes to these envelopes randomly. She paired the codes with student IDs, wrote the codes on questionnaires and retained the envelopes. Same codes were used at Time 2. The researcher worked with coded questionnaires to protect the identity of respondents.

Analysis
The study is a population based research; therefore, descriptive statistics like Means and SDs are used for describing the difference in self efficacy scores by sub-scales at Entry (Time 1) and Exit (Time 2) rather than inferential statistics. Readers are cautioned not to generalize the results beyond the sample from only one in-service teacher education program. Further, as no control group or random selection of participants was carried out, therefore, no claim to have established cause-effect relationship between in-service education program and teacher self-efficacy is made.

RESULTS
The specific purpose of the research was to assess changes in the self efficacy scores of teacher graduates over the two-year Masters in Education program. All calculations are based on total scores as with limited sample size average scores can produce misleading findings. The results indicate that self efficacy scores of course participants were higher at Time 2 (M2 = 207.11, SD2 =24.42 and M1= 184.08, SD1 =32.91) and the correlation between Time 1 and Time 2 scores (r = .358 \(^3\)) was statistically significant (p<.05) showing a ‘Moderate’ \(^3\) positive relationship (Mann, 2013). The difference reflected change in teachers’ self efficacy and the path of the relationship was also in the expected direction. In order to explore differences within the sample, teachers were divided into three groups based on their total scores. Group Means and SDs were used for this purpose. For teachers with low self efficacy at Time 1 (LSE1), the score was arrived at by subtracting standard deviation from the arithmetic mean (184 -33 = 151). By adding standard deviation to the arithmetic mean, scores for high self efficacy (HSE1), were calculated (184 +33 = 217). Teachers with scores between 151 and 217 were considered moderately self efficacious. For Time 2 M and SD were (207 +, - 24) and the boundaries were, < 183, between 183 & 231, and > 231 for low, moderate and high levels respectively.

\(^3\) For the present study, if the coefficient is < 0.3 correlation is ‘weak’; => 0.3 but < 0.59 is ‘moderate’, 0.6 -0.79 is ‘strong’ and > 0.8 is ‘very strong’ (Mann, 2013).
Table 3: Levels of Teachers’ Self Efficacy

<table>
<thead>
<tr>
<th>SE Levels</th>
<th>Time 1 Frequency</th>
<th>Percent</th>
<th>Time 2 Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low SE</td>
<td>10</td>
<td>25%</td>
<td>*4</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate SE</td>
<td>20</td>
<td>50%</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>High SE</td>
<td>10</td>
<td>25%</td>
<td>16</td>
<td>40%</td>
</tr>
</tbody>
</table>

- Results for Time 2 did not have scores for Low SE. However, 4 cases were lost during the study period reducing N to 36 for Time 2.

The results clearly show an upward movement in the levels of teachers self efficacy scores from Time 1 to Time 2. Similar trend was shown by the overall differences by subscales. The highest difference between the reported scores was for Instructional efficacy (7.16), closely followed by efficacy to enlist community involvement (5.13) and to create positive school climate (5.12). The lowest difference between Time 1 and Time 2 (0.53) was reported for disciplinary self-efficacy.

Table 4: Descriptive statistics for Teachers’ Self Efficacy by subscales

<table>
<thead>
<tr>
<th>Sub-scales</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>EID</td>
<td>12.25</td>
<td>3.66</td>
<td>7.00</td>
<td>18.00</td>
</tr>
<tr>
<td>ISE</td>
<td>61.15</td>
<td>8.23</td>
<td>25.00</td>
<td>79.00</td>
</tr>
<tr>
<td>DSE</td>
<td>20.58</td>
<td>3.72</td>
<td>9.00</td>
<td>27.00</td>
</tr>
<tr>
<td>EEPI</td>
<td>19.08</td>
<td>3.49</td>
<td>8.00</td>
<td>27.00</td>
</tr>
<tr>
<td>EEICI</td>
<td>18.48</td>
<td>6.47</td>
<td>5.00</td>
<td>30.00</td>
</tr>
<tr>
<td>ECPSC</td>
<td>52.55</td>
<td>10.06</td>
<td>28.00</td>
<td>70.00</td>
</tr>
</tbody>
</table>

- N is 40 and 36 for Time 1 and Time 2 respectively.

Correlation analysis of subscales by time revealed significant relationships for efficacy to influence decision making, efficacy to enlist parental involvement, efficacy to enlist community involvement and efficacy to create positive school climate with correlation coefficients ranging between ‘moderate’ to ‘strong’ (r =.358***), (r =.642***) and (r =.397**) respectively. Analysis of correlation coefficients also revealed inter-dimensional connections of subscales. For instance, efficacy to influence decision making with instructional self-efficacy and efficacy to enlist parental and community involvement and to create positive school climate remained significant at both Time 1 and Time 2 with the values of r1 and r2 (.528***, .511**), (.508***, ,517***), (.474*** . 408*), (.536** . 460**) respectively. However, the coefficients were weaker for Time 2 with one exception (parental involvement). In the same way, was instructional self-efficacy with efficacy to enlist parental and community involvement and to create positive school climate with correlation coefficients ranging from (.717**.551**),(.469**.452**) and (.584**.492**) with weaker coefficients for Time 2. Likewise, disciplinary self-efficacy with efficacy to enlist parental and community involvement with coefficients (.622**.407**), (.455**.455**) remained significant with a weaker coefficient for parental and unchanged for community involvement at Time 2 respectively. Also, efficacy to enlist parental involvement with efficacy to enlist community involvement and to create positive school climate remained significant with coefficients of (.535**.528**) and (.706**.536**) respectively with weaker coefficients at Time 2. Furthermore, efficacy to enlist community involvement with efficacy to create positive school climate had coefficients of (.745**.665***) for Time 1 and Time 2 showing ‘strong’ correlation.
Table 5: Correlation Matrix of Teachers self efficacy

<table>
<thead>
<tr>
<th></th>
<th>EID1</th>
<th>EID2</th>
<th>ISE2</th>
<th>ISE1</th>
<th>DSE1</th>
<th>DSE2</th>
<th>EEPI2</th>
<th>EEPI1</th>
<th>EECI1</th>
<th>EECI2</th>
<th>ECPSC2</th>
</tr>
</thead>
<tbody>
<tr>
<td>EID2</td>
<td>.357*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISE2</td>
<td>.081</td>
<td>.511**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISE1</td>
<td>.528**</td>
<td>.011</td>
<td>.049</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSE1</td>
<td>.349</td>
<td>.084</td>
<td>.201</td>
<td>.603**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSE2</td>
<td>.136</td>
<td>.283</td>
<td>.328</td>
<td>.030</td>
<td>.080</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEPI2</td>
<td>.304</td>
<td>.517**</td>
<td>.551**</td>
<td>.056</td>
<td>-.055</td>
<td>.407*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EEPI1</td>
<td>.508**</td>
<td>.089</td>
<td>.286</td>
<td>.717**</td>
<td>.622**</td>
<td>.321</td>
<td>.438**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EECI1</td>
<td>.474**</td>
<td>.262</td>
<td>.351**</td>
<td>.469**</td>
<td>.455**</td>
<td>.351**</td>
<td>.279</td>
<td>.536**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EECI2</td>
<td>.289</td>
<td>.408**</td>
<td>.452**</td>
<td>-.024</td>
<td>.089</td>
<td>.455**</td>
<td>.528**</td>
<td>.231</td>
<td>.642**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECPSC2</td>
<td>.148</td>
<td>.460**</td>
<td>.492**</td>
<td>-.022</td>
<td>.168</td>
<td>.293</td>
<td>.536**</td>
<td>.230</td>
<td>.371**</td>
<td>.665**</td>
<td></td>
</tr>
<tr>
<td>ECPSC1</td>
<td>.536**</td>
<td>.327</td>
<td>.398**</td>
<td>.584**</td>
<td>.610**</td>
<td>.035</td>
<td>.297</td>
<td>.706**</td>
<td>.745**</td>
<td>.354**</td>
<td>.397*</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION

The results of the current research study indicate a positive moderate relationship between teachers’ professional development and teachers' self efficacy for the graduates of the two year Masters in Education program at this particular university. This finding reinforces the established link identified by number of research studies cited earlier. Given the limitations of the small sample size and convenient sampling technique, no attempt is made to generalize the results beyond the present sample; however, the policy implications of the study can be discussed with reference to teachers’ education which is one of the key focuses of the current National Education Policy in Pakistan (GoP, 2009). One of the basic premises of the policy is that “improving education quality depends on the teachers’ quality” (Mushtaq and Kayani, 2013:154) and self efficacy as a “personal resource factor” (Schwarzer and Hallum, 2008:152) can be considered one dimension of teachers’ quality (Lee, Patterson and Vega, 2011).

The existence of positive relationship between teacher-education and teachers’ self-efficacy suggests that teacher education can play an important role in building teachers’ beliefs in their own capabilities to be change agents. Bandura (1997) suggests four experiential sources that shape such beliefs; these are (i) performance or mastery experiences, (ii) vicarious experiences, (iii) verbal or social persuasion, and (iv) physiological and emotional states (Oh, 2012). These are “the sources teachers tap when making judgments about their capability” (Tschanen-Moran and Hoy, 2007: p. 953). The findings of research studies of these sources are mixed; Mahajna (2014), Oh (2012) and Poulou (2007) report positive relationship between the sources and teachers’ self efficacy; O’Neill and Stephenson (2012) find partial whereas Moulding, Stewart and Dunmeyer (2014) report no support for the relationship respectively. The research for the present study did not test the relationship between teachers’ self efficacy and its sources but the pedagogy for the in-service teacher education program was based on constructivist philosophy of scaffolding (Wang and Hannafin, 2009). Using experiential learning, the program extended participant’s performance or mastery experiences; therefore, one can associate the change between Time 1and Time 2 to the teaching practicum and microteaching opportunities which were part of the program. Similarly, participants also performed other tasks like writing research based reviews and papers along-with writing a field research-based dissertation on real life issues related to teaching and learning. For vicarious or social experiences, participants had ample opportunities for observational learning as they watched their educators modeling teaching practices, assessment methodologies and handling of critical incidents over an extended period of two years. They also observed their own peers and were able to compare themselves with each other. Their verbal or social persuasion came from various sources; they got feedback from their educators during lesson planning, school visits, coursework and related assignments and practical experimentation during classroom teaching. During school based teaching they received feedback from their students, colleagues and supervisors. For their dissertations they received feedback from their supervisors and internal and external examiners as well as their peers at their
thesis defense. As far as the contribution of psychological state of participants is concerned, participants self doubts regarding their ability to perform research related tasks and overcome language and communication barriers are documented elsewhere (Qureshi, 2014; Qureshi and Vazir, 2013; Vazir and Qureshi, 2011). The joint contribution of all these sources is reflected in levels of efficacy overtime; low self efficacy teachers were 10% of the group at time 2 vs. 25% at Time 1 whereas teachers with high self-efficacy were 40% of the group at time 2 vs. 25% before. Despite the limitations of sample size and convenient sampling technique, these changes and associations remain significant and highlight the importance of pedagogical tools and contents of curriculum for teachers and teacher educators; therefore, understanding the nature and sources of teachers’ self efficacy has theoretical and practical relevance for both practitioners and policy makers related to teacher education in Pakistan.

CONCLUSION

Self-efficacy is an important attribute of human agency. It gains even more prominence in the context of teachers because how they perceive, interpret and act while performing their daily tasks, inside and outside their classrooms, can enhance or restrict life chances of not only their own but of their students too. The findings of this study confirm that teacher education and teachers’ beliefs in their own abilities to opt for paths of action that they believe will help attain their desired goal (s) are related. Although the overall correlation displayed is moderate the policy implications are strong against the backdrop of a large body of knowledge providing empirical evidence of the relationship. The study at this point makes an important addition to the body of knowledge on Pakistan for two reasons; (i) few research studies have been conducted on Pakistan teachers’ self efficacy (Shaukat, and Iqbal, 2012; Sarwar, Muhammad and Muhammad, 2010; Hanif, 2011; Rizvi and Elliot, 2007; 2005; Rizvi, 2010), whereas on sources of its development none, to the best of researcher’s knowledge, is available; and (ii) Pakistan government is making concerted efforts for improving the quality of education for learners in general and for teachers and teacher educators in particular. In view of the centrality of teacher education for preparation (pre-service) and continuation of life-long professional development (in-service) of teachers, the National Education Policy of Pakistan has created National Standards of competencies for teachers. Some of these competencies are reflected in sub-categories of the Teacher Efficacy Scale, used for the study, e.g., do Pakistani teachers think they ‘can’ forge home-school partnership? Thus boosting teachers self efficacy into thinking they ‘can’ involve communities and parents into creating conducive environments for student learning becomes crucial for teacher education’s pedagogies and curriculum.

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Acknowledgement: I am thankful to the participants of this study who shared their knowledge and time for making this study possible.

An abridged version of the present study was presented at the international Education Conference on ‘Teacher Recruitment, Preparation, and Policy’ on August 20-21, 2013 at Karachi University, Pakistan. I am also grateful to the audience who raised critical questions and made constructive comments which helped in reviewing the study for improvement.

BIODATA AND CONTACT ADDRESS OF THE AUTHOR

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PRACTICES AND INTEGRATION OF ICT AT PRIVATE HIGHER SECONDARY LEVEL IN PAKISTAN

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ABSTRACT

The current exploratory study investigates the acquaintance of teachers’ information in communication technology (henceforth, ICT) and its integration in teaching-learning process at private higher secondary level in Pakistan. The study adopts a quantitative technique and a variety of variables pertaining to the familiarity with computers in teaching-learning were examined. Subsequently, using a purposive sampling, 200 questionnaires were disseminated to the teachers. Total 169 instruments were returned and 133 were keyed into SPSS after filtering and cleaning the data. Descriptive means, percentages, crosstabs, and rank order were computed to report findings. The study revealed that 75% teachers had been formally trained for ICT, 67% teachers had access to computers and 53% had access to internet at their institution as well as home. Results show that ‘use of Email’, ‘internet browsing’, and ‘word-processing’ were most familiar tools. On the other hand, ‘collection of teaching/reference material’, ‘preparing papers’, and ‘teaching materials’ were being used for teaching purposes.

Key Words: ICT, teaching-learning process, higher secondary level, accessibility of internet, teacher training.

INTRODUCTION

For imparting Intermediate level education in different disciplines, it is a general impression that private sector colleges have a better control on the academic activities over the public sector/government run colleges in the city of Karachi. It is also a general impression that the teachers teaching various subjects at private colleges in Karachi are better trained and for this reason the results in these colleges are better than those of public sector colleges. The private colleges, especially those who bear a good reputation in terms of pass percentage either preferably induct Information Communication Technology (henceforth, ICT) trained teachers or, invest in getting their teachers trained so as to make them better equipped in imparting the Board of Intermediate Education Karachi (henceforth, BIEK) curriculum.

The strategic vision as defined in the National Education Policy (2009) Pakistan clearly states that the “Faculty training in pedagogical, communication and ICT skills is required at all levels”. The policy also acknowledge that private sector has been putting up efforts in bridging the gap in certain areas of education including use of Information and Communications Technology. Moreover, the policy acknowledges the need for pre-service and in-service training of ICT. Intermediate colleges are the ultimate feeder institutions for institutions of higher studies in the city of Karachi. A good product of these colleges would result in a better intake for universities/degree awarding institutions and the student thus passing out would be more productive. Whereas government spends negligible portion of its budget on education, there are greater expectations from private colleges since their management invests more for being competitive in the choice of institutions among its
potential students. Although the use of ICT has been at an increase over the past couple of years, it is generally considered that the computer labs are mostly kept as a showpiece rather than being exploited to its true potential. Moreover, the use of ICT in teaching-learning process is more bent towards teaching of science related subjects and not other subjects e.g. Islamiat, Pakistan Studies, Urdu etc.

REVIEW OF RELATED LITERATURE

Why ICT in Teaching and Learning?
Kareem and D’souza (2012) mentioned that although advancements have been made in both information as well as communications technology and, that computers today are being used not only for teaching in classrooms but are also being used in administration, library, students’ record keeping, guidance and counseling of educational institutions and even for in-service teacher training, the overall lack of in-depth knowledge, variation in the availability of type of technology available and improper usage of technology, the true potential of ICT is not exploited. They also emphasized on the role of school leadership for providing training opportunities and provision of infrastructure for better utilization of ICT.

Tezci (2010) regards ICT as a good alternative to teacher-centered classrooms and accepts that where ICT has brought changes in learning style of learners, it has also brought changes in teaching style of teachers. He suggests that ICT can be used for almost all the subjects taught and the entire curriculum and its effective integration in the classroom activity can enrich the lecture, increase students’ participation and shift the focus of classroom activity from teacher to students making it more interactive. He believes that technology itself is of no use rather it is the effective use of technology which makes value in the teaching-learning process and that teacher is the key factor in this process. Similarly, Smeets, Gennip and Rens (2009) point out that at the time when ICT tools were not available, the focus was mainly on transfer of knowledge rather than construction of knowledge but with inclusion of ICT the scenario is reversed and that focus has now been shifted from transfer of knowledge to construction of knowledge.

Integration of ICT in Classroom
Downes suggest that since integration of ICT in education has a great impact on classroom environment, the process of integration is complex and thus be seen in four stages/levels. The first level is to introduce ICT as an additional subject in the school curriculum without making any change in the teaching methodology of the other subjects being taught. The second level would be to introduce ICT in teachers’ day to day tasks other than classroom teaching. The third level would be to include ICT in classroom teaching so that both teachers and students know as to what and how to teach and learn. After when these levels are achieved, the fourth one would be the level where the ICT would be integrated at the systems level making an impact on the overall organization of the school (as cited in Yousuf & Dhamani, 2008).

Gal and Greitz (as cited in Buda, 2010) point out that integrating ICT in classroom should be looked at from different point of views, an important one is the provision of ICT equipment and availability of right environment and infra structure. Buda (2010) highlights the importance of attitudes of teachers towards use of ICT and their own willingness as mere provision of ICT equipment and infrastructure will not help. He adds that whereas teachers are not supposed to be expert of the technology, they must at least know the relevance of ICT with the subject they teach as according to him, the pedagogy and methodology varies from subject being taught and the teacher’s own perception about how much ICT be included for teaching of that subject.

Challenges in Integrating ICT in Classroom
Alazam, Bakar, Hamah and Asmiran (2012a) analysed various studies to conclude that use of ICT in classroom is a dynamic process and that it depends on various factors which include teachers’ willingness, their attitudes, support from administration, availability of appropriate hardware, software, allied equipment and infrastructure. Teachers’ qualifications, level and type of ICT training provided to teachers, their gender, age and teaching experience with ICT. Alazam et al. (2012a) pointed out that whether being taught as a separate subject or integrated directly in classroom teaching of different subjects, ICT has become an important
component of education in various countries of the world as it enhances students’ motivation level in understanding difficult topics of various subjects which are made easy to understand through use of ICT.

Almakani and Williams (2012) pointed out various factors of teachers e.g. lack of competence and confidence, negative attitudes and institutional/administrative factors e.g. lack of time, efficient training, local technical support and leadership as important among intrinsic factors as barriers in implementing a good ICT strategy. Improper planning, lack of funding and local culture is among major extrinsic factors which hinders ICT in classroom teaching.

**Teachers’ Training in ICT**

Oguzor (2011) is of the opinion that only a few students like the traditional way of classroom teaching and that majority of students prefer to learn using innovative ways. He adds that the traditional classroom teaching methods may overlook essential factors in the process of learning. He further adds that if used properly, computers can prove to be tremendous teaching resource but at the same time he admits that no matter how effective computers are, they can never replace teachers inside the classroom. He therefore suggests that in order to use the computers in an efficient way, teachers must first learn how to use software already available and in the mean while they must also learn how to customize software for their specific teaching needs. He further suggests that software being used should be customized and rightly chosen for the prescribed curriculum so that it could compensate for the teachers’ weaknesses in certain areas and that it could standardize the teaching methodology in a school.

**Administrative and Technical Support**

It is seen that only proper training is not sufficient for proper integration of ICT in classrooms until teachers are provided with the right hardware, software and technical support. Bauer and Kenton (2005) found that even the teachers who are good in using computers do not use ICT in their classrooms on a regular basis. One of the main reason pointed out for this was that teachers needed extra time for class preparation. Lack of suitable software and technical assistance and out dated hardware were found among other reasons taken as barriers for using ICT in classrooms. Almekhlafi and Almeqdadi (2010) are of the opinion that non-supportive administration, lack of ample technical support and non availability of computers inside the classrooms are among the major hindrances in integration of ICT in classrooms.

**Teachers’ Attitude and their Use of ICT**

Tezci (2010) is of the opinion that it is not just the deployment of equipment in the classroom purchase of software, and teacher training, rather the effective use of ICT has a lot to do with teachers’ attitude towards using ICT in teaching-learning process. He further adds that the computer hardware, software and allied equipment itself has no value for education until they are used in an effective, efficient and innovative way. Tondeur, Van Braak and Valcke (2007) mention that teachers’ views about whether or not the teachers use ICT mainly depend upon their attitudes, in addition to other factors e.g. their level of information and experience with ICT and their knowledge on how to utilize their ICT knowledge in their teaching process (as cited in Tezci, 2010).

**Gender and other Differences**

Morley (2010) found that there was no substantial difference in the use of ICT while using in the classroom, however, he hints that there is a slightly lesser tendency among male teachers to use computers in classroom than females. Alazam, Bakar, Hamzah, and Asmiran (2012b) maintain the same, but they do point out that gender does make some impact on the teachers’ readiness towards use of ICT in teaching but their study could not find the effect of teachers’ educational background on their readiness for using computers in classroom teaching. Likewise, Elsaadani (2012) in his study could not find any significant relationship between the gender of the teachers and their attitude towards making use of ICT in classroom teaching.
Use of ICT and Students’ Achievement
Chandra and Lloyed (2008) in their study found that use of ICT can increase students’ academic achievements and performance. They however added that there can be different opinions about the same in different settings. Youssef and Dhamani (2008) are of the opinion that ICT can make a good impact on the process of teaching learning as it provides many options for teachers and students. They also endorsed that there are different views about the relation between the use of ICT and students’ achievements. Aristovnik (2012) found that the ICT has varied impact on academic achievements, concluding that most of the European countries have a great potential for increasing academic achievements and outcomes through better and efficient use of ICT in teaching learning process.

STATEMENT OF THE PROBLEM
ICT is being used in teaching-learning process at varied levels. Due to limited training, unavailability of computers and internet and/or lack of training/motivation among teachers, the students fail to receive the ultimate benefits of use of ICT in the teaching-learning process. Whereas the administration generally attribute this problem to the lack of interest and inactive attitude of teachers, teachers attribute the same to lack of availability/accessibility of right equipment and training. Syllabus of BIEK and textbooks which have not been revised for decades also do not encourage the use of ICT in classrooms.

Objectives Of The Study
The objectives of the study were to investigate:
1. The accessibility of computers and internet of private higher secondary school teachers.
2. ii. The knowledge and familiarity of computer programs and tools by private higher secondary school teachers.
3. iii. The usage of ICT in teaching and learning process by private higher secondary school teachers.
4. iv. The usage of computers in teaching specific subjects by private higher secondary school teachers.
5. v. The usage of internet in teaching and learning process by private higher secondary school teachers.

Research Methodology And Sampling Technique
The study employs a descriptive survey design. The plan of study involves collection of data about level of knowledge about ICT and its use in teaching-learning process by teachers of private colleges of Karachi. All teachers of private colleges of Karachi city were taken as a target population. In this context, purposive sampling was assumed fit to investigate the phenomena. There were total 133 teachers of different subjects who participated in this study. All teachers i.e 133 of 119 private colleges were affiliated with the Board of Intermediate Education Karachi situated in the city of Karachi. Intermediate colleges having good reputation both in terms of discipline and top academic performance in Board were selected for optimal results. Teachers working in colleges having less than 50% pass percentage were not included in this study. Moreover, visiting faculty members were also excluded from the study. The colleges were so selected as to cover different areas of the city so as to get an even distribution of respondents.

Research Instrument And Reliability
For the current study, research instrument was adopted from Kareem and D’Souza (2012). There were total 57 items in the questionnaire, however, 10 items were deleted for the conformity in a regional Pakistani context. Consequently, total 47 items were taken and was used to answer research questions. Reliability is the quality of the instrument to produce the same and consistent results when the instrument is administered more than once. In this study, the reliability for the instrument was found out by calculating Cronbach Alpha using SPSS over pilot data of 30 records. Cronbach Alpha’s value was found significant i.e. 0.964 which is considered acceptable as suggested by (Black, 1999; George & Mallery, 2003; Nunnaly, 1978; & Riazi, 1999).
Table 1: Reliability Analysis of Pilot Study

<table>
<thead>
<tr>
<th>Sr. #</th>
<th>Variables</th>
<th>No. of Items</th>
<th>Cronbach's Coefficient Alpha</th>
<th>Overall Reliability Statistics (Cronbach Alpha) for 47 Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Familiarity with Computers and Tools</td>
<td>22</td>
<td>0.950</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Use of Computers in Teaching-Learning Process</td>
<td>16</td>
<td>0.932</td>
<td>0.964</td>
</tr>
<tr>
<td>3.</td>
<td>Use of Internet in Teaching-Learning Process</td>
<td>09</td>
<td>0.848</td>
<td></td>
</tr>
</tbody>
</table>

Ethical Consideration
As recommended by Polonsky and Waller (2010), the letter of consent was sent to the respective principals of the colleges from where the data was collected in order to get their consent before visiting their institutions. Before the start of survey, the respondents were informed in person about the purpose of study and the anonymity of data. The participation in the survey was voluntary.

Research Procedure And Data Analysis
The research involved purposive sampling as it involved judgemental sampling. A total of 200 questionnaires were sent to selected private colleges of Karachi having good record in terms of Board results for the past five years. The researcher himself briefed the respective principals about the purpose/intended outcomes of the research. The data was piloted on first 30 forms in order to find out the reliability of the instrument. Out of 200 questionnaires sent, a total of 136 were received back among 6 forms were rejected. The researcher computed descriptive statistics, means, frequency, percentages, crosstabs, and rank to report findings by using SPSS version 20.

KEY FINDINGS

Table 2: Demographic factors of Higher Secondary Teachers

<table>
<thead>
<tr>
<th>Demographics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>80</td>
</tr>
<tr>
<td>Age</td>
<td>24-27 years</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>28-31 years</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>32-35 years</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>36 years and above</td>
<td>61</td>
</tr>
<tr>
<td>Teaching Experience</td>
<td>Less than 1 Year</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1-2 years</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2-5 years</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>5-8 years</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>8-10 years</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>More than 10 years</td>
<td>75</td>
</tr>
<tr>
<td>Access to Computer</td>
<td>Home</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>School (Office)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>School (Lab)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Other Places</td>
<td>1</td>
</tr>
</tbody>
</table>
The demographic data reveals that 56.4% teachers have a teaching experience of more than 10 years, which means that private colleges usually keep well experienced faculty in order to create a good reputation and better academic results. It was also found that 66.9% teachers have access to computers at more than one place and 53.4% teachers have access to internet at more than one place. It was further revealed that more than 75% of the teachers have been formally trained for using ICT in their classrooms and teaching-learning process.

Table 3 shows the mean rating of teachers’ familiarity about computers and tools on a seven point Likert scale. It is evident from the data that for items like Internet Browsing, Statistical Tools, Project Management, Simulations and Math Related Software, male teachers have a slightly higher mean in comparison to female teachers. For items like Web Page Designing, Programming, Database Management, Problem Solving Software, Tutorials and Operating a CD ROM, both male and female teachers have almost equal mean. For rest of the items, i.e. Wordprocessing, Spreadsheets, Presentation Tools, E-Mailing, Computer Games and Multimedia...
Presentations, female teachers have a higher mean rating. It is also evident from the table above that the mean rating for both the genders are close to their mean and do not have a huge disparity.

Table 4: Mean Ratings of Teachers’ Use of Computers in Teaching-Learning Process

<table>
<thead>
<tr>
<th>Sr. #</th>
<th>Use of Computers in Teaching-Learning Process</th>
<th>Male</th>
<th>Female</th>
<th>Overall Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teaching-learning for specific subjects</td>
<td>3.83</td>
<td>4.25</td>
<td>4.0</td>
</tr>
<tr>
<td>2</td>
<td>Teaching Computer skills</td>
<td>3.72</td>
<td>4.03</td>
<td>3.9</td>
</tr>
<tr>
<td>3</td>
<td>Finding/accessing information/educational materials</td>
<td>4.75</td>
<td>5.19</td>
<td>5.0</td>
</tr>
<tr>
<td>4</td>
<td>Making presentations / lectures</td>
<td>4.45</td>
<td>4.55</td>
<td>4.5</td>
</tr>
<tr>
<td>5</td>
<td>Remedial classes</td>
<td>2.98</td>
<td>3.21</td>
<td>3.1</td>
</tr>
<tr>
<td>6</td>
<td>Enrichment classes</td>
<td>3.02</td>
<td>3.45</td>
<td>3.2</td>
</tr>
<tr>
<td>7</td>
<td>Drill and practice</td>
<td>3.04</td>
<td>3.38</td>
<td>3.2</td>
</tr>
<tr>
<td>8</td>
<td>As a vital part of regular instruction</td>
<td>3.42</td>
<td>3.55</td>
<td>3.5</td>
</tr>
<tr>
<td>9</td>
<td>Preparing lessons / Lesson Plans</td>
<td>4.25</td>
<td>4.51</td>
<td>4.4</td>
</tr>
<tr>
<td>10</td>
<td>Communicating with students (Homework, Testing)</td>
<td>3.53</td>
<td>3.83</td>
<td>3.7</td>
</tr>
<tr>
<td>11</td>
<td>Communicating with other teachers</td>
<td>3.85</td>
<td>4.01</td>
<td>3.9</td>
</tr>
<tr>
<td>12</td>
<td>Communicating with parents</td>
<td>2.62</td>
<td>2.69</td>
<td>2.7</td>
</tr>
<tr>
<td>13</td>
<td>Monitoring/evaluating/record keeping</td>
<td>3.57</td>
<td>3.94</td>
<td>3.8</td>
</tr>
<tr>
<td>14</td>
<td>Preparing Reports</td>
<td>4.15</td>
<td>4.28</td>
<td>4.2</td>
</tr>
<tr>
<td>15</td>
<td>Further personal development</td>
<td>4.11</td>
<td>4.75</td>
<td>4.4</td>
</tr>
<tr>
<td>16</td>
<td>Test/Quiz</td>
<td>4.47</td>
<td>4.70</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Table 4 shows the mean ratings of Teachers’ Use of Computers in Teaching-Learning Process. It is interesting to note that Finding/Accessing Information/Educational Material is the only item which has a mean rating for male teachers is higher than that of female teachers. For items i.e. Making Presentations/Lectures and Communicating with parents, the mean rating for both the genders is equal. For all the rest of items, the mean rating for female teachers is higher.

Table 5: Mean Ratings of Teachers’ Use of Internet in Teaching-Learning Process

<table>
<thead>
<tr>
<th>Sr. #</th>
<th>Use of Internet in Teaching-Learning Process</th>
<th>Male</th>
<th>Female</th>
<th>Overall Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teaching specific lessons in various subjects</td>
<td>4.30</td>
<td>4.63</td>
<td>4.5</td>
</tr>
<tr>
<td>2</td>
<td>Making presentations/lectures</td>
<td>4.40</td>
<td>4.71</td>
<td>4.6</td>
</tr>
<tr>
<td>3</td>
<td>Preparing Lessons / Lesson Plans</td>
<td>4.08</td>
<td>4.50</td>
<td>4.3</td>
</tr>
<tr>
<td>4</td>
<td>Communicating with students</td>
<td>3.58</td>
<td>3.51</td>
<td>3.5</td>
</tr>
<tr>
<td>5</td>
<td>Communicating with teachers</td>
<td>3.64</td>
<td>3.60</td>
<td>3.6</td>
</tr>
<tr>
<td>6</td>
<td>Communicating with parents</td>
<td>2.68</td>
<td>2.66</td>
<td>2.7</td>
</tr>
<tr>
<td>7</td>
<td>Accessing and using online assessment tools</td>
<td>3.30</td>
<td>3.44</td>
<td>3.4</td>
</tr>
<tr>
<td>8</td>
<td>Preparing papers and teaching materials</td>
<td>4.58</td>
<td>5.23</td>
<td>4.9</td>
</tr>
<tr>
<td>9</td>
<td>Collecting teaching and reference material</td>
<td>4.66</td>
<td>5.44</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Table 5 shows the mean ratings of Teachers’ Use of Internet in Teaching-Learning Process. It is interesting to note that Preparing Papers and Teaching Materials is the only item for male teachers which has a mean rating higher than that of female teachers. For items i.e. Communicating with Students, Communicating with Teachers and Communicating with parents, the mean rating is the same for both male and female teachers. For rest of the items, female teachers have slightly higher mean rating on the seven point Likert scale.
Table 6: Mean Ratings of Teachers’ Familiarity with Computers and Tools in Rank Order

<table>
<thead>
<tr>
<th>Familiarity with Computers and Tools</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Browsing</td>
<td>5.18</td>
</tr>
<tr>
<td>E-Mailing</td>
<td>5.15</td>
</tr>
<tr>
<td>Presentation Tools</td>
<td>4.69</td>
</tr>
<tr>
<td>Word-Processing</td>
<td>4.68</td>
</tr>
<tr>
<td>Multimedia Presentations</td>
<td>4.30</td>
</tr>
<tr>
<td>Computer Games</td>
<td>4.17</td>
</tr>
<tr>
<td>Operating a CD Rom Device</td>
<td>4.11</td>
</tr>
<tr>
<td>Spreadsheets</td>
<td>3.89</td>
</tr>
<tr>
<td>Statistical Tools</td>
<td>3.53</td>
</tr>
<tr>
<td>Operating an Optical Scanner</td>
<td>3.47</td>
</tr>
<tr>
<td>Operating a Projection Device thru Computer</td>
<td>3.27</td>
</tr>
<tr>
<td>Tutorials</td>
<td>3.17</td>
</tr>
<tr>
<td>Graphics</td>
<td>3.13</td>
</tr>
<tr>
<td>Operating an Laseddisk Player</td>
<td>2.99</td>
</tr>
<tr>
<td>Project Management</td>
<td>2.86</td>
</tr>
<tr>
<td>Math Related Software</td>
<td>2.83</td>
</tr>
<tr>
<td>Desktop Publishing</td>
<td>2.80</td>
</tr>
<tr>
<td>Problem Solving Software</td>
<td>2.73</td>
</tr>
<tr>
<td>Database Management</td>
<td>2.70</td>
</tr>
<tr>
<td>Programming</td>
<td>2.58</td>
</tr>
<tr>
<td>Web Page Designing</td>
<td>2.58</td>
</tr>
<tr>
<td>Simulations</td>
<td>2.34</td>
</tr>
</tbody>
</table>

Table 6 shows the mean ratings of Teachers’ Familiarity with Computers and Tools in rank order. It is evident from the table that Internet Browsing, E-Mailing, Presentation Tools, Wordprocessing and Multimedia Presentations are the tools which are most widely known among teachers followed by Computer Games, Operating a CD Rom Device, Spreadsheets and other tools. However, tools like Simulations, Web Page Designing, Programming, Database Management and Problem Solving Software are among the tools which are least known to teachers at higher secondary level.

Table 7: Mean Ratings of Teachers’ Use of Computers in Teaching-Learning Process in Rank Order

<table>
<thead>
<tr>
<th>Use of Computers in Teaching-Learning Process</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding/accessing information and educational materials</td>
<td>5.02</td>
</tr>
<tr>
<td>Test/Quiz</td>
<td>4.61</td>
</tr>
<tr>
<td>Making presentations / lectures</td>
<td>4.51</td>
</tr>
<tr>
<td>Further personal development</td>
<td>4.50</td>
</tr>
<tr>
<td>Preparing lessons / Lesson Plans</td>
<td>4.41</td>
</tr>
<tr>
<td>Preparing Reports</td>
<td>4.23</td>
</tr>
<tr>
<td>Teaching-learning for specific subjects</td>
<td>4.08</td>
</tr>
<tr>
<td>Communicating with other teachers</td>
<td>3.95</td>
</tr>
<tr>
<td>Teaching Computer skills</td>
<td>3.90</td>
</tr>
<tr>
<td>Monitoring and evaluating students’ progress or keeping the track record of student’ performance</td>
<td>3.79</td>
</tr>
<tr>
<td>Communicating with students (Homework, Testing)</td>
<td>3.71</td>
</tr>
<tr>
<td>As a vital part of regular instruction</td>
<td>3.50</td>
</tr>
<tr>
<td>Enrichment classes</td>
<td>3.28</td>
</tr>
<tr>
<td>Drill and practice</td>
<td>3.24</td>
</tr>
<tr>
<td>Remedial classes</td>
<td>3.12</td>
</tr>
<tr>
<td>Communicating with parents</td>
<td>2.66</td>
</tr>
</tbody>
</table>
Table 7 shows the mean ratings of Teachers’ Use of Computers in Teaching-Learning Process in Rank Order. It is evident from the table that Finding/Accessing Information and Educational Material, Test/Quizes and Making Presentations/Lectures are the most commonly used items among teachers followed by Preparing Lesson Plans, Preparing Reports and Teaching-Learning of Specific Subjects. However, communicating with parents, Remedial Classes, Enrichment Classes and Drill and Practice are the items which are least used by the teachers.

Table 8: Mean Ratings of Teachers’ Use of Internet in Teaching-Learning Process in Rank Order

<table>
<thead>
<tr>
<th>Use of Internet in Teaching-Learning Process</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collecting teaching and reference material</td>
<td>5.13</td>
</tr>
<tr>
<td>Preparing papers and teaching materials</td>
<td>4.97</td>
</tr>
<tr>
<td>Making presentations/lectures</td>
<td>4.59</td>
</tr>
<tr>
<td>Teaching specific lessons in various subjects</td>
<td>4.50</td>
</tr>
<tr>
<td>Preparing Lessons / Lesson Plans</td>
<td>4.33</td>
</tr>
<tr>
<td>Communicating with teachers</td>
<td>3.62</td>
</tr>
<tr>
<td>Communicating with students</td>
<td>3.54</td>
</tr>
<tr>
<td>Accessing and using online assessment tools</td>
<td>3.38</td>
</tr>
<tr>
<td>Communicating with parents</td>
<td>2.67</td>
</tr>
</tbody>
</table>

Table 8 shows the mean ratings of Teachers’ Use of Internet in Teaching-Learning Process in Rank Order. The table shows that Collecting Teaching and Reference Material, Preparing Papers and Teaching Materials, Making Presentations/Lectures and Preparing Lesson/Lesson Plans are the items for which Internet is being used most widely by the teachers. However, Communicating with parents, teachers and students and Using Online Assessment Tools, Internet is least used by the teachers.

DISCUSSION AND CONCLUSION

The study revealed that a large portion of teachers (75%) had been formally trained for ICT. Moreover, a significantly large proportion of teachers (67%) had access to computers and 53% teachers had access to internet at their institution as well as home. Despite a large proportion of teachers being formally trained in ICT and having access to computers and internet, results show that ‘use of Email’, ‘internet browsing’, and ‘word-processing’ were most familiar tools. On the other hand, ‘collection of teaching/reference material’, ‘preparing papers’, and ‘teaching materials’ were being used for teaching purposes. Moreover, variables such as ‘finding information’, ‘educational material’, ‘test/quizzes’, and ‘preparing lectures/presentation’ were found to be significant factors in teaching at higher secondary level. ICT is being used in teaching-learning process using generic and general purpose tools for example wordprocessor, spreadsheets, email and internet. This is attributed to the reason that when teachers are sent for formal training, they are sent for programs of short duration (not more than a week) so that the teaching process is not is not affected due to their absence. The training is thus focused on general handling (Windows, in particular), wordprocessors, spreadsheets and presentation software (MS Word, MS Excel and MS Power Point in particular as they are being widely used. Thus the ‘formal training’ does not train the teachers as how to integrate the ICT in classroom teaching. Thus, whereas ICT tools support the teachers in lecture preparation, the teachers are reluctant in using computer as a direct teaching aid within the classroom. Moreover, teachers are trained to use computers and internet but not trained how to teach making use of ICT. It was found that ‘Communicating with parents’ and ‘Communicating with Students’ were significant factors in using internet in teaching-learning process. Teachers seldom make use of internet for online tests tools. Although internet is used for collecting teaching information and communicating among themselves, communications technology is not being directly used in teaching-learning process.

The study revealed that a large number of both male and female teachers have been formally trained for using ICT and a significant proportion of teachers have access to both computer equipment and internet in both their workplace as well as their home. Despite the aforesaid, the knowledge of teachers in ICT is shallow and
revolves around basic use of computers and internet e.g. email, wordprocessing, spreadsheets and browsing over internet for enriching their content knowledge which may have indirect benefit in their teaching practice but there is a lot more to be done for integrating ICT directly in classroom activity.

In addition to integrating computers in classroom teaching, teachers must also be encouraged to exploit the potential of communications technology (internet) so as to maintain a close liaison with the parents for regular feedback. This could also be used for arranging reinforcement/enrichment of content taught inside the classroom and for those students who could not attend the class for some reason. Use of online assessment tools, simulations, programming and web page designing may also included in the teachers’ training so that they could become self sufficient in producing tailor made solutions for their specific teaching needs. The management of educational institutions must also understand that only the provision of equipment and internet is not sufficient until the provision of righ software is not ensured. Since computers are supposed to be used in teaching of all type of subjects and teachers have calculated time when the classes are in progress, supporting staff must also be provided for maintenance of the equipment and making it ready in advance for use during class. Allied accessories such a multimedia projectors, smart boards, printers and their consumables are also required for getting the desired outcomes. Provision of all these resources may seem costly, but it eventually recovers the same in terms of academic achievement of the students.

The training program for teachers in ICT must be done in a progressive way. Those who are already aware of using general purpose software must be trained to further polish their skills in use of training software. Focus of training should be, in addition to general use of computers and internet, the subject specific utilization in teaching learning process. Teachers should be given ample time to share their views in better utilization of ICT among themselves.

**RECOMMENDATIONS BASED ON THE FINDINGS**

There should be increased emphasis on ICT in education at higher secondary level. The emphasis on ICT should be irrespective of gender of both teachers as well as the students. Moreover, the focus of the teachers’ ICT training should be on the use of ICT in classroom and integration of ICT in the delivery of curriculum. The solutions should be tailor made according to the cognitive level of the students in various topics being taught and the nature of the topic being taught itself. In addition to ICT training of teachers, some supporting staff must also be hired so as to make necessary equipment ready for the teachers. Communication through emails and blogs may also be used to increase interaction with parents/guardians for the feedback about their son/ward and further coaching of students who need extra coaching time or may have missed their lecture due to some unavoidable circumstances. In addition to motivating teachers, they should be facilitated as well accordingly in provision of right hardware, software, maintenance and technical support. It is recommended that the study may be further extended so as to find out the relation of teachers’ experience, the type of subjects they teach, students’ academic achievement pertaining to effective use of ICT in classroom and teaching/learning process. Teachers’ subject oriented training needs are also needed to be identified so that teachers of different subjects trained accordingly.

The outcome of this research will benefit the administration and decision makers of private colleges in particular and other institutions in general about the ICT training needs of their newly inducted and in-service teachers and chalking out teachers’ ICT training strategy. The study will also help in determining various areas of teaching-learning process which are mostly neglected while making effective use of ICT.

The study at this point can not be done across the country due to varied demographic conditions. Moreover, due to odd nature of the organizational structure and administration, public sector colleges are not being taken into account. Thus the study is limited only to the colleges which are affiliated with the Board of Intermediate Education Karachi and are run under private administration.
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REFERENCES


DEFINING LISTENERS IN SECOND LANGUAGE (L2) LISTENING: INVESTIGATING THE CHARACTERISTICS OF LANGUAGE LEARNERS AS LISTENERS

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ABSTRACT

Studies in L2 listening, unlike those in other language skills, mostly focus on the product of the skill instead of defining the process itself. Recent studies are far from going beyond basic experimental research designs most of which aim to find out the differences between the two groups in terms of the product of listening. The listening literature is full of such product-oriented experimental studies. However, it is obvious that qualitative research has a key role in understanding and uncovering listening as a cognitive process which is not susceptible to direct observation. More research is needed to find out the relationship between personality traits of effective and ineffective listeners and L2 listening success, a topic of interest for scholars since it was first asserted by the early middle of 20th century. From this point of view, this study is devoted to reach beyond stereotypical listening research. Aiming at investigating and exploring the characteristics of language learners as listeners according to the strategies they use in EFL listening, this study is expected to contribute to the field with its method, procedure, findings and concluding remarks. There are two phases in the study: a) the application of the Oral Communication Strategies Inventory (OCSI), which was developed to measure ‘active listening strategies’ and ‘less active listening strategies’ of EFL learners, to 123 freshman students of English Language Teaching (ELT) Department of a state university in Turkey; b) semi-structured interviews with 10 students selected from the participants of the first phase. After the qualitative analyses of OCSI scores, the top-ranking 10 students were included in the second phase of the study and invited as volunteer interviewees. The second phase, the main qualitative part of the study, was conducted with semi-structured interviews. The questions were designed to explore the participants’ personality traits in L2 listening. Qualitative data was transcribed verbatim and analysed with a content analysis method. The analysis revealed basic characteristics such as ‘being text-dependent, non-interruptive, judgmental, empathic’. In total, 30 characteristics were defined under 5 pre-determined themes and 11 categories. While most of the characteristics defined in the study are consistent with existing literature, there are also some newly explored ones such as ‘being respectful, being text-independent, and willingness’. Both the findings and the research design of the study have implications and suggestions for further research as well as L2 listening practice.

Key Words: L2 listening; characteristics of listeners; listening comprehension strategies; big five factors (BFF).

INTRODUCTION

The amount of time devoted to the research and teaching of listening is far less than that devoted to other components of communication such as speaking and reading (Adler & Rodman, 2006; Barker, 1971). Along with the amount of time, research methods of L2 listening seem to be restricted to experimental research designs. However, Vandergrift (1997) points out the importance of qualitative studies as having a key role in understanding and uncovering listening as a process. According to Flowerdew and Miller (2005), listening is a cognitive activity and not susceptible to direct observation. Many researchers define it as the least explicit of
the four language skills and they suggest that listening involves physiological and cognitive processes at
different levels (Field, 2002; Lynch, 2002; Rost, 2002; Vandergrift, 2004).

As predominantly qualitative, this study investigates characteristics of learners as listeners in accordance with
the strategies they use in EFL listening. It is necessary to define the most recurrent terms in the study which are
listening, listening strategy, characteristics of listeners and English as a foreign language.

Also referred as listening comprehension strategies in the literature, listening strategies are defined as
memory, cognitive, compensation, metacognitive, affective and social ways of coping with listening difficulties

Listener characteristics are those features unique to a language learner or listener. The ‘characteristics’
mentioned here is different from the concept ‘personality factors’. It is more or less related to ‘the big five
personality dimensions’ which are agreeableness, openness, extraversion, conscientiousness and emotional
stability. However the study has a broader focus on the term in reference with studies from communicational
and educational sciences.

The Importance of Listening/Listening Skill
Listening is an active process. According to Rogers and Farson (1986), ‘active’ means ‘the listener has a very
definite responsibility of trying to grasp the facts and feelings in what s/he hears.’ (p. 149). From this point of
view, it can be concluded that a listener should do her/his best to be a good listener. Then, what is ‘being a
good listener?’ or ‘an effective listener?’

Throughout history, effective speaking has been accepted as an important talent. However receptive
behaviour, in particular listening, matters as well. Several studies give two reasons to support this. First,
effective listening allows the listener to have access to other’s beliefs, objectives, knowledge and attitudes as
this kind of information is disclosed to an effective listener (Bavelas, Coates & Johnson, 2000; Miller, Berg &
Archer, 1983). Second, effective listening provides important relational assets such as setting up trust, sincerity
and creditability between the agent and the listener (Blader & Tyler, 2003; Detert & Burris, 2007; Yukl, Kim &
Falbe, 1996).

Purdy (1997) lists seven features for an effective listener:
1. Willingness to listen
2. Focus the attention
3. Being aware (perceptive) during listening
4. Doing interpretation (both verbal and non-verbal cues)
5. Consciously working to remember
6. Responding with feedback
7. Caring about the relationship during listening

He makes a definition of listening in accordance with the above mentioned features. According to him,
‘listening is the active and dynamic process of attending perceiving, interpreting, remembering and responding
to the expressed (verbal and nonverbal) needs, concerns, and information offered by other human beings.’ (p.
4).

During 70’s and early 80’s several researchers investigated ‘the time devoted to listening during daily
communication and language learning process’ (Barker, Edwards, Gaines, Gladney & Holley, 1980; Gilbert,
1988; Rivers, 1981; Weaver, 1972). They all concluded that listening is by far the most important human
activity and language skill which merits more extensive concentration.

L2 Listening Strategies
There is a great deal of research in the literature dealing with language learning strategies. However second
language listening (L2 listening) seems to be ignored as the focus is being put on other skills (reading, writing
and speaking). This is perhaps because of its ‘implicit and ephemeral nature’ (Vandergrift, 2008, p. 84) which makes listening skill difficult to observe. Researchers have studied L2 listening strategies from various perspectives which caused several taxonomies to occur such as; types of cues listeners use (Conrad, 1985); the sequences listeners follow (Martin, 1982; Young, 1997); proficiency levels of listeners (Anderson, 1985; Fujita, 1985; Murphy, 1987; O’Malley, Chamot & Küpper, 1989; Vandergrift, 1997).

**Metacognition in L2 Listening**

‘Meta-cognition’ is a key term of research on L2 listening strategies as it has given a new impulse to the field. Metacognitive awareness in L2 listening is defined as ‘learners’ cognitive appraisal or the metacognitive knowledge of their perceptions about themselves, their understanding of listening demands, their cognitive goals, and their approach to the task’ (Rahimi & Katal, 2012) and the strategies they adopt during learning. Metacognitive strategies include five types of strategies. These are: problem-solving, planning and evaluation, mental translation, person knowledge, and directed attention. Use and effects of metacognitive strategies in L2 listening have been studied by several scholars from various perspectives (Berne, 2004; Bozorgian, 2014; Cross, 2011; Goh, 2008; Goh & Yusnita, 2006; Rahimirad & Shams, 2014).

**Characteristics of Language Learners as Listeners**

Individual differences have attracted the scholars of second language acquisition (SLA) research over last two decades regardless of topics they specialize. It is obvious that many problems arising in language learning and the teaching process should be approached in a contemporary manner taking individual differences into account. The big five factors as well as attitudes, motivation, anxiety and gender are found to be ‘strongly related to success in L2 learning and communication’ (Fayyaz & Kamal, 2011; p. 60). Samuels (1984) divided those factors as ‘inside-the-head’ and ‘outside-the-head’ factors. Intelligence, kinesics and motivation are among inside-the-head factors. There are several others investigating the correlation between success and the personal traits of learners (Ames, Maissen & Brockner, 2012; Bommelje, Houston & Smither, 2003; Dewaele & Furnham, 1999; Liyanage, 2004; MacIntyre & Charos, 1996; Samimy & Tabuse, 1992).

As Fayyaz and Kamal cited ‘regarding the importance of personality traits in English listening, teachers should be made aware of the importance of and sensitivity to the individual differences among their students’ (Fayyaz & Kamal, 2011; p. 72). However, it seems that research on the topic is not sufficient to provide implications for teachers. Language learners have not been studied enough in terms of their characteristics as listeners.

Studies on the characteristics of listeners had started by the early middle of 20th century with Nichols (1948, cited in Purdy & Newman, 1999) who set the basics with his doctoral thesis and identified characteristics of effective and ineffective listeners.

The second half of the 20th century also witnessed several studies on the topic. Ross (1964) investigated ‘the relationships between listening ability and measures in reading, arithmetic, intelligence, personal and social adjustment, socioeconomic factors and hearing’ (p. 369) with good and poor listeners. Ross reached some findings that, good listener characteristics ‘should be traced to something other than intelligence’ (p. 371) in that, his experimental results showed that poor listeners were well below the good listeners in reading and arithmetic ability, intelligence and general school achievement.

Mostly inspired by Nichols’ works, scholars in the communication field conducted some studies to determine the characteristics in a contemporary manner while SLA researchers still discussed whether personality traits had an effect on listening ability (Fayyaz & Kamal, 2011). Steil, Barker and Watson (1983) gave lists of good and poor characteristics (Appx. Table 1).

Nichols’ list was replicated several times for different variables such as age (Coakley, Halone & Wolvin, 1996; Halone, Wolvin & Coakley, 1997), gender (Purdy & Borisoff, 1991; Purdy & Newman, 1999) and context (Imhof, 2001). Among all, Purdy and Newman’s study (1999) is the most convenient to be taken as sample as its participants had a suitable average age (M=21.5) for the university context (in which the current study is also...
conducted). Also their study gives the most distilled lists of characteristics for both good and poor listeners. They distilled 12 top ranked good and 13 poor characteristics (Appx. Table 2).

All these studies reveal that there are certain personal traits affecting a listener becoming either a good or poor listener.

**Big Five Factors and Listener Characteristics**

Big five factors (BFF), five dimensions of personality, also known as the ‘Five Factor Model (FFM)’ (Costa & McCrae, 1992) have started with Cattel’s works in the 1940’s. Cattel (cited in John & Srivastava, 1999) created the initial taxonomy of personality traits. Later on, his taxonomy was developed by many scholars (Almagor, Tellegen & Waller, 1995; Benet-Martinez & Waller, 1997; Digman, Takemoto-Chock, 1981; John, 1990). These factors are generally listed as:

1. Extraversion
2. Agreeableness
3. Conscientiousness
4. Emotional stability (‘Neuroticism’ as cited in Fayyaz & Kamal, 2011)

It was Goldberg (1981) who named these factors the ‘Big Five’ “not to reflect their intrinsic greatness but to emphasize that each of these factors is extremely broad” (John & Srivastava, 1999, p. 105).

Over time, these factors found their way into language studies. They were defined as the factors affecting the language learning process (Fayyaz & Kamal, 2011).

BFF take an important part of the research on characteristics of listeners in SLA. There are several studies on the relationship of success in L2 listening and BFF, attitudes and anxiety about L2 listening (Ames et al., 2012; Dewaele & Furnham, 1999; Liyanage, 2004; MacIntyre & Charos, 1996; Samimy & Tabuse, 1992). BFF are thought to have a major role in metacognition and metacognitive knowledge: Neuroticism-linked preference for self-information and on metacognitive knowledge; neuroticism-linked predominance of negative schemas such as negative self-evaluations are the topics studied by several scholars (Abe, 2005; Bidjerano & Dai, 2007; Hudlicka, 2005; Vandergrift, Goh, Mareschal & Tafaghodtari, 2006; Whitmer, 1997).

This study, through a qualitative research design, seeks answers for the following research questions:

1. Which characteristics do the language learners have as listeners?
2. Are the characteristics of language learners as listeners and BFF interrelated?

**METHOD**

**Participants and Procedures**

The participants of this study were selected from the classes of the department where listening skill is taught and practiced during preparatory courses and first year studies under different courses. Students have a ‘Listening’ course 5 hours per week during preparatory class. In the first year there is a ‘Listening and Pronunciation’ course (105 AL/106 AL) which is carried out 3 hours per week. Data was collected at the end of the academic year (2011-2012 Spring) which means all the participants, as first year students, had two years of listening courses. None of the participants were reported to have any listening education prior to their university life. This study consists of two phases. In the first phase, Oral Communication Strategy Inventory (OCSI) was administered to freshmen students in the English Language Teaching Department of a state university. According to the analysis of OCSI, top ranking students were determined to have been using listening strategies effectively. Six out of seven listening strategies were scored according to the items they had in OCSI. One of the strategies of OCSI was excluded from scoring as it was to measure a ‘less active listener strategy pack’ (See Nakatani, 2006 for a detailed evaluation of OCSI). After recruiting the participants based on the results of the OCSI, they were informed about the second phase of the study and a meeting date was set.
suitable for both parties (the researcher and the participants). The aim of the study was briefly defined to the participants. Those whose consents were taken were chosen as the participants.

**Measures**

OCSI: OCSI, developed by Nakatani (2006), has two parts. The first part examines speaking strategies used for coping with the problems experienced during speaking and the second part examines strategies for coping with listening problems experienced during interaction. There are eight categories for the speaking part and seven categories for the listening part. In this study, only the second part was used as speaking is not among the concerns of the research. The reliability of OCSI’s listening part was confirmed by Cronbach’s alpha (0.85 for listening part). The total percentage of variance accounting for seven factors of listening part was 58.3%.

In the first phase of our study, OCSI was used without any translation as the participants were all upper-intermediate learners (freshman after one year of intensive English preparatory class). A total of 120 students (72 women and 48 men) participated in the study. The participants’ ages ranged from 18-24 years old. Gender and age were not among the concerns of the study so the demographic profile data was collected only to assure the homogeneity of the group in terms of a general profile of English language teaching departments of Turkey.

The reliability of the questionnaire indicated a highly acceptable consistency with Cronbach’s alpha value measured 0.80. OCSI was used in its original form; therefore factor analysis was not conducted. The participants were ranked according to the values obtained from OCSI results. Only Factor 6 was excluded as it was designed to measure ‘less active listener strategies’. Each participant’s responses for the questions were calculated to obtain a total value. Values were equal to likert scale figures. For example if a participant’s response for an item was 1 (Never or almost never true of me), then it was given one point. Likewise, 5 points were given for an item which was responded as 5 (Always or almost always true of me). In this way, top ranking participants (Appx. Table 3) were determined and they were included in the second phase of the study which was interviews to determine the characteristics of language learners as listeners.

**Interviews**

As the second phase of the study in-depth interviews were conducted by the researcher himself. Participants having the highest scores of OCSI results were included in interview section of the study. According to OCSI scores, 10 participants (7 women and 3 men) were included in this phase. They were accepted as having the awareness and ability for using active listening strategies. Content analysis was conducted to obtain grouped data from interviews.

**FINDINGS AND DISCUSSION**

In this chapter data analysis is given along with discussion of the results. Findings are discussed in their relation to the current literature; the findings are expected to include the answers for the research questions presented. As a limitation of the study it should be stated that there is a gap in the literature which might provide more a sufficient relationship between personality factors and listening. After preliminary investigations of transcribed data, BFF are determined as the theme of the characteristics. Each trait of the BFF has unique categories which cover the characteristics of language learners as listeners. This study is designed as a qualitative one; and questionnaires, which form the quantitative part, have been used only to determine the participants for the main part of the study as explained above. Each theme and quotes of the participants are given in an appendix in order to make the essential points of this section more clear.

**Agreeableness**

Agreeableness is one of BFF and it is associated with courtesy, cooperation and tolerance (Abe, 2005; Barrick & Mount, 1991; Bidjerano & Dai, 2007). Participants’ responses for the related interview questions and probes revealed two main categories of agreeableness: Kindness and cooperative behaviour (Appx. Table 4).
Agreeableness and its categories compound a very popular set of characteristics among the participants. Being respectful to the speaker seems to be the most significant characteristic of listeners. Most of the participants reported to holding a respectful attitude toward the speaker in a two-way listening process. One of the participants expressed her attitude (*Quote #1*).

It is important to note that ‘being respectful’ is a quite dominant characteristic of the listeners whether the speaker is their teacher or their classmates or even a foreigner. They think ‘respect’ is a mutual and humanistic concept. These two quotations show the listeners perception of respect in their listening experiences (*Q #2*, *Q #3*)

Almost no data exists in the relevant literature on ‘respect’ as a characteristic of a listener. Considering cultural and social backgrounds of the participants, it is logical to estimate it as a characteristic arising from national stereotypes or parental manners of the context. Several studies reveal cultural stereotypes as determinants of SLA process (Grindsted, 2000; Kramsch, 1993, 1998).

Another factor attributed to ‘kindness’ is being ‘non-interruptive’. Most of the participants who reported to be respectful while listening, also reported themselves as non-interruptive even when the topic did not suit them or they would like to raise an objection to what is being told. According to them, interrupting is an indicator of being a poor listener as one of them described (*Q #4*).

Recalling her classroom experiences, one of the participants revealed her listener characteristics as ‘non-interruptive’ and ‘caring’. She described her attitude while listening to a lecture by her professor, a classroom performance by one of her classmates and an everyday conversation with one of her friends on Skype (*Q #5*).

Listening differs from writing and reading in that it needs at least two agents (the speaker and the listener) which allow participation of the two. During classroom listening activities and everyday listening experiences, listeners also need collaboration. The participants revealed their characteristics in terms of cooperative behaviour. Giving feedback was seen as an indicator of comprehension (*Q #6*).

Being a participatory and responsive listener was also a favourable characteristic among the participants most of whom defined themselves as ‘participatory’ rather being passive listeners (*Q #7*, *Q #8*) or responsive (*Q #9*).

Participating, responding and giving verbal or non-verbal feedback are among the common listener behaviours (Purdy, 1997; Vandergrift, 2004). Feedback and participation of the listener is among the vital components of active or effective listening (Murphy, 1989; Rogers & Farson, 1994; Rost, 2002; Wolvin & Coakley, 1993).

These characteristics – apart from ‘being respectful’ – have all been defined by previous studies (Purdy & Newman, 1999; Steil et al., 1983). Determined by their listening aims and the source, ‘being respectful’ is attributed to the context. Also, it can be concluded that moral issues such as being respectful and caring as a listener are context-bound characteristics; that is, they are special to the society the listener belongs to. Previous studies have no similar findings. Most of the participants are of the Eastern region of the country which means they are brought up in patriarchal family structures where children are generally conditioned to listen and obey. Unfortunately, this tendency can be transmitted to classroom settings which results in a unidirectional teacher-student interaction. However it is a controversial issue whether ‘respect’ is a negative characteristic for a language learner in listening where the listener is expected to have the merit of listening in a non-disturbing manner.

**Extraversion**

A number of studies have examined the impact of extraversion on language learning (Dewaele & Furnham, 1999; Ehrman, Betty & Oxford, 2003; Kiany, 1998; Oxford & Anderson, 1995; van Daele, Housen, Pierrard & DeBruyn, 2006; Wong, 2011). As a personality factor, extraversion is suggested to affect a learner’s learning style and proficiency in a positive way as it is associated with sociability, assertiveness etc. (Barrick & Mount,
Participants of this study reported two main categories of extraversion: sociability and enthusiasm (Appx. Table 5) which revealed six unique characteristics of listeners:

a. Being open-minded
b. Being empathic
c. Making eye contact
d. Context-bound willingness
e. Content-bound willingness
f. Mood dependent willingness

It is notable that nearly all of the participants (7 out of 10) reported at least one of the characteristics inferable from extraversion. Being ‘open-minded’ was emphasized as meaning that the participant is open to new ideas as well as newly presented information. As they stated, newly presented information is acceptable even if it contrasts with their existing knowledge (Q #10, Q #11).

As an emotional and cognitive term, empathy was reported by the participants several times. Those who defined themselves as ‘empathic’ related the term to the necessities of classroom atmosphere (Q #12, Q #13).

Making eye contact during listening was reported by most of the participants. Like ‘respect’, ‘eye contact’ is also typical to cultural context (Sueyoshi & Hardison, 2005). Several studies emphasize that as a paralinguistic feature of communication, eye contact is an important tool for listening comprehension allowing the listener to understand the message better (Heaton, 1978; Pennycook, 1985; Sueyoshi & Hardison, 2005). Some participants identified it with ‘caring the speaker’ or ‘giving feedback’; some others revealed cultural and traditional stereotypes as the underlying reason for making eye contact (Q #14, Q #15, Q #16, Q #17).

There is much research on ‘task difficulty’ as a factor determining comprehension of the L2 listener (Brindley & Slatyer, 2002; Ghahdarijani, 2012; Révész & Brunfaut, 2013). Task difficulty should be assessed as a content-bound factor affecting listening comprehension. However it is obvious that there are other factors as well. The participants reported ‘willingness’ with three sub-variables: context-bound, content-bound and mood dependent willingness to listen.

Context-bound willingness, content-bound willingness and mood dependent willingness were reported as follows (Q #18, Q #19, Q #20, Q #21, Q #22).

The characteristics revealed in this theme are more likely to be correlated to personality factors. Personality factors are suggested to have a key role ‘on the development of L2 basic interpersonal skills’ (Ellis, 2004, p. 541). Liyanage (2004) pointed out the impact of a learner’s cultural background on her/his communication behaviour. Willingness and motivation have been listed as two of the personality factors (Ellis, 1994; Dörnyei, 2005). Willingness of our participants to listen is found to have been determined by three factors which can be concluded as being sources of motivation. Lightbown and Spada (2006) mentioned ‘willingness’ as one of the characteristics of a good language learner.

In their pioneering study on the characteristics of listeners, Steil et al. (1983) mentioned ‘being open minded, making eye contact’ and ‘willingness’ as good characteristics of language learners. However their study lacked a detailed categorization of ‘willingness’. Purdy and Newman (1999) listed ‘willingness’ under the name of ‘caring attitude’ however it is obvious that ‘caring’ differs from willingness in that the former is related to ‘kindness’ while the latter is content-bound or context-bound which suggests ‘motivation’. Besides, willingness has psychological and cognitive backgrounds which mean ‘willingness’ is much more complex than was estimated by previous studies. It is more than ‘making listening classes attractive’ or ‘choosing listening material to attract the learners’.

The participant’s answers to interview questions gave hints of psychological and cognitive factors affecting their listening behaviour. It is obvious that their readiness and willingness to change depend on both internal
and external factors. Listening types, material or topic, and the setting have influence whether a listener is open to comprehend or not.

Being sociable should be considered in terms of personality factors which cause a listener to be good at interpersonal relationships. For example, a listener who feels isolated from her/his social context may not find it easy to make eye contact while listening in a foreign language.

**Openness**

Associated with elaborative learning (Geisler-Breinstein, Schmeck & Hetherington, 1996; Slaats, Van der Sanden & Lodewijks, 1997) and constructive learning (Busato, Prins, Elshout & Hamaker, 1999), Intellect (Bidjerano & Dai, 2007) or Openness to Experience (McCrae & Costa, 1985) has been found to correlate with metacognitive listening skills (Fayyaz & Kamal, 2011).

This theme gave two categories: curiosity and imagination (Appx. Table 6) which revealed five characteristics of listeners:

- Asking for repetition
- Asking for clarification/simplification/examples
- Opening debate
- Imagining
- Retrospective imagining

Asking questions is found to be related to curiosity. Non-interruptive listeners noted that they would ask questions after listening finishes. All of the participants who reported ‘curiosity’ or ‘asking questions’ also stated that they use eye contact and/or gestures or mimics to give the message of ‘asking for clarification/simplification/examples’ or ‘asking for repetition’. Participants revealed their characteristics of curiosity as follow (Q #23, Q #24, Q #25, Q #26, Q #27).

Another way of asking questions has appeared to be ‘opening debate’. Only one of the participants reported that she opens debate during listening. She supposes the speaker to reveal cues to allow her comprehend (Q #28).

Imagining was reported as a characteristic of listeners. It is important to note that those participants who described themselves as ‘daydreamer’ and ‘non-focused’ also reported to be imagining while listening (Q #29, Q #30).

Interviews revealed an interesting characteristic which is described as ‘retrospective imagining’. Some participants, who rely on their imaginations, expressed that they continue imagining what they have listened to even after the class or the conversation. It is obvious that this kind of ‘imagining’ more frequently occurs when the listener cannot reach a sufficient comprehension during listening (Q #31, Q #32).

As important ways of obtaining new information, asking questions, asking for repetitions and simplifications are among the characteristics determined by previous studies (Purdy & Newman, 1999; Steil et al., 1983). ‘Open debate’ is found to be a newly reported characteristic by listeners. It is reasonable to think that those listeners who revealed ‘opening debate’ are extraverts as is the case with our participants.

Asking questions is one of the most commonly used ways of facilitating comprehension in EFL listening. Learner asks questions in various forms and for various purposes, however all of these questions have only one purpose: making comprehension better. Traditionally listening courses have been designed as ‘listen and repeat’ settings. The teacher is the speaker (or there is an audio/video source), s/he repeats as many times as s/he wants. Then the students are expected to repeat. However, today our conceptualization of listening comprehension class is far beyond this. The listener’s role is active (as it should be) and listening is not just a ‘listen and repeat’ activity. As a result of taking an active role, the listener participates more and has the option of asking questions for various reasons. While giving the message of ‘asking for
clarification/simplification/examples’ or ‘asking for repetition’, the participants reported using gestures and mimics as well as eye contact. Several scholars studied positive effects of using gestures in listening comprehension (Cabrera & Martinez, 2001; Cassel, McNeill & McCullough, 1999; Goldin-Meadow, 1999; Hattori, 1987; Riseborough, 1981).

Imagination has a reflection in cognitive strategies listeners use. Among cognitive strategies, visualization which is described as ‘forming a mental picture of what is heard’ (Yavuz, 2004, p. 32) should be broadened to ‘imagination’ to cover both concurrent and retrospective imagining. Visual scenarios are known to be helpful for a better comprehension in listening (Yavuz, 2004). The listener has an active role in forming a mental picture as s/he listens. Therefore comprehension is directly related to the skill of imagining.

**Conformity**

Conformity, which has been called as conscientiousness (Ames et al., 2012; Barrick & Mount, 1991; Botwin & Buss, 1989; Fayyaz & Kamal, 2011; Hakel, 1974; McCrae & Costa, 1985; Norman, 1963), dependability (Hogan, 1983) or will (Smith, 1967; Wiggins, Blackburn & Hackman, 1969; Digman, 1989) is related to educational achievement measures and volition; that is, ‘being thorough, organized and planful’ or being ‘hardworking and persevering’ (Barrick & Mount, 1991, p. 4). Whichever definition or denomination is chosen, it is predominantly associated with high academic performance (Abe, 2005).

The theme ‘Conformity’ revealed ‘planfulness’ and ‘goal-directed behaviour’ with several characteristics of listeners. Among all, ‘text dependency’ and ‘text independency’ are significant characteristics to be reviewed as they have not been identified by any previous studies. There are also some characteristics which have close connections with metacognitive strategies (Appx. Table 7). The characteristics revealed under this theme are:

a. Pre-reading/pre-listening
b. Note-taking
c. Being focused
d. Being text dependent
e. Being text independent
f. Paraphrasing

Depending on the type of listening task and material, ‘pre-reading’ is one of the characteristics of listeners. They reported depending on a text before coming to classes. It is obvious that ‘pre-reading’ is a characteristic they developed over time to overcome the difficulties they encountered. In this sense, it can be evaluated as a strategy as well (Q #33, Q #34, Q #35).

As a metacognitive strategy, ‘pre-reading’ was mentioned as ‘advance preparation’ in previous studies (Yavuz, 2004). However this definition is rather restricted if the case is a learner’s characteristic which is adopted as a result of above mentioned factors complicating listening comprehension. Besides, pre-listening was also reported by one of the participants. Pre-listening is not restricted to the listening material that is used in the classroom. Some participants reported that they use movies or songs to study for listening. They claimed that listening to ‘anything’ in English helps them overcome listening comprehension problems in the classroom (Q #36).

Note-taking was revealed to be used for asking questions. However some participants reported that note-taking is an important part of their listening experiences (Q #37, Q #38); some of them reported that they use notes to clarify the vocabulary or obscure points (Q #39).

A second set of characteristics that are drawn under the theme ‘conformity’ is goal-directed behaviour. The effect of texts provided along with listening gives two characteristics. Some participants identified themselves as text-dependent while some others pointed out their text-independent manner in listening. Text-independents even revealed that presence of a text along with listening distracts them and they experience difficulty in focusing (Q #40, Q #41).
On the other hand, text-dependent listeners reported that they feel anxious in the absence of text while an accompanying text raises their willingness (Q #42, Q #43).

Willingness to listen and anxiety have key roles on text-dependency/independency. Willingness to listen was explained in detail as a characteristic belonging to the group of ‘enthusiasm’. Anxiety, the other factor affected text-dependency and also affected by it, is a trendy issue of SLA research. There are several studies investigating the effects of anxiety on language learning (Bailey, 1983; Dörnyei, 2005; Horwitz, 2001; Tsui, 1996) as well as on listening (Elkhafafi, 2005; In’nami, 2006; Vogely, 1998; Vandergrift, 1999). Only one of the participants reported himself as ‘paraphrasing’ while listening (Q #44).

As a cognitive listening strategy, reconstruction is defined as ‘the listeners’ reshaping their understanding’ (Yavuz, 2004, p. 32). According to Yavuz (2004) listener achieves it either during listening or after listening. The words heard during listening or notes taken by the listener can be used for reconstruction. However the paraphrasing listener differs from the one who uses reconstruction in that s/he uses original material.

‘Being focused’ was reported frequently by the participants. Generally, this concept was observed as embedded in other characteristics. Verbal reports revealed that listeners need to focus on the subject as well as the task itself. Task difficulty and text difficulty are important factors for a listener to focus on. This characteristic seems to be opposed to a poor characteristic, ‘being non-focused’, which will be defined in the next theme (See Theme 4: Neuroticism) in terms of its causes and effects on listening. Phonetics, outer factors and topic are the causes of being focused or non-focused. One of the participants reported these factors (Q #45). Another participant emphasized the importance of outer factors on her focusing (Q #46).

Only one of six characteristics reported in this study was mentioned in Purdy and Newman’s 1999 work. Text-dependency/independency is defined to be a novel characteristic which does not exist in previous studies. Note-taking, being focused and paraphrasing were mentioned in several studies dealing with language learning strategies. However these terms reflect different profiles when they are described as the characteristics of a learner. Using a strategy mostly needs an awareness or training while these characteristics have self-developed and self-directed natures. Probably the listener transfers these characteristics from her/his everyday communicational nature.

**Neuroticism**

There are several factors affecting neuroticism. Anxiety (Fayyaz & Kamal, 2011), depression, anger, embarrassment and excitement (Barrick & Mount, 1991) are common traits associated with neuroticism. Eysenck (1967) suggested a relationship between neuroticism and lack of effective cognitive skills. The characteristics revealed under this theme seem to be ‘poor’ listener’s characteristics (Appx. Table 8). Research in the literature suggests that poor listener characteristics can be associated with gender differences (Borisoff & Purdy, 1991; Purdy & Newman, 1999). As gender is not among concerns of this study, it will not be reviewed here. The characteristics obtained under this theme are:

a. Being distracted
b. Being non-focused (because of phonetics, topic or outer factors)
c. Being unsocial
d. Being close-minded
e. Daydreaming
f. Having eyes wander
g. Being judgmental

Being ‘distracted’ and ‘non-focused’ are two significant characteristics of listeners. Both of them are dealt with in relation to a broader term: ‘anxiety’. One of the participants reported himself as distracted (Q #47); another one mentioned linguistic factors (Q #48). Non-focused listeners, sometimes, find the topic irrelevant or they blame outer factors (Q #49, Q #50, Q #51).
These characteristics are reported to result from several linguistic or paralinguistic factors. Phonetics, topic, loudness, rate and fluency are among the causes of being a distracted or a non-focused listener. These factors have been described as the sources of problems of listening process (Anderson & Lynch, 1988; Flowerdew & Miller, 2005; Ur, 1994; Yagang, 1993).

‘Unsociability’ and ‘being close-minded’ were also reported among characteristics of listeners. Obviously they appeared to be poor listener characteristics as the participants expressed their discontent on these. According to them, being unsociable and close-minded trouble their listening (Q #52, Q #53).

Undoubtedly, Bandura’s (1977) ‘social learning theory’ contributed much to this issue. Social setting and learner’s adaptation to this setting is extremely important for a satisfying extent of learning. There are several studies on sociocultural theory and its effects on language learning (Lantolf & Thorne, 2006; Pavlenko & Lantolf, 2004). Also research proved that the successful L2 learner should adopt various aspects of target language’s linguistic and cultural patterns (Gardner & MacIntyre, 1993; Ushida, 2005). Obviously close-minded and unsociable listeners lack the features of a well-socialized language learner who is open to adopt new ideas as well as new learning opportunities during L2 listening.

‘Emotional lability’ which revealed three characteristics can be described as cognitive and affective instability of listeners. ‘Being judgmental’ and ‘daydreaming’ are two examples reported by the participants. They also mentioned having ‘eyes wander’, as well as ‘daydreaming’ when they feel distracted or lose their attention during listening (Q #54, Q #55). ‘Being judgmental’ was reported along with ‘jumping to conclusions’ which are both indicates ‘impatience’ (Q #56, Q #57).

Listener characteristics reported under the theme ‘neuroticism’ are the characteristics of the poor listener or they reflect poor aspects of a listener. Though the literature suggests a great deal of studies on poor listeners, there are few works describing their very basic characteristics. Apart from ‘unsociability’, all of these characteristics were reviewed by previous studies (Purdy & Newman, 1999; Steil et al., 1983). Unsociability has its roots in cultural stereotypes as well as psychological agents. As discussed above, these are social and affective barriers listeners have. An unsocial learner benefits less from social learning settings. The family, traditions, beliefs and social context in which s/he is brought up may cause a listener to become unsociable. Proficiency level, listening comprehension and motivation are also affected by unsociability. Being close-minded should also be attributed to the social context of the listener.

CONCLUSION AND IMPLICATIONS

All the characteristics reviewed under the five main themes have one thing in common: they reflect the listeners. It is the broader picture of listeners as language learners which is drawn out with an inventory of listening strategies. In total 30 characteristics have been defined under 5 themes and 11 categories. All characteristics reported by the participants are listed according to their frequency of occurrence in verbal reports (Appx. Table 9) and the ranking of themes in terms of frequency of all characteristics are shown (Appx. Table 10).

The characteristics of listeners as language learners may provide new research questions from various perspectives. These characteristics can be studied independently as well as dependently in relation to one another or in relation to other internal and external factors of the language teaching/learning process. There are newly defined characteristics such as ‘being text-dependent, text-independent, respectful’ which can lead to further research to investigate cultural and personal contexts in more depth. Gender, age and task type have not been taken into consideration for this study. Thus, further research may go beyond this study by using these variables in new research questions.

Teaching listening is an arduous task for teachers. It is not easy for the learners as well. This study is believed to light the path to a better understanding of listening comprehension courses as well as second language listening outside of the language classroom.
Though the characteristics defined in this study need to be validated by further studies, it should not be ignored that understanding the characteristics of any learner helps the teacher broaden her/his understanding of the personality of the listener as language learner.

**IJONTE’S Note:** This paper is based on a doctoral dissertation titled “A Qualitative Investigation of the Characteristics of Language Learners as Listeners According to the Strategies They Use in EFL Listening”.

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**APPENDIX-1: Tables**

<table>
<thead>
<tr>
<th>Good listeners are:</th>
<th>Poor listeners are:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert</td>
<td>Inattentive</td>
</tr>
<tr>
<td>Responsive</td>
<td>Defensive</td>
</tr>
<tr>
<td>Patient</td>
<td>Impatient</td>
</tr>
<tr>
<td>Non-interrupting</td>
<td>Interrupting</td>
</tr>
<tr>
<td>Empathic</td>
<td>Disinterested</td>
</tr>
<tr>
<td>Interested</td>
<td>Insensitive</td>
</tr>
<tr>
<td>Understanding</td>
<td>Self-centered</td>
</tr>
<tr>
<td>Caring</td>
<td>Uncaring</td>
</tr>
<tr>
<td>Attending</td>
<td>Quick to judge</td>
</tr>
<tr>
<td>Other-centered</td>
<td>Distracted</td>
</tr>
<tr>
<td>Curious</td>
<td>Apathetic</td>
</tr>
<tr>
<td>Effective evaluator</td>
<td>Emotional</td>
</tr>
<tr>
<td>Non-emotional</td>
<td></td>
</tr>
<tr>
<td>Not distracted</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Characteristics of Good and Poor Listeners (Purdy & Newman, 1999 p. 35).

<table>
<thead>
<tr>
<th>A good listener</th>
<th>A poor listener</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses eye contact appropriately</td>
<td>Is impatient, interrupts the speaker</td>
</tr>
<tr>
<td>Is attentive/alert to speaker’s verbal/non-verbal behaviour</td>
<td>Doesn’t give eye contact (eyes wander)</td>
</tr>
<tr>
<td>Is patient and doesn’t interrupt (waits for the speaker to finish)</td>
<td>Is distracted (fidgeting), not paying attention to the speaker</td>
</tr>
<tr>
<td>Is responsive using verbal/non-verbal expressions</td>
<td>Is not interested in the speaker (doesn’t care, daydreaming)</td>
</tr>
<tr>
<td>Asks questions (in a non-threatening tone)</td>
<td>Gives little or no (verbal/nonverbal) feedback to the speaker</td>
</tr>
<tr>
<td>Paraphrases/restates/summarizes what the speaker says</td>
<td>Talks too much</td>
</tr>
<tr>
<td>Provides constructive (verbal/nonverbal) feedback</td>
<td>Changes the subject</td>
</tr>
<tr>
<td>Works to understand the speaker (is empathic)</td>
<td>Is judgmental, jumps to conclusions</td>
</tr>
<tr>
<td>Shows interest in the speaker as a person</td>
<td>Is closed-minded</td>
</tr>
<tr>
<td>Demonstrates a caring attitude (is willing to listen)</td>
<td>Is self-centered, self-preoccupied</td>
</tr>
<tr>
<td>Doesn’t criticize, is non judgmental</td>
<td>Gives unwanted advice</td>
</tr>
<tr>
<td>Is open-minded</td>
<td>Not focused</td>
</tr>
<tr>
<td></td>
<td>Too busy to take time to listen</td>
</tr>
</tbody>
</table>

Table 3: OCSI Scores of the Participants*

<table>
<thead>
<tr>
<th>PSEUDONYMS FOR THE PARTICIPANTS</th>
<th>OCSI Score</th>
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<tbody>
<tr>
<td>Ahmet</td>
<td>4.33/5</td>
</tr>
<tr>
<td>Ali</td>
<td>4.33/5</td>
</tr>
<tr>
<td>Burcu</td>
<td>4.5/5</td>
</tr>
<tr>
<td>Cenk</td>
<td>4.25/5</td>
</tr>
<tr>
<td>Deniz</td>
<td>4.5/5</td>
</tr>
<tr>
<td>Ebru</td>
<td>4.33/5</td>
</tr>
<tr>
<td>Elif</td>
<td>4.25/5</td>
</tr>
<tr>
<td>Melek</td>
<td>4.95/5</td>
</tr>
<tr>
<td>Nur</td>
<td>4.95/5</td>
</tr>
<tr>
<td>Su</td>
<td>4.5/5</td>
</tr>
</tbody>
</table>

*The names are in alphabetical order.

Table 4: Theme 1: Agreeableness

<table>
<thead>
<tr>
<th>THEME 1: AGREEABleness</th>
<th>CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1: Kindness</td>
<td>Respectful</td>
</tr>
<tr>
<td></td>
<td>Non-interruptive</td>
</tr>
<tr>
<td></td>
<td>Caring</td>
</tr>
<tr>
<td></td>
<td>Giving feedback</td>
</tr>
<tr>
<td>Category 2: Cooperative Behaviour</td>
<td>Participatory</td>
</tr>
<tr>
<td></td>
<td>Responsive</td>
</tr>
</tbody>
</table>
Table 5: Theme 2: Extraversion

<table>
<thead>
<tr>
<th>Categories</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1: Sociability</strong></td>
<td>Open-minded, Empathic, (making) Eye contact, (context-bound) willing, (content-bound) willing</td>
</tr>
<tr>
<td><strong>Category 2: Enthusiasm</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Theme 3: Openness

<table>
<thead>
<tr>
<th>Categories</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1: Curiosity / Ask Questions</strong></td>
<td>Ask for repetition, Ask for clarification/simplification/examples, Open debate, Imagining, Retrospective imagining</td>
</tr>
<tr>
<td><strong>Category 2: Imagination</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 7: Theme 4: Conformity

<table>
<thead>
<tr>
<th>Categories</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1: Planfulness</strong></td>
<td>Pre-reading / Pre-listening, Note-taking, Focused, Text dependent</td>
</tr>
<tr>
<td><strong>Category 2: Goal-directed behaviour</strong></td>
<td>Text independent, Paraphrasing</td>
</tr>
</tbody>
</table>

Table 8: Theme 5: Neuroticism

<table>
<thead>
<tr>
<th>Categories</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1: Anxiety</strong></td>
<td>Distracted, Non-focused, Phonetics, Outer factors (sound, interruption etc.), Topic</td>
</tr>
<tr>
<td><strong>Category 2: Low self-esteem</strong></td>
<td>Unsociable, Close-minded</td>
</tr>
<tr>
<td><strong>Category 3: Emotional lability</strong></td>
<td>Eyes Wander, Judgmental</td>
</tr>
</tbody>
</table>
Table 9. The Characteristics Reported by Listeners

<table>
<thead>
<tr>
<th>Sequence</th>
<th>The Characteristic Reported</th>
<th>Theme/Category</th>
<th>Frequency of Occurrence (approximately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-focused</td>
<td>Neuroticism/Anxiety</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>(making) Eye contact</td>
<td>Extraversion/Sociability</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Pre-reading/Pre-listening</td>
<td>Conformity/Planfulness</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Focused</td>
<td>Conformity/Goal-directed behaviour</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>(being) Respectful</td>
<td>Agreeableness/Kindness</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Ask for repetition</td>
<td>Openness/Curiosity questions – Ask</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Ask for clarification/ simplification/ examples</td>
<td>Openness/Curiosity questions – Ask</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Willingness*</td>
<td>Extraversion/Enthusiasm</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Text-dependent</td>
<td>Conformity/Goal-directed behaviour</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Text independent</td>
<td>Conformity/Goal-directed behaviour</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Non-interruptive</td>
<td>Agreeableness/Kindness</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Open-minded</td>
<td>Extraversion/Sociability</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>Participatory</td>
<td>Agreeableness/Cooperative behaviour</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>Imagining</td>
<td>Openness/Imagination</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>Retrospective imagining</td>
<td>Openness/Imagination</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>Note-taking</td>
<td>Conformity/Planfulness</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>Unsociable</td>
<td>Neuroticism/Low self-esteem</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>Close-minded</td>
<td>Neuroticism/Low self-esteem</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>Daydream</td>
<td>Neuroticism/Emotional lability</td>
<td>3</td>
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<tr>
<td>20</td>
<td>Eyes wander</td>
<td>Neuroticism/Emotional lability</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>Judgmental</td>
<td>Neuroticism/Emotional lability</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>Empathic</td>
<td>Extraversion/Sociability</td>
<td>3</td>
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<tr>
<td>23</td>
<td>Distracted</td>
<td>Neuroticism/Anxiety</td>
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</tr>
<tr>
<td>24</td>
<td>Caring</td>
<td>Agreeableness/Kindness</td>
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</tr>
<tr>
<td>25</td>
<td>Giving feedback</td>
<td>Agreeableness/Cooperative behaviour</td>
<td>2</td>
</tr>
<tr>
<td>26</td>
<td>Responsive</td>
<td>Agreeableness/Cooperative behaviour</td>
<td>2</td>
</tr>
<tr>
<td>27</td>
<td>Paraphrasing</td>
<td>Conformity/Goal-directed behaviour</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>Open debate</td>
<td>Openness/Curiosity questions – Ask</td>
<td>1</td>
</tr>
</tbody>
</table>

* Willingness stands for three characteristics related to the term: content-bound willingness, context-bound willingness and mood dependent willingness.
Table 10. The Ranking of Themes in Terms of Frequency of All Characteristics

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Theme</th>
<th>Number of Categories</th>
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<td>Neuroticism</td>
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</tr>
<tr>
<td>2</td>
<td>Conformity</td>
<td>2</td>
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</tr>
<tr>
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<td>Agreeableness</td>
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</tr>
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<td>4</td>
<td>Extraversion</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>Openness</td>
<td>2</td>
<td>15</td>
</tr>
</tbody>
</table>

APPENDIX-2: Quotes

**Agreeableness**

**RESPECT:**

| Quote – 1 (Q1) | “I show respect to the words of speaker. While listening to him/her I do not want to seem disrespectful with my manner and behaviour. Sometimes people may pose reckless attitude towards the teacher or even their friends while listening. I can’t stand it because there is someone speaking.” (Melek)

| (Q2) | “In my opinion, if I want to be listened carefully, I should listen to him/her. This is something like a mirror. Think that, someone is speaking and you do not respect him. For example you seem irrelevant, you act rudely and disrespectfully... and what do you expect?” (Elif)

| (Q2) | “In my opinion, if I want to be listened carefully, I should listen to him/her. This is something like a mirror. Think that, someone is speaking and you do not respect him. For example you seem irrelevant, you act rudely and disrespectfully... and what do you expect?” (Elif)

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**NON-INTERRUPTIVE:**

| (Q3) | ‘Sometimes we listen to passages from various topics. They can contrast with my previous knowledge but I do not interrupt it or object. The same thing is valid also for my teachers and friends or even for a foreigner... If I object and interrupt it, it means that I do not know listening and I am a know-it-all. Yet my aim is to learn while listening to English. Not only the knowledge itself but also pronunciation, vocabulary etc.’ (Elif)

| (Q4) | ‘I never interrupt. Because it is worse than the speaker’s mistake. Also I hate being interrupted.’ (Ebru)

**CARING:**

| (Q5) | ‘... for example last year our teacher would read passages and he would summarize with his own words to make us understand the text better. While listening to him, I tried to grasp the topic and seemed interested. Whether the speaker is a teacher or a friend, it doesn’t differ. Sometimes my classmates make presentations. I should be careful even with my sitting style on the desk. If I sit in a reckless style, it means that I do not notice him/her. Then s/he will be insulted. This is the same for everyone regardless of their position. My friend, my teacher or a foreigner ... I have got some foreign friends on Skype and Chatroulette, I do not spoil them while listening.’ (Nur)

**GIVING FEEDBACK:**

| (Q6) | ‘When I listen my teacher or my classmates I take notes and later I contribute her/him in that ‘you said this and I have a different idea on the subject’ or sometimes I criticize her/him and I can use her/his expressions which show that I have a full comprehension of her/his words.’ (Ahmet)

**PARTICIPATORY:**

| (Q7) | ‘I do not just listen. I attend my teacher. I do not like listening without any reaction.’(Nur)

| (Q8) | ‘Sometimes I share my opinions on the topic. For example I may ask for a right to speak and probably say ‘Excuse me, in my opinion it should be in this way’ or I may accept and contribute to her/him by saying ‘I agree with you.’’ (Burcu)

**RESPONSIVE:**

| (Q9) | ‘It is annoying if you are listening without any reaction. I cannot be indifferent to the speaker whether it is a classroom activity or an ordinary communication. At least I say a couple of words after listening to her/his speech.’ (Melek)
Extraversion

OPEN MINDED:
(Q10) ‘I listen whatever the speaker tells. Because maybe I will learn new thing from her/his words. Even if they are too different for me, I do not stop listening or leave the topic. I try to relate it with my existing knowledge.’ (Su)
(Q11) ‘There occurred many cases when I listened and changed my existing beliefs or knowledge. I think a learner should be open to everything. Otherwise how can we learn? While listening in English I change my pronunciation and sometimes I learn new words that are more suitable than my vocabulary. I adopt them.’ (Nur)

EMPATHIC
(Q12) ‘In the classroom I try to empathize with the other. While listening I do not confine myself to my own ideas or feelings or understanding.’ (Elif)
(Q13) ‘According to me, the listener should empathize with the speaker, so that s/he can understand all the message the speaker wants to give. I do this during listening in listening classes.’ (Nur)

EYE-CONTACT:
(Q14) ‘Our listening and pronunciation courses depend on classroom interactions. Sometimes we listen from a CD player and sometimes our teacher talks. When I listen to my teacher or my classmates I rarely lose eye contact because I feel not caring the speaker when my eyes wander.’ (Su)
(Q15) ‘... and eye contact is crucial for me to comprehend what I am listening to... yes, eyes are important to indicate it (comprehension).’ (Burcu)
(Q16) ‘Sometimes I miss the point. For example while listening to my teacher, when I face with a word or phrase that I have never heard before, I miss the point. Our teacher understands it from my eyes. I should give this message to my teacher through eye contact.’ (Melek)
(Q17) ‘... eye contact is necessary sometimes. It may distract my teacher if I look at other things while s/he is speaking. Yet listening to my friends is different from it.’ (Ahmet)

WILLINGNESS:

Context-bound willingness:
(Q18) ‘While watching a film or listening to a foreigner (a tourist), I mean out of the classroom, I feel more willing to listen to. I study at home before coming to class and I get bored when listening the same thing over and over. You have to understand the topic. There are orders you should follow: listen, answer ... it is not enjoyable listening for the lesson. I do not get bored while watching a film in English.’ (Burcu)

Content-bound willingness:
(Q19) ‘Generally, I get bored easily if the topic is not interesting. For example we have a coursebook for listening and pronunciation class. It has many interesting topics but some others are rather dull and boring. In fact I do not want to even attend to class on those days. Our teacher tries hard to make the lesson interesting but if the topic is dull we get bored easily.’ (Su)
(Q20) ‘I am more interested into it if the topic is one of my favorites.’ (Melek)

(Q21) ‘...for example my best friend is Murat and we do speaking practices. I try to find interesting topics to make him listen to me eagerly. I ask the same thing from him. His words should appeal to my interests. For example, he knows that I like learning about new places in the world and he tells me about interesting places all over the world’ (Ali)

Mood dependent willingness:
(Q22) ‘It depends on my mood. If I do not feel good while listening to English whether it is classroom or at home, it affects my enthusiasm.’ (Burcu)

Openness

ASK QUESTIONS
(Q23) ‘I ask her/him to repeat when I do not understand.’ (Burcu)
(Q24) ‘If I can’t hear or I have any difficulty in comprehending it, I ask the speaker to slow down or to repeat it. If the problem goes on I ask her/him to paraphrase. While listening or watching on my own, I replay it as much as I need to understand.’ (Ahmet)
(Q25) ‘... native speakers use too much contractions. Even our teachers sometimes use difficult idioms or phrases. If I do not understand it or I have a problem in perceiving it, I try to express it through mimics or gestures.’ (Melek)

(Q26) ‘When I do not understand I say: ‘Could you repeat it please.’ In listening and pronunciation classes it is easy to ask our teacher to replay it or restate it, even I think our teacher understands from my eyes or mimics, however it is a big problem while listening to a foreigner. I generally ask her/him to restate it with simple words and slowly.’ (Nur)

(Q27) ‘Not to disturb her/him, I wait till s/he finishes his words or at least I wait for an appropriate interval then I kindly request her/him to repeat it.’ (Elif)

OPENING DEBATE

(Q28) ‘... listening and pronunciation classes are based on listening and comprehension of topics which are of various subjects. When I have difficulty in comprehending any word, expression or concept, I try to discuss the topic with our teacher or my classmate. In this way s/he gives me elaborated explanations of the topic. I can infer the meaning in this way.’ (Elif)

IMAGINING

(Q29) ‘While I am listening, there should be a full silence because I can’t focus on it if there is loud. Silence is very important because sometimes I shut my eyes and try to see the picture. It helps me understand.’ (Burcu)

(Q30) ‘I reflect it into my mind: I try to imagine what is being said or what can be said there. I fill the blanks with my imagination and deductions.’ (Deniz)

(Q31) ‘I do not understand sometimes. It affects all my day. For example if I can’t understand something it becomes somehow obsession for me. It puzzles me. I go on thinking on it. Trying to see the picture and fill in the gap(s) I have from the listening, I keep focused on it. Later on, I can find and say ‘Oh! Yes. It was machine not vaccine.’ My roommates get angry with me. They warn me to leave the subject in the classroom but I can’t stop thinking a gap from any listening.’ (Burcu)

(Q32) ‘... Though not being very often, I may keep thinking on a point which I could not catch during listening. I try to think the event or concept from various perspectives. It helps me understand even the class and listening is over.’ (Ali)

Conformity

PRE-READING

(Q33) ‘I read two or three times before coming to classroom. It helps me understand better while listening. If we have the listening track itself I listen to it several times beforehand.’ (Ahmet)

(Q34) ‘We have a textbook and I think it becomes easier to understand the teacher if I read the text before the class.’ (Ebru)

(Q35) ‘There is too much noise in the classroom while we are listening to our teacher or one of our classmates because we are trying to catch the meaning. Generally my friends make noise while asking each other. Sometimes I focus on but I get distracted on a question raised by one of my classmates. Because of these, I read the text in my room before I come to the class. It helps me comprehend better. I hope we had texts even before the exams.’ (Burcu)

PRE-LISTENING

(Q36) ‘... for example if I have listening class tomorrow, I listen to some music or watch a film. Then, the next day I feel at ease during listening and pronunciation class. I feel that I comprehend better.’ (Deniz)

NOTE-TAKING

(Q37) ‘... generally I note down the important points.’ (Melek)

(Q38) ‘Listening to an audio or to our teacher is much more difficult than listening to our classmates. They speak more fluently which makes is difficult to understand. I take notes during listening and then I check them.’ (Nur)

(Q39) ‘I try to write down the words that I can’t understand totally. Then I look up for it. If I can’t find it, I consult to my friends or teacher.’ (Cenk)

TEXT-DEPENDENT

(Q40) ‘I should be all alone with the voice. How can I match them together? Looking at the text or listening? I can’t focus on the listening task while there are words and letters in front of my eyes.’ (Deniz)
(Q41) ‘I do not prefer using a text if I do not have to use it. It distracts my attention. I may miss the audio or the voice while trying to match them with the written material.’ (Ali)

TEXT-INDEPENDENT

(Q42) ‘It is very easy if we have an accompanying text. Think that you do not know what is going to be said. You have no idea on what are you going to listen. The topic ... the vocabulary... they are very difficult and obscure. When I have a text in my hand, I feel better, no matter how difficult it is.’ (Burcu)

(Q43) ‘Last year, we didn’t use a course book for listening. For this reason it was boring. I didn’t know what to study or what to listen on that day. I felt unwilling for listening. This year, we use a course book which has topics for each day. Therefore I can see the topic of the day. I feel better now.’ (Ahmet)

PRAPAHRASER

(Q44) ‘I think about it and try to construct a new expression with my own words.’ (Ali)

BEING FOCUSED

(Q45) ‘...it becomes easy when the topic is a familiar one. Then I focus on easily. I should have something as previous knowledge in my mind before listening to any topic.’ (Melek)

(Q46) ‘Our dormitory is crowded which makes it unsuitable for listening. When I’m in the classroom, I feel it easy to focus on the subject. Because everybody is doing the same task and they do not make noise or other things.’ (Burcu)

Neuroticism

DISTRACTED

(Q47) ‘I feel distracted when I miss a word or even I can’t catch the topic.’ (Cenk)

(Q48) ‘...the most arduous aspect of listening in English is pronunciation. It is pronounced in a different style from its written form so whenever I hear a difficult expression to pronounce or to comprehend I get annoyed.’ (Nur)

NON-FOCUSED

(Q49) ‘I warn my classmates or flatmates: please be silent and do not make noise while I am listening to something or studying for listening class. Any noise, even sometimes a door creaking disturbs me. I can’t concentrate on.’ (Burcu)

(Q50) ‘I do my best to be successful. However our listening and pronunciation class gets unbearable sometimes. We may study nonsense and irrelevant topics. It makes me non-focused.’ (Deniz)

(Q51) ‘... listening is different from writing because it perplexes me whenever I hear a difficult word. Our teacher helps us but while watching a film or chatting with a foreigner ... it is really different.’ (Ahmet)

UNSOCIABLE/CLOSE-MINDED

(Q52) ‘In classroom, I do not have very close relationships with my classmates. I have good friends but they are very few. I don’t attend many classroom activities. Our teacher asks us to form groups with our classmates and prepare presentations. These all help us to develop our listening ability but I do not attend group works because I can’t be very close with others. As a result I have only few friends to communicate.’ (Cenk)

(Q53) ‘I do not accept easily. I have to judge for a long time to accept any new idea. Otherwise I can’t convince myself. This sometimes causes me stick into my own feelings. Think that I am listening to an audio or my teacher. S/he is teaching something or even her/his pronunciation teaches me but my mind is close to it. I do not receive it. As if I know it all the best. However I am a learner here and I should learn. But I fail to do this especially for pronunciation.’ (Deniz)

DAYDREAMING/EYES WANDER

(Q54) ‘Listening is very different... while listening to an audio or someone speaking I imagine the scene. It facilitates my comprehension. However there is a problem while imagining. I can’t focus on one topic and find myself dreaming something else. Once I wanted to think of an airport to imagine a conversation there I found myself thinking about my future plans to go abroad which were rather irrelevant to the topic.’ (Burcu)

(Q55) ‘Listening to one of my classmates or my teacher is better that listening to an audio file since it helps me focusing on. Otherwise I interest in other things. I look out of window or I check missing calls from my cell phone.’ (Cenk)

BEING JUDGMENTAL
(Q56) ‘It puts me into trouble to prejudice while listening. We listened to a crime report and all my classmates made fun of me. I suspected nearly all characters in the story.’ (Ali)

(Q57) ‘While listening to others, I come to a decision too early which makes me embarrassed. I make up my mind and express it, soon after that it turns out to be wrong. It is important for me to learn wait’ (Ebru).

REFERENCES


LEARNING THROUGH PORTFOLIO COMPRISING OF WORKSHEETS IN MEASUREMENT AND ASSESSMENT COURSE

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ABSTRACT

The main aim of the study was to evaluate qualitatively the portfolio process comprising of worksheets conducted as a case in the learning-teaching process of a measurement and assessment course at Anadolu University, Turkey. 42 prospective teachers participated in the study and the data was collected through an open-ended questionnaire. The principal results derived from the views of the participant prospective teachers were that prospective teachers fulfilled the requirements of the portfolio process, realized their learning drawbacks and revised their works, gained the objectives of the course. According to them, the process was useful for learning and retention. Blending the advantages of both worksheets and portfolio process worked almost well according to the prospective teachers.

Key Words: Portfolio, worksheet, prospective teacher, assessment.

INTRODUCTION

Advances in education lead instruction to move more learner-centered approaches and thus contemporary measurement and assessment methods such as performance-based tasks, interviews, constructed grid, poster, project, self, group and peer assessment, portfolio gained popularity. Among the various student-centered measurement and assessment methods, making learner assessment more authentic and to see the learners' growth over time, portfolios were used by educators (Burke, 1997) for many years.

Portfolio is defined as purposefully collecting the students’ works which reflect their performances, developments and success in a specific context (Paulson, Paulson and Meyer, 1991). The portfolio which could be also named as personnel development folder, selected product folder, student product folder, is a folder in which the works and the documents related to the works are collected and organized individually and it shows the developments in knowledge and skills during a period of time (Demir, 2012). Portfolios are used with various purposes in educational setting (Belgrad, Burke & Fogary, 2008) such as monitoring the students’ development during a time span, increasing the sense of responsibility of the students, helping them in gaining self-assessment ability and self-confidence, helping the learners to increase their thinking and problem solving skills, showing the students’ works, conducting formative assessment (Paulson et al., 1991; Kutlu, Doğan & Karakaya, 2010).

According to various purposes, different types of portfolios have been defined in literature. For example, Danielson & Abrutyn, (1997) stated three types of portfolios: Working, display, showcase or best works and assessment portfolios. Correlatively Kan (2007) defines three types of portfolios as documentation, process and show-case. Each type of portfolios has different purposes and processes. In educational settings, to see the development of the learners is very crucial. Working portfolios contain the works in progress and the finished
works of the learners (Danielson & Abrutyn, 1997) and show the learning outcomes related to the subject studied. Thus, working portfolio type might suit well for educational purposes of the kind to follow the learners' development regarding to a specific subject.

Alongside the advantages of portfolio for all of the instructional levels and institutions, using especially portfolios in teacher education programs has a specific importance. Using this kind of portfolios in teacher education programs help the prospective teacher in monitoring their development in learning process and to learn how to conduct such an authentic assessment in their future teaching profession. Indeed, when they realize their intellectual, cognitive or educational development with the help of the portfolio, this will lead a powerful impact on their growth and self-awareness (Dietz, 1996). Moreover, portfolios make a connection between theory and practice and help prospective teachers in developing themselves during their education process (Demir, 2012). With the help of the portfolio, prospective teachers share their works with their peers and instructors and take guidance and suggestions regarding their learning process (Demir, 2012). This latter advantage of the portfolio is also very valuable in means of learner-learner and learner-instructor interactions because the interaction is an important factor that effects the learning outcomes.

As one of the components of portfolios, specifically the working portfolios, worksheet is an important educational material that is used for the teaching of any subjects, providing retention or assessing the students’ level of reaching the aims and objectives (Göçer, 2012). Worksheets could be used for summarizing, enhancing or reviewing a subject (Yanpar-Şahin & Yıldırım, 2009). Indeed, with the help of the worksheets, all of the learners could participate in the activities (Sands & Özçelik, 1997) during the learning-teaching process. Worksheets are the instructional materials that explain what learners need to do, help them in constructing the new information in their minds and actively be involved in the learning process and provide an opportunity of conducting practices on theoretical subjects.

Worksheets are often used for providing a learner-centered instruction and dispelling the learners’ conceptual misunderstandings (Demircioğlu & Atasoy, 2006) Additionally, they could be used for making theoretical subject more concrete and helping learners apply their knowledge on new and authentic problems. Thus, including worksheet activities into the learning-teaching process of the courses in teacher education programs might be helpful for prospective teacher to fulfill the required competencies regarding the teaching profession. Worksheets might provide more benefits for prospective teachers while they were studying relatively more challenging courses to make them more explicit, concrete and applying theories into practice.

Among the various such courses related to teaching profession in teacher education programs, measurement and assessment course is one of the compulsory courses for the prospective teachers of most of the education faculties in Turkey. Though the importance of the measurement and assessment course in teacher education curricula, prospective teachers might not fulfill the required competencies regarding the measurement and assessment in education as revealed in the studies of Gök and Erdoğan (2009) and Gencel and Özbasi (2013). Indeed, the subjects related to basic statistical calculations of the course’s content might be sometimes challenging for the prospective teachers of the fields like social sciences and fine arts. Thus, the attitudes towards the measurement and assessment course might be effected negatively. Yaşar’s (2014) study conducted on prospective teachers regarding their attitudes towards the course revealed also very low levels of attitudes toward the course. To help the prospective teachers learn better, increase their attitudes toward the course and competencies regarding the measurement and assessment and improve the effectiveness of the learning-teaching process of the course, “portfolio process comprising of worksheets (P-WS)” was implemented in the current study. The aim of the study was to report and evaluate the P-WS process according to the views of the prospective teachers.

METHODS

The method of the current study was a case study in which the P-WS process was evaluated according to the views of the prospective teachers.
Participants
42 third-year prospective teachers (21 male and 21 female) of social studies education at Anadolu University were attended the course regularly and fulfilled the course requirements.

The learning-teaching process of the course and the P-WS process
The learning-teaching process of the measurement and assessment course was conducted in the classroom setting. There were 12 weeks class (three hours for each) apart from exam weeks and 9 worksheets assigned to the learners. The focus of the assigned worksheets were the specific aspects of the content of the course. The prospective teachers should have been studied the worksheets during course hours in pairs or small groups and kept them in their portfolios. Though nine worksheets required team-works, each learner should have collected his/her own portfolio. Thus, after studying in teams, the learners copied their worksheets for their own portfolios. An additional work to the worksheets for portfolios was to write a reflection letter on a cultural, sportive or scientific activity and include the reflection with an evidence (a ticket, participation letter, etc.) into the portfolio. The aim of the last component of the portfolio which seems nonsense among the assigned worksheets was to motivate prospective teachers to take part in such activities.

The assessment process of the P-WS
The measurement and assessment course included a mid-term exam, a final exam and a homework which was assigned as P-WS. Instructor collected the portfolios two times in the term to write feedback on the worksheets and gave a chance to learners for improving their knowledge and skills regarding the course. Thus, learners received two scores from the two assessments for their portfolios. The first assessment of the P-WS was named as mid-assessment and conducted before the mid-term exam. The second assessment of the P-WS was the comprehensive one and portfolios with 10 components were assessed, feedbacks were written on the remaining 6 worksheets. Additionally, first four worksheets which were assessed before were also reviewed for additional works of the learners according to the first feedbacks on them. The assessment criteria of the portfolios were shared with the participants at the beginning of the course term.

Data collection and analysis
At the end of the term, an open-ended questionnaire developed by the researchers was applied and 41 of the participants answered the questions voluntarily. For the analysis process of the questionnaires, descriptive thematic analysis was conducted. During the analysis process, firstly pre-defined themes and sub-themes were decided in the light of the questions on the questionnaire and the first overall readings of the answers of the prospective teachers to the questions. Then, two researchers were coded the whole data set into the pre-defined themes independently. Afterwards, the researchers came together to discuss and compare their own results of thematic analysis. For the disagreements on the results, the two researchers returned to the data and discussed to come to a consensus. Finally, inter-coder reliability ratio between the two researchers was calculated according to the Miles and Huberman (1994) and 96% was found. Themes derived from the views of the participants were exemplified through the direct quotations by coding as PS (Prospective Teacher) with a number (eg. PS-17). If a view of a participant included more than one theme, it was coded into related themes.

RESULTS
The findings derived from the thematic analysis on the views of the prospective teachers were presented under the five main themes which were set according to the questions on the questionnaires.

The Content of the Portfolios
All of the participant prospective teachers (n=41) indicated their views regarding the content of their own portfolio. They specified the content of the portfolio by specifying worksheets one by one or as a whole and their reflection on an activity. Thus it was possible to deduce that the prospective teachers met the requirements for the portfolios. Apart from the required components of the portfolios, on Table 2, the other components indicated by the prospective teachers were given.
Table 2: Other views of the prospective teachers regarding the content of the portfolios

<table>
<thead>
<tr>
<th>Other components of the portfolios</th>
<th>n</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>Lecture Notes</td>
<td>9</td>
<td>21.95</td>
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<tr>
<td>Course Schedule</td>
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<td>14.63</td>
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<tr>
<td>Final Assessment Criteria</td>
<td>4</td>
<td>9.76</td>
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<tr>
<td>Cover Page</td>
<td>3</td>
<td>7.32</td>
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</tbody>
</table>

According to the views of the prospective teachers, nine prospective teachers (21.95%) included lecture notes composed of handwrite of the learners during the lectures or the instructor’s notes given to them. Regarding the lecture notes, a student indicated his views as given below:

[PT-5 “..., the developmental characteristics of the children, item analysis work sheet, the lecture notes about measuring error types, measuring error worksheet, ….. the lecture notes taken during the lecture hours, …”]

Additionally, course schedule (14.63%), final assessment criteria (9.76%), and cover page (7.32%) found place on portfolios. In addition to the components given on Table 2, explanations about the process of the course, the developmental characteristics of the children, forewords of the prospective teacher about his/her portfolio and individual works done on the worksheets after the class hours were each indicated by only one prospective teacher. In the light of the views of the students, it was seen that prospective teachers broadened their portfolios by including other components related to the course in addition to the required ones.

The P-WS process

The prospective teachers were asked for indicating their views regarding the P-WS process. The themes derived from the questionnaires related to this issue were presented on Table 3.

Table 3: Views of the prospective teachers regarding the P-WS process

<table>
<thead>
<tr>
<th>The themes related to P-WS process</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Ensuring retention</td>
<td>25</td>
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</tr>
<tr>
<td>Being useful</td>
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<td>39.02</td>
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<tr>
<td>Facilitating learning</td>
<td>15</td>
<td>36.59</td>
</tr>
<tr>
<td>Reviewing the learned content</td>
<td>14</td>
<td>34.15</td>
</tr>
<tr>
<td>Learning through practicing</td>
<td>9</td>
<td>21.95</td>
</tr>
<tr>
<td>Ensuring enjoyable and pleasant learning process</td>
<td>9</td>
<td>21.95</td>
</tr>
<tr>
<td>Being a compliance between the portfolio and the content of the course</td>
<td>7</td>
<td>17.07</td>
</tr>
<tr>
<td>Enabling the assessment of the learning process</td>
<td>6</td>
<td>14.63</td>
</tr>
<tr>
<td>Being helpful for while studying for the exams</td>
<td>6</td>
<td>14.63</td>
</tr>
<tr>
<td>Being a motivating agent to the course</td>
<td>4</td>
<td>9.76</td>
</tr>
</tbody>
</table>

As showed on Table 3, more than half of the participants (60.98%) indicated the effect of P-WS process on their learning and highlighted the long term retention such as the below words of one of the prospective teachers:

[PT-1 “Because the same worksheets (in the portfolios) were practiced and learned during the course hours, ensured learnings to be long-lasting. By this way, the subject were learned exactly.”]

16 prospective teachers (39.02%) indicated the usefulness of the P-WS process. For example, one of them highlighted the convenience of the P-WS process in means of usefulness as the following.

[PT-9 “It was useful for us. Being parallel to the course studies provided convenience to us in means of learning the course topics.”]

The P-WS process was found facilitative for learning (36.59) in means of such as not-taking, following the content, gaining a summary of the course, preparing for the exams by the participants. The prospective
teachers were also found the P-WS process positive according to themes given on Table 3 as reviewing the learned content (34.15%), learning through practicing (21.95%), ensuring enjoyable and pleasant learning process (21.95%), being a compliance between the portfolio and the content of the course (17.07%), enabling the assessment of the learning process (14.63%), being helpful for while studying for the exams (14.63), being a motivating agent to the course (9.76). According to the derived themes from the views of the prospective teachers, they had positive views regarding the P-WS process and benefited from the process.

The mid-assessment of the portfolios

The themes derived from the views of the prospective teachers were according to this mid-assessment activity of the instructor were given on Table 4.

Table 4: Views of the prospective teachers regarding the mid-assessment of the portfolios

<table>
<thead>
<tr>
<th>The themes related to mid-assessment of the portfolios</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeing the learning drawbacks with the help of received feedbacks</td>
<td>32</td>
<td>78.05</td>
</tr>
<tr>
<td>Providing opportunity for corrections on worksheets</td>
<td>22</td>
<td>53.66</td>
</tr>
<tr>
<td>Being beneficial</td>
<td>19</td>
<td>46.34</td>
</tr>
<tr>
<td>Effecting the quality of the studies positively</td>
<td>5</td>
<td>12.20</td>
</tr>
<tr>
<td>Receiving the expected grade</td>
<td>5</td>
<td>12.20</td>
</tr>
<tr>
<td>Feeling happy for receiving feedback</td>
<td>5</td>
<td>12.20</td>
</tr>
<tr>
<td>Having simplification for understanding with the help of the feedbacks</td>
<td>4</td>
<td>9.76</td>
</tr>
<tr>
<td>Knowing the follow-up of their studies by the instructor</td>
<td>3</td>
<td>7.32</td>
</tr>
<tr>
<td>Being motivating</td>
<td>3</td>
<td>7.32</td>
</tr>
<tr>
<td>Helping for being neat while preparing the portfolio</td>
<td>2</td>
<td>4.88</td>
</tr>
</tbody>
</table>

According to Table 4, most of the participants (78.05%) highlighted the advantage of seeing their learning drawbacks with the help of mid-assessment. For example, one of the prospective teachers indicated the below words about this issue:

[PT-32 “With the help of the feedbacks given to us on mid-assessment, we saw our learning drawbacks and understand how to correct them. This situation help us to fulfill the missing subjects during the lecture and practicing. By this way we had a chance to proceed more substantial.”]

While gaining feedback is an important issue, making corrections according to the taken feedback is also crucial. Nearly half of the participants indicated the opportunity for making corrections on worksheets (53.66) according to the feedbacks written on their worksheets. Two participants indicated the following words related to this theme:

[PT-23 “… We could implement what we had learned during the lectures and we could again correct them…”]

[PT-33 ”It provides feedback. We could see our lacking and correct them.”]

Apart from the feedback and corrections, nearly half of the students (46.34%) specified “being beneficial” for the mid-assessments of their portfolios. The participants also indicated different views regarding the mid-assessment. Seven different themes with 2 to 5 frequency were derived from the participants’ views: Effecting the quality of the studies positively, receiving the expected grade, feeling happy for receiving feedback, having simplification for understanding with the help of the feedbacks, knowing the follow-up of their studies by the teaching stuff, being motivating, helping for being neat while preparing the portfolio.

In the light of the derived themes from the views of the prospective teachers, it could be indicated that the mid-assessment of the portfolios produced very positive results especially in means of gaining feedback and conducting revision works. It is possible to inform that the participants benefit from the mid-assessment process of their portfolios.
The learnings of the prospective teachers during the P-WS process

The ultimate aim of the P-WS process was to help prospective teachers in learning more and effectively. The themes derived from their views regarding their learning during the P-WS process were given on Table 5.

Table 5: Learnings of the prospective teachers during the P-WS process

<table>
<thead>
<tr>
<th>The themes related to learnings</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning the course content</td>
<td>19</td>
<td>46.34</td>
</tr>
<tr>
<td>Learning the portfolio collection process</td>
<td>9</td>
<td>21.95</td>
</tr>
<tr>
<td>Learning to study regularly and neatly</td>
<td>5</td>
<td>12.20</td>
</tr>
<tr>
<td>Learning the possibility of monitoring the development level</td>
<td>4</td>
<td>9.76</td>
</tr>
<tr>
<td>Learning from peers</td>
<td>2</td>
<td>4.88</td>
</tr>
</tbody>
</table>

According to the results of the data analysis given on Table 5, nearly half of the prospective teachers (46.34%) answered this question by indicating the content of the course. Two of them expressed their views as the followings:

[PT-3 "I learned all of the content of the course. ..."]

[PT-6 "I learned the basic concept related to measurement and assessment, what are the traditional and alternative measuring instruments, measured features, what can be done for reliable and valid measuring instruments, basic statistical calculations and how to use them for measuring and assessment."]

Other nine participants (21.95%) highlighted the portfolio collection process while indicating their learnings as one of them stated below:

[PT-22 "I comprehended the content of the Measurement and Assessment Course more shortly and genuinely. I learned what should be done for revealing a nice product. Most importantly, before I become a teacher, I did such a homework that I will expect from my students and I learned by living personally the acquisitions and learning process of it."]

On the other hand, five prospective teachers (12.20%) focused on their studying habits regarding their learnings. One of them stated the below words about this issue:

[PT-35 "I learned being neat, tidy, planned. I learned studying regularly in a weekly manner. ..."]

According to the findings regarding the learnings of the participants, it was seen that in general means, P-WS process helped prospective teachers in learning mainly the content of the course and portfolio collection process. However, other learnings such as learning to study regularly and neatly indicated by few participants were also valuable.

Problems of the P-WS process

The problems which prospective teacher came across during the P-WS process were also investigated. According to the views of the participant prospective teachers, nearly half of them (53.66%) did not come across any problems during the process. They expressed this situation such as the below examples:

[PT-7 "I did not have a problem during the portfolio collection process. The works were quite clear. Because our instructor helped us during the course, I did not have a problem."]

[PT-18 "I did not have any problems. Towards the knowledge that I learned during the course, I completed the works easily."]

The remaining participants indicated few problems given on Table 6.
Table 6: Problems of the P-WS process

<table>
<thead>
<tr>
<th>The themes related to problems</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coming across the difficulty of doing the worksheets of the missed lectures</td>
<td>11</td>
<td>26.83</td>
</tr>
<tr>
<td>Coming across the difficulty of doing statistical calculations</td>
<td>4</td>
<td>9.76</td>
</tr>
<tr>
<td>Coming across the difficulty of writing aims and objectives</td>
<td>2</td>
<td>4.88</td>
</tr>
<tr>
<td>Losing the worksheets</td>
<td>2</td>
<td>4.88</td>
</tr>
</tbody>
</table>

The most indicated problem was coming across the difficulty of doing the worksheets of the missed lectures as showed on Table 6. Because the worksheets were studied during the lecture hours with the supervision of the instructor, the participants found worksheets difficult when they had missed the related lectures. 11 participants (26.83 %) indicated this problem and one of them expressed the situation as the following:

[PT- 26 “I had difficulty while filling and understanding the worksheets of the weeks that I did not attended the course.”]

In addition to the above problems, four participants (9.76 %) focused on doing statistical calculations as a problem. They indicated this problem as the below two example:

[PT- 21 “Because we’re a social weighted class, after a very long time, we had a misperception of mathematical calculation. But with the help of the practices conducted in the classroom, this misperception ratio was decreased to a minimum level.”]

[PT- 38 “I had a little bit problem on statistical issues nevertheless afterwards I seen that they were not too difficult.”]

According to the above examples, especially at the beginning of the process, the prospective teachers studying on social sciences had difficulty of conducting statistical calculations. However, this problem was not the case at the end of the P-WS process since they learned how to handle statistical calculations.

In addition to these problems, few participants indicated two more problems which were themed as coming across the difficulty of writing aims and objectives and losing the worksheets. Writing suitable aims and objectives requires hard work so that two participants complained about this issue. Other two participants focused on the lost worksheets that they studied during the class hours. Fortunately, all of the worksheet were reachable from the photocopy center of the faculty and the participants should have filled in the lost worksheets again. According to the views of the prospective teachers regarding the problems of the P-WS process, it is possible to infer that, in general mean, the P-WS proceed almost well apart from the few problems indicated above.

**DISCUSSION**

Benefits of the portfolio collection during the learning-teaching process are widely known and used in educational settings. Nevertheless, content of the portfolios changes according to the aims and objectives of the course program. In the current study, the required components of the prospective teachers’ portfolios were the worksheets designed according to the measurement and assessment course program.

In the present study, the components of the prospective teachers’ portfolios were questioned and it was seen that the portfolios included more components than the required ones. This finding could be taken as a signal of the benefits of providing flexibility regarding the components of the portfolio to the learners. With the help of this kind of flexibility, the learners could be able to include whatsoever they like into their portfolios to promote their learning regarding the topic studied.

The flexibility of including relevant components into the portfolio could serve learners to improve their understanding regarding the issue studied and follow their development process. The difference of the P-WS
process was the worksheets studied during the lecture hours by the prospective teachers in peers or small groups with the supervision of the instructor. The findings regarding the P-WS process revealed that the participant prospective teachers enjoyed the process and benefited. The positive views of the participants could not be only dedicated to portfolio collection, but also to worksheets studies during the course. Other studies related to worksheet usage for various educational purposes generally revealed positive results (Johnson, et al., 1997; Pee, et al., 2002; Roth, et al., 2003; Yaşkıran, 2005; Atasoy & Akdeniz, 2006; Çınku, 2007; Özay-Köse, 2010; Yeşilyurt & Gül, 2011; Göçer, 2012; Turan, 2012; Kutluca & Baki, 2013). According to the literature and the results of this study, worksheets facilitate learning, provide enjoyable learning experiences, increase motivation and academic achievement, and increase retention.

In addition to the benefits of using worksheets during the learning-teaching processes of the courses for more meaningful learning, as in the P-WS process, on its own, portfolio collection reveals very positive results when it is used for educational purposes. The related literature regarding the portfolio usage in educational setting highlights the positive effects of portfolios on the learners’ attitudes, motivation, self-confidence, responsibility, learning, success, researching abilities, self-assessment ability and creative thinking skills (Smith & Tillemann, 2001; Uzun, 2006; Bahçeçi & Kuru, 2008; Bedir, Polat & Sakaci, 2009; Ayva, 2010; Bal, 2012; Aydin & Kocalar, 2014).

Portfolio process itself requires active student engagement. P-WS process of the current study encouraged participants to be active during the learning-teaching process of the course. During the course hours, after the lecture activity of the instructor, prospective teachers studied on the worksheets in peers or small groups. These activities provided opportunity for student-student interactions. Meanwhile, the instructor supervised the working groups while they were studying on worksheets and provide them immediate feedbacks. Thus, more learner-instructor interaction was assured in addition to learner-content interaction which was revealed during their studies on worksheets. These three types of interaction is one of the key factors for enhancing more meaningful learning (Garrison & Anderson, 2003). According to the findings of the study, with the help of active engagement of participants to the learning-teaching process and more interaction because of the P-WS, a series of learning outcomes were revealed.

One of the other supportive factors for more meaningful learning is formative assessment. With the help of formative assessment, following the learners’ works and providing feedback are possible. Portfolios might be used for either formative or summative education purposes (Hult, 1996) or both. Indeed, in respect to the traditional measuring and assessment methods, portfolio assessment is found to be more effective (Deveci, Ersoy & Ersoy, 2006; Bahçeçi & Kuru, 2008; Acar & Anıl, 2009). In the current study, portfolios were collected and assessed two times in a term; before the mid-term and final exams to help learners in realizing their drawbacks and revise their works. Actually, both assessments worked as formative since the participants were provided with feedbacks and a chance for revision studies on their worksheets. However, in the present study, views of the prospective teachers specifically on the first assessment which was called as mid-assessment were asked because instructors generally collect and assess the portfolios at the end of the course. The views of the participants supported the virtue of mid-assessment of the portfolios. In general means, participant prospective teachers found the mid-assessment very useful. Similar results regarding the advantages of formative assessment facility of the portfolios were revealed in other studies (eg. Deveci, Ersoy & Ersoy, 2006; Bahçeçi & Kuru, 2008; Ayva, 2010).

On the other hand, during the assessment studies of the portfolios, grading or not the portfolio studies is a discussed issue (Danielson & Abrutyn, 1997). In the current study, the portfolios of the participants were graded, and this grades were not only dedicated to the whole portfolios, but also to each worksheet inside them. The prospective teachers did not mentioned any negative aspect of this grading system of the P-WS process. On the contrary, they highlighted their satisfaction about gaining their expected grades and the assessment criteria. However, on another study, prospective teachers indicated their negative views related to the assessment and grading of the worksheets (Atik-Kara & Kürüm-Yapıcıoğlu, 2013). In this context, it is possible to infer that grading the works of the learners on their portfolios might produce positive results as the
case of this study only if the formative assessments were conducted and the criteria were accepted by the learners.

According to the results of the present study, the P-WS process was almost approved by the participant prospective teachers though few problems were emerged. The most cited problem was the difficulty of doing the worksheets of the missed course hours. During the course hours of the current study, the instructor explained the worksheets and guided to the prospective teacher while they were studying on them and provided feedback. Therefore, it was more difficult to understand and fill-in the worksheets when the participants did not attend to the related course hours. Another reported problem was the difficulty of conducting the statistical calculations. Because of the social backgrounds of the participant prospective teachers, their difficulty with statistics is understandable. In another study which investigated the attitudes of the prospective teachers towards the measurement and assessment course revealed that the attitudes of the prospective teachers studying the numerical fields such as science education or mathematic education were higher than the learners of the social weighted fields (Şural, 2014). Another study (Gencel & Özbaşi, 2013) which investigated the perceived levels of competence towards the measurement and assessment revealed the significance difference according to the departments of the prospective teachers. However, in the current study, the views of the participants who indicated this problem showed that fortunately the difficulty level that they lived was decreased during the term. This finding could be also taken as one of the benefits of P-WS.

CONCLUSION AND RECOMMENDATIONS

It is possible to indicate that according to the participant prospective teachers of the current study, they completed the P-WS process with mainly positive views and gained the objectives of the measurement and assessment course. They also broadened their learning outcomes with the help of the P-WS process of the study. As Danielson and Abrutyn (1997, p.9) indicated, “the magic of portfolios lies not in the portfolios themselves, but in the process used in creating them…” In this sense, blending the advantages of both worksheets and portfolio collection into the P-WS process worked almost well according to the prospective teachers. In any educational settings convenient for applying portfolio and worksheet assignments, P-WS process could be conducted to ensure more meaningful learning and long-term retention. For the future studies the followings were recommended:

• In addition to the instructor’s assessment results, prospective teachers could grade their and peers’ portfolios.
• E-portfolios might be more convenient. Thus P-WS process might be conducted through blended learning.
• A detail tutorial related to the worksheets might be prepared for the prospective teachers who could not attend the class.
• An adaptive educational hypermedia system could be developed to address different learning styles of the prospective teacher. In such system, the media and worksheets might be adapted to learners according to their learning preferences.

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REFERENCES


IMPACT OF STRESS, SELF-ESTEEM AND GENDER FACTOR ON STUDENTS’ ACADEMIC ACHIEVEMENT

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ABSTRACT

The current study is conducted to evaluate the impact of stress and self-esteem and gender’s effect on students’ academic performance in selected private universities of Pakistan. Three hundred students from different private universities of Pakistan were surveyed using cluster random sampling technique by means of Rosenberg self-esteem scale and perceived stress scale questionnaires. Factor, regression analysis, correlation, and t-test were employed. The findings revealed that self-esteem and stress are strongly correlated with each other but gender has no significant impact on students’ GPA, level of stress and self-esteem of the surveyed students. Moreover, when impact of self-esteem and impact of stress on GPA were analyzed discretely, it was found that both of these cognitive factors did not significantly correlate with the academic performance of students. Hence, this study revealed that the level of stress and self-esteem are not as influential on academic performance of students in private universities as it is affirmed in the literature available on the subject matter.

Key Words: Stress, Self-esteem, Academic Performance, GPA, Gender-based academic performance.

INTRODUCTION

There are assorted perceptions regarding the influence of stress in students’ performance. It is sometimes addressed in negative context; whereas, some find positive outcomes of stress in students’ life. Several stressors work behind the overall phenomenon of stress (Sheikh Khaloon, Kazmi, & Khalid, 2006). The most common stressors, in general, include ‘time urgency’, ‘work load’, ‘pressure to complete the certain task’ and ‘deadlines’. These stressors can either motivate or humiliate an individual in his or her educational journey (Von, 2011). In general, stress is associated with demands and resources. Demands can be everyday jobs, commitment, obligations or even uncertainty. Adhering to the adversities of stress, the purpose of the current study is to confer about stress and how it averts students to accomplish their educational goals. As perceived by a number researchers, human beings are significantly influenced by various psychological as well as physiological factors they experience in their everyday lives (Laura, Friedlander, Reid, Shupak & Robert, 2007). However, Von (2011) has found that stress is strongly associated with students’ educational performance.

Another common theme in the literature is that the students are faced with a unique set of stressors that can be overwhelming, and thus, the impacts their ability to handle a situation. Strategies to reduce stress associated with academic achievement among students are required to be devised by the educational institutions (Saipanis, 2003). In recent decades many studies have been conducted on stress related problems and stress management (Stumm, Sophie Benedikt, Premuzic & Tomas, 2011). Stress has been a common problem that exists among individuals regardless of age, gender and location. Universities are producing graduates and are devotedly working on their academics. But very few realize that only spending on academics
does not benefit students in the long run (Zahra, 2010). The pass outs of any educational institutes represent the devotion towards student. It is a long term investment when people work not only on well-being in the academic performances but also as a unique being (Tahir, 2010).

Rizwan (2011) has identified in his study that academic stress has led a number of university-going students towards depression and hopelessness and in extreme cases, towards suicidal attempts as well. Students in their life include different commitments towards success, uncertainties regarding the future and the related difficulties that pressurize the students (Inam, Shireen, & Haider, 2011). Students due to stress ultimately do not carry out their plans as it is (Khan, Ahmed & Nawaz, 2011). Human beings are significantly influenced by various psychological as well as physiological factors they experience in their everyday lives (Laura, Friedlander, Reid, Shupak & Robert, 2007). Moreover, when it comes to academic concert, specifically, Von (2011) has found that stress is strongly correlated with students’ academic performance. Despite of the fact that increasing educational competitions is reaching to its ceilings, it has been witnessed by many educational institutes in Pakistan that their students have not been giving their best shots in their academic fields. However, self-esteem has appeared to be a key driving factor that can perk up students’ academic performance significantly (Inam, Shireen, & Haider, 2011).

**REVIEW OF RELATED LITERATURE**

Experts define “Stress” as the vigorous state of affairs in which a person is dealt with certain opportunities, demands, or resources that are associated with the wishes which an individual is yearning for and for which the outcome is perceived to be both indistinct and imperative. There is already a lot of educational competition among the different private institutions in Pakistan and every educational institute needs to have a fair competition in these times (Khan et al., 2011). To achieve all these goals an educational institute should take care of the job stress which is faced by the students. From students’ perspective managing academic stress is more likely the way to enhance their productivity. Obviously a student knows better which problems he or she is facing in their curricula. There are many signs of educational stress which includes feeling depressed or anxious or over exhausted etc. There could be a major problem with a student’s social interaction if he or she is mentally stressed out (Laura et al., 2007). What have revealed above is enough to plinth the entire research work upon it. Stress and depression are turning out to be even worse than ever before. On the larger scale, the more the stressing environment at the educational institutes, the more will be the productivity hazards (Hanif, Tariq, & Masood, 2011).

The concepts of self-esteem and stress are closely related with each other. As suggested by Lazarus in his cognitive model of stress, self-esteem is among various personal beliefs that are crucial when it comes to the evaluation of environmental demands. While evaluating the external demands they are being observed as either “threat” or a “challenge.” However, those with high stress consider these demands as threats while those with high self-esteem beliefs evaluate these demands as a challenge (Zahra, 2010). A research conducted by Tahir (2010) found an interesting correlation between stress and self-esteem as the team of researchers observed certain levels of declination in self-esteem judgments of students due to high stress or anxiety. Similarly, Sheikh, Khaloon, Kazmi, and Khalid (2006) have identified that, the cumulative grade-point average (GPA) can have great impacts of both, the perceived stress and academic self-esteem. By the end of this study it is expected to acquire handful knowledge about the importance of these two concepts for the students’ academic success by comparing the influences of stress and self-esteem at the same time. This comparative aspect of the proposed study actually makes it exhaustive than the previously conducted researches.

**Relationship between Stress and Self-esteem**

To start with this discussion, a general perception can be taken into account according to which there exists a strong relationship between self-esteem and stress; however, different people have different notions regarding whether these two factors act on and influence one another (Windle & Windle, 1996). Majority of researchers have agreed upon the fact that whenever one’s self-esteem is low; it can leave some psychological effects on an individual that eventually render that person more vulnerable to stressful situations. On the other hand, with consistently increasing levels of stress, a healthy sense of self-esteem in an individual can be eroded with
the passage of time (Zautra & Reich, 1993). It is generally accepted fact that if the level of self-esteem is higher, it can protect one from being victim of stressful episodes; similarly, people with low levels of self-esteem can experience high stress within their surroundings. To better understand the correlation between stress and self-esteem it is necessary to revise the basis of these two cognitive factors from the literature. Those who possess higher self-esteem generally have positive approach for perceiving things; in addition, they are realistic with a distinctive self-image, which is followed by an understanding of both their merits and loopholes (Tubman & Windle, 1995). These researchers depict higher level of acceptance towards the circumstantial events they are surrounded with. It is researched by a number of researchers exploring the context that childhood is the stage where self-esteem actually starts building that can be improved or eroded later in life as per the events and situations that person goes through (Thombs, 2000).

When it comes to literal definition of Stress, it is defined as “the feelings of pressure and worry” (Swearingen & Cohen, 1985). There can be variety of causes of stress that vary with situation to situation; however, it is observed by various researchers that these feelings are often correlated with complex scenarios, overburdened responsibilities and concerns one may face in the real world. These feelings are typically more pronounced in people who are sensitive and think a lot. The perceptions of an individual regarding his or her situations are just as important as the actual facts associated with the given situation. For one person the given assignment may be a wonderful opportunity while for another, it is a terrible burden. Thus, it is all about one contemplates about his/her surroundings and life scenarios (Stein, 1991).

The point of interaction of self-esteem and stress is the perception one has. This is what our proposed study has concluded that those who experience higher levels of self-esteem are positive in their perceptions and usually assess their own capabilities positively and thus, these people are more apt to anticipate success in new endeavors. In turns, their anticipation of success makes the thought of embarking on new projects less stressful. As found by Swearingen and Cohen (1985), for people having low levels of self-esteem the interaction between self-esteem and stress can be relatively destructive. These are the individuals who have the feelings of helplessness, powerlessness, and ineptness majorly. In due course, the results proposed in this study reveals that any task seem more daunting to these individuals which can easily cause certain level of stress for them that they would even take ordinary challenges as the insurmountable ones.

It has been found in this research that the individuals having lower-than-average levels of self-esteem come up with a clear lack of assertiveness as one of the major side effects. This lacking assertiveness is likely to lead people with low self-esteem to a vicious cycle in which they start accepting more work than their own capabilities; which, in turn, can lead an individual to an increased level of stress. In such cases, self-esteem and stress, collectively, come up with extremely harmful feedback cycle (Zuckerman, 1989). Thus, it has been suggested by the majority of field experts that in such situations to overcome inappropriate assertiveness, proper training helpful in mitigating stress and thereby in aiding the recovery of self-esteem.

The overall results of the study in terms of relationship between stress and self-esteem identifies that positive and negative both sorts of hectic and tensed events are being experienced by youths of Pakistan. Throughout the country this certain rate of stress faced by the teenagers and youth remains almost the same. Only a little amount of difference is observed among the youth living in urban, rural and farming states (Ruganci, 1988). It is also observed that students who are more stressed during their early stages of academics are less stressed and feel high level of self-esteem by the end of final exams. However, those who were not successful experience less confidence among the students. And that is why the ratio between the unsuccessful events and less confidence is much greater than general stress and self-confidence. Therefore, it is suggested that parents, guardians and the trainers must pay complete attention to the impression on confidence for the events of which youth notify to be destructive (Johnson & McCutcheon, 1980). On the other hand, youth of developing countries, like Pakistan, have fewer opportunities; it can also be a reason that the confidence and self-worth of the youth is suffered at large (Powell & Enright, 1990).
Relationship between Self-esteem and Students’ GPA

The difference between academic achievement and self-esteem scores of students was examined as the second question of the present study. As a result of Pearson correlation applied between self-esteem and academic achievement, it was found that there is a significant difference between achievers and non-achievers on self-esteem. This result shows consistency with the literature. Studies that search global self-evaluation to academic achievements reveal the positive relationship between two variables (Marsh, 1990; Shunk, 1990; Hattie, 1992; Eccles, 1993; Bryne, 1996). There are also many studies that provided similar results between academic achievement and self-esteem (Alves-Martins et al., 2002; Bloom, 1977; Wiggins, 1994; Kimball, 1972). Thombs (2000) found that first-year college students with relatively low self-esteem were more likely to exhibit many problem behaviors, than those with higher self-esteem. Some examples included alcohol problems, poor time management, poor study habits, and self-defeating behavior, than those with higher self-esteem. Based on the cognitive adaptation theory, Taylor and Brown (1999) found level of self-esteem to be directly related to seeking social support and indirectly to actual support, physical health and adjustment to college. Self-esteem was also found to be the best of five predictors (including SAT scores) of academic motivation, which was them linked to grade point average two years later. On the other hand, college students with a low self-esteem tend to be unhappy, less sociable, more likely to use drugs and alcohol, and are more vulnerable to depression, which are all correlated with lower academic achievement (Wiggins & Schatz, 1994).

The research, made by Wiggins & Schatz (1994), has shown that self-esteem and academic achievement correlate directly to a moderate degree. Honors students tend to demonstrate higher academic self-esteem and competency. For them, this academic self-esteem seems to become a motivational factor (Moeller, 1994). For many college students their self-esteem is based or enforced by their academic success or achievements. According to study of Demo and Parker (2001), four theoretical principles; ‘social comparisons’, ‘reflected appraisals’, ‘self-perception’, and ‘psychological centrality’ have been suggested to explain the relation between academic achievement and self-esteem among children and adolescents. First of all, because of studying in competitive and grade-conscious educational institutions, one can constantly be reminded about the importance of his/her grades (psychological centrality). Second, one can have daily opportunities leading him/her to compare his/her performance with others (social comparisons). Third, the reaction of others/friends that are monitored or internalized (reflected appraisals). Lastly, personal determinations of success or failure shape one’s self-concept (self-perceptions).

Relationship between Stress and GPA of Students

As revealed by Byrne (1996) this non-significant correlation between the level of perceived stress and academic success during the middle and till the end of the semester can probably be explained by the fact that the students are already used to the system. Apart from that, it would not erroneous to establish here on the basis of implications of the findings extracted out so far that despite the fact that no-significant impacts of academic stress on academic performance has been found, other socio-economic stress factors are likely to increase from beginning of the semester to the middle of the semester. In addition, the findings suggested by Robison, Shaver and Wrightsman that on the whole there is no correlation between the level of perceived stress and the students’ academic performance. These results are correlated with the results proposed by Lackovic-Girgin (2003) in his study. According to Lackovic-Girgin (2003) the levels of academic stress experienced students are not significantly correlated with their GPAs. For many researchers, these findings can be surprising; but, in actual fact, these results are proposed on the basis of observed facts that students, by the end of the semester, are normally familiar with the schooling system they are enrolled in. by the end of the semester, students are only concerned about their final exams as they have been through all the class assignments and thus, the pressure is now over. As supported by Youngs (1999) as soon as the students enter the tertiary of their educational institution, they are unaware of how the quizzes, tests, assignments will be held throughout the semester which contributes to their overall stress levels but not the final grades because they still think that final exams are the most important stage where they can make up their grades.
Impact of Gender on Stress, Self-esteem and GPA

The impact of gender orientation on the levels of self-esteem or stress during students’ life has been analyzed in-detail in this study. For evaluating the difference between two genders with respect to stress and self-esteem, some independent samples t-test was applied. However, our results gave a clear picture regarding no significant connection between the level of stress and self-esteem and gender-factor of the students studying in private universities of Pakistan. These findings were not expected for the very obvious and general perception reported by a lot of researches that were conducted to support that there is a wide difference between male and female on self-esteem and stress score (Block & Robins, 1993, Güngör, 1989, Byrne, 2000). However, the review of literature has significantly mentioned that there are several contradictions among various researchers when it comes to study the correlation between gender and levels of stress and self-esteem, specifically among the students’ community (Smith 2002, Growe, 1980; Fenzel & Blyth, 1986). Most of the studies conducted to investigate the gender differences in context of self-esteem have clearly affirmed that the self-esteem score of adolescent female is usually lower as compared to that with the adolescent males (Block & Robins, 1993; Rosenberg & Simmons, 1975; Chubb, Fertman & Ross, 1997; Güngör, 1989; Byrne, 2000; Allgood-Merten & Stochard, 1991). Same results were found in context of stress and gender correlation e.g. (Chubb, Fertman & Ross, 1997; Güngör, 1989; Byrne, 2000; Allgood-Merten & Stochard, 1991).

Kearney-Cooke (2000) stated that self-esteem declines during adolescence, which may be the result of increasing cognitive ability and sensitivity to perceived social evaluation. There is a gap between adolescents’ view of their ‘real selves’ compared to their ‘ideal selves’ widens and self-esteem declines. The research indicates that this drop is more profound for girls than for boys (Eccles, Flanagan, & et al., 1999). There are also studies that mentioned females view themselves more positively than do males (Thornberg & Jones, 1992).

These are not just latest research findings that stress and self-esteem are not correlated with the gender factor of the students; instead, in consistent with the current studies on the subject matter, a study was proposed by Maccoby and Jacklin in (1999), in which the researchers came up with conclusions that the two genders have no difference in terms of self-esteem and stress levels. Following the same trend in literature, Smith (2002) came up with the conclusions that no significant difference was found between male and female on stress and self-esteem scale. Apart from these studies, the researched literature has depicted that there are many studies proposed by various different researchers in different eras and have explained that no significant gender difference occur on stress and self-esteem scores (Bosacki, Innerd, & Towaon, 1979; Growe, 2000; Bohan, 1993, Guinn & Vincent, 2002).

Statement Of The Problem

The meta-analysis of studies covering relationship of self-esteem with academic career of students comes up with evidential facts that usually the indices of academic self-esteem are strongly correlated with the academic outcomes of the students; on the other hand, less association occurred with the more generalized self-esteem measures (Multon & Lent, 2007; as cited in Zahra, 2010). This signifies that the academic outcomes are not attributed to the general self-esteem measures and thus, cannot be found by them (Khan et al., 2011). It is observed by Bong (2001) (as cited in Rizwan, 2011) that enhanced performance and good grades are positively associated with academic self-esteem. Besides, self-esteem among the students is responsible to motivate them in their educational activities and thus, stands for the students’ determination to have command over several challenging academic tasks been assigned to them during their course duration (Govt. of Pakistan 2001; as cited in Khan et al., 2011). It allows students to efficiently use their acquired knowledge and skills in their enrolled course. In addition, another research conducted by Hanif in (2011) came up with positive associations between students’ academic devotion and academic self-esteem which ultimately ends up with high academic performances by the students.

Objectives Of The Study

Following objectives are anticipated to be accomplished in this study:

1. To investigate empirically the correlation between academic self-esteem and stress among undergraduate students of private universities in Pakistan.
2. To analyze the effect of self-esteem and stress on GPA among undergraduate students of private universities in Pakistan.

3. To examine the effects of gender on academic success of undergraduate students studying in private universities of Pakistan.

Research Hypothesis
It is hypothesized in this study that:
H1: Stress and self-esteem are negatively correlated.
H2: Self-esteem and stress can impact academic achievement.
H3: Gender factor is influential for academic achievement.

RESEARCH METHODOLOGY AND SAMPLING TECHNIQUE

The targeted population was the students studying in private universities of Karachi city, Pakistan. Therefore, using a cluster random technique, 300 students of business administration were selected from three private universities. The quantitative approach interprets and presents results by utilizing data associated with measurements and implementing numerical data. Various statistical techniques are applied to the numerical data obtained from research areas through research subjects and other sources. The statistical analysis of data collected during research in the quantitative approach is performed using averages or measures of central tendency. The relationship among the variables of the collected data in a population is tested by applying statistical methods such as regression and correlation (McNabb, 2002). In research contexts, correlational studies are major types used by majority of researchers for analyzing relationships between different comparable variables. Despite the fact that correlational research methods can suggest whether two variables are correlated, this correlation does not always help in finding what change one variable can cause on another variable.

Theory of correlated variables affirms that any 2 quantitative variables can be correlated as long as the researcher has scores on these variables from the same participants. However, when it is already known that the two variables are not correlated with each other, then adopting this research approach to collect and analyze data would probably be a waste of time (Lodico, Spaulding & Voegtle, 2006). However, researchers used prediction design to predict certain outcomes in one variable from another variable that serves as the predictor (Creswell, 2008, p. 361). The dependent variable of the study was GPA of undertaken sample population, whereas, gender, stress and self-esteem were treated as independent variables.

Research Instruments
The instrument was adopted from Rosenberg self-esteem scale (Rosenberg, 1965) and perceived stress scale (Cohen, Kamarck & Mermelstein, 1983). In psychology, to measure the stress perception among people, Perceived Stress Scale Questionnaire is commonly used. It measures the degree of stress in one’s life by exploring upon the scenarios he/she is going through. The unpredictability, uncontrollability, and overloads perceived by the respondents in their lives can be measured with this instrument (Cohen, Kamarck, & Mermelstein, 1983). Similar to questionnaires used in social surveys, Rosenberg Self Esteem Scale is a uni-dimensional scale, designed with ten items listed on it having four-scale answer for the participants ranging from strongly agree to strongly disagree. Due to its accuracy, its reliability and validity as a quantitative tool for self-esteem assessment are largely acknowledged (Rosenberg, 1965). The internal consistency and reliability of the scale, as suggested by Rosenberg (1965) ranged from 0.85 to 0.88 for the majority of samples. On the basis of samples used by Shin (1992) for evaluating responses of Korean respondents, the alpha coefficients for this scale ranges from 0.71 to 0.73. On the other hand, as reported by Supple, Su, Plunkett, Peterson and Bush (2012) the alpha coefficient of the scale was found to be 0.88. These studies yielded standardized alpha coefficient 0.78 for the Korean version and 0.88 for the English version. However, on the whole the alpha coefficient score for this scale was 0.87 for this global self-esteem scale. This study used these two instruments to ascertain the research objectives.
KEY FINDINGS AND DISCUSSION

Demographic information of the respondents is presented in Table 1 below, which is based upon their age, gender, last semester’s GPA. Majority of students surveyed in this study had GPA somewhere between 2.6 and 3.5. This classification was irrespective of students’ age and their gender. Table is showing frequency and percentage of GPA of students. 35.6% of the students secure 2.6-3 GPA in their last semester and 35% secure 3.1-3.5 GPA. 14.9% of the student had 2-2.5 GPA whereas 11.6% students had 3.6-4.0 GPA. Table 1 shows the frequency and percentage of age group of students. 47.9% of the students were 18-20 years of age which is the most frequent age group. Second highest percentage is from the age group of 21-23 years which is 46.2%. 5.3% of the students were 24-26 years of age and only 0.7% of the students were above 26 years of age. Majority of our respondents belonged to the age group of 18-23. Thus, this age group ideally represents the undergraduate students in the country. The ratio of male respondents was slightly greater than that of the female ones. As represented in Table 1, (56.4%) male students and (43.6%) female students participated in the study.

Table 1: Demographics of Students

<table>
<thead>
<tr>
<th>GPA of Students</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 2</td>
<td>9</td>
<td>3.0</td>
</tr>
<tr>
<td>2.6-3</td>
<td>45</td>
<td>14.9</td>
</tr>
<tr>
<td>3.1-3.5</td>
<td>108</td>
<td>35.6</td>
</tr>
<tr>
<td>3.6-4</td>
<td>106</td>
<td>35.0</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>11.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-20</td>
<td>145</td>
<td>47.9</td>
</tr>
<tr>
<td>21-23</td>
<td>140</td>
<td>46.2</td>
</tr>
<tr>
<td>24-26</td>
<td>16</td>
<td>5.3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender-Wise Demographics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Male</td>
<td>171</td>
<td>56.4</td>
</tr>
<tr>
<td>Female</td>
<td>132</td>
<td>43.6</td>
</tr>
<tr>
<td>Total</td>
<td>303</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2: Correlation between Stress and Self-esteem

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stress</th>
<th>r</th>
<th>sig(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self esteem</td>
<td>-.215</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

This Table shows significant Correlation between stress and level self-esteem of the participants (N= 303). Correlation is significant at the 0.01 level (2-tailed). The statistics showed in Table 2 above depicts that there is significant negative correlation between stress and self-esteem among the students of private universities of Pakistan.
Table 3: Correlation between GPA and Stress

<table>
<thead>
<tr>
<th>Variable</th>
<th>GPA</th>
<th>( r )</th>
<th>sig(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>0.044</td>
<td>0.441</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 presents the correlation between GPA and stress of the students. Results in the Table shows insignificant correlation between stress and GPA of students at 0.01 level. This signifies that students’ GPA is not affected by the stress they faced during their academic journey and instead, they manage to cope up with their stress and maintain their desired GPA.

Table 4: Correlation between Self-esteem and GPA

<table>
<thead>
<tr>
<th>Variable</th>
<th>GPA</th>
<th>( r )</th>
<th>Sig(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self esteem</td>
<td>0.039</td>
<td>0.500</td>
<td></td>
</tr>
</tbody>
</table>

Results in the Table shows insignificant correlation between self-esteem and GPA of students at 0.01 level. This signifies that the GPA is not correlated with the levels of self-esteem of these students.

When it comes to describe the variability of the observed and correlated research variables, a statistical method called Factor analysis is used by majority of researchers. This analysis is performed by identifying the variation in terms of a potentially lower number of unobserved variables that are termed as factors (Tucker & MacCallum, 1997). To put it simple, a scenario can be taken into account in which the variations in three or four observed variables mainly reflect the variations in fewer unobserved variables. This means that while performing factor analysis, researchers search for only such joint variations in response to unobserved latent variables. The Bartlett’s Test of Sphericity relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study. The world-over accepted index is over 0.6. Also, for Factor Analysis to be recommended suitable, the Bartlett’s Test of Sphericity must be less than 0.60. Table below shows the KMO value 0.677 which means factor analysis can be applied in this study.

Table 6: KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .677 |
| Bartlett’s Test of Sphericity | Approx. Chi-Square | 648.746 |
| df | Sig. | .000 |

Table 7 shows the cumulative percentage of variation explained by the extracted components. Total variance explained is found 24.01. Percentage of variance for component 1 i.e. self-esteem is 12.2 and for component 2 i.e. perceived stress is 11.7.

Table 7: Total Variance Explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Rotation sums of squared loadings</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>total % of variance Cumulative %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2.456 12.281 12.281</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.346 11.730 24.011</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table of Rotated Component Matrix below shows the correlation of both components i.e. self-esteem and stress with each item.
Table 8: Rotated Component Matrix

Rotated Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>Self Esteem</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Esteem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take a positive attitude towards myself.</td>
<td>.607</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt confident about your ability to handle your personal problems? at times, I think I am not good at all</td>
<td>-.568</td>
<td></td>
</tr>
<tr>
<td>I feel that I have a number of good qualities</td>
<td>.545</td>
<td></td>
</tr>
<tr>
<td>All in all, I am inclined to feel that I am a failure.</td>
<td>.472</td>
<td></td>
</tr>
<tr>
<td>I certainly feel useless at times</td>
<td>.472</td>
<td></td>
</tr>
<tr>
<td>I feel I do not have much to be proud of.</td>
<td>.431</td>
<td></td>
</tr>
<tr>
<td>I am able to do things as well as most other people.</td>
<td>.424</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt that you were unable to control the important things in your life?</td>
<td>.667</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt nervous and &quot;stressed&quot;?</td>
<td>.635</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td>.612</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you been angered because of things that were outside of your control?</td>
<td>.608</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?</td>
<td>.555</td>
<td></td>
</tr>
<tr>
<td>In the last month, how often have you found that you could not cope with all the things that you had to do?</td>
<td>.419</td>
<td></td>
</tr>
<tr>
<td>On the whole, I am satisfied with myself.</td>
<td>-.311</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Table 5: Independent Samples t-test for Gender

<table>
<thead>
<tr>
<th>Variables</th>
<th>Gender</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>Male</td>
<td>171</td>
<td>3.24</td>
<td>.98</td>
<td>301</td>
<td>-2.6</td>
<td>.009</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>132</td>
<td>3.53</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress level</td>
<td>Male</td>
<td>171</td>
<td>19.2</td>
<td>4.51</td>
<td>301</td>
<td>-.533</td>
<td>.595</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>132</td>
<td>19.5</td>
<td>5.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>Male</td>
<td>171</td>
<td>18.1</td>
<td>3.4</td>
<td>301</td>
<td>1.14</td>
<td>.254</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>132</td>
<td>17.7</td>
<td>3.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to the Table 5 the t-test resulted in the fact that there is no difference of gender, level of self-esteem and GPA of students.

Since this research has taken quite famous private universities into account for collecting primary data, these results are likely to be applicable on the students studying in the most private universities of Pakistan. It has been generally observed that in order to continue studying at reputed private universities in Pakistan, students are obliged to not only clear the entrance test but also to acquire as maximum points from the university entrance exam as possible. However, this requirement is comparatively high for the public universities in Pakistan. Therefore, it is usually successful for the students to get admission in any reputed private or public universities.
university of the country. But for some students, this challenging event can be the reason of self-confidence and self-esteem, on the whole. Or they are able to face the challenge due to their pre-existing self-esteem due to the fact that if students have high level of self-esteem, they are more successful in their academic life. As supported by Branden (1994) students are required to attain certain levels of self-esteem prior to be willing for persevering long enough to succeed in stressful life events. However, as discussed in literature, in most of the cases the idea that achievement is more likely to be the result rather than the cause of self-esteem is generally accepted. Thus, it can be said that self-esteem and stressful life events are intimately related to one another.

Then we have discussed the impacts of stress on academic success and it was found that on the whole there is no correlation between the level of perceived stress and the students’ academic performance. It was found that the levels of academic stress experienced students are not significantly correlated with their GPA. These results are proposed on the basis of observed facts that students, by the end of the semester, are normally familiar with the schooling system they are enrolled in. by the end of the semester, students are only concerned about their final exams as they have been through all the class assignments and thus, the pressure is over till the end of the semester.

Summarizing above discussion with respect to our findings of study, stress, tension, anxiety have a strong impact on the self-confidence and self-esteem. Besides this, there are many other factors that affect self-confidence at large. But then again the responsibility goes to the parents, guardians and others. They are not supposed to focus only on the results caused by the stress and tension but also to measure about their likely damages that could occur; as the research found that less confidence and self-esteem also plays a vital role in de-motivating youths. This study has found negative correlation between self-esteem and academic and life stress, which indicates that students with high self-esteem are less stressed than those with low. Zuckerman (1989) suggests that this may be because greater self-esteem reduces stress by fostering social resources and effective coping. One solution can be enhancing students’ ability to cope with stress by enhancing self-esteem of students. As Abouserie (1994) indicated that self-esteem can serve as variable moderating the impact of academic and life stress and students’ personality variables should be taken into account in predicting reaction to those stressful life events.

From the findings it is revealed that there is no significant correlation between academic stress and academic performance of the students studying in private universities of Pakistan. The results imply that generally, the level of perceived stress increases as the students move to the middle and decreases as the students move towards the end of the semester as till then they have acquired certain knowledge of the course they have been taught throughout the semester. As proposed by Womble’s (2003) the students feel much pressure as they freshly enrolled into any course at the starting of the semester. This is probably due to the fact that the students are not aware of the course content and its technicalities at the beginning and they are given any tests and assignments at the beginning of the semester, they get over-burdened and confused which can increase the level of stress on them. However, when more tests and assignments come into their life at the middle of the semester, they get used to of the course load and now are familiar with the knowledge base of the enrolled course and therefore, depict lower stress level as compared to the stress level at the beginning of the semester.

CONCLUSION AND RECOMMENDATIONS

Since the aim of the study was to explore the extent to which stress and self-esteem are influential for university students in Pakistan, results reflecting upon the correlation between self-esteem scores and stress of students were analyzed in context of gender orientation and academic achievement. Apart from that, it also holistically highlights the relationship between self-esteem and stressful life events experienced by the students’ community in the country. The results affirmed that no significant relationship between stress, self-esteem and academic achievements exists. Moreover, gender of the students also show insignificant relationship with stress, self-esteem of the students. This study is conducted to assure that students will be benefited in achieving their academic goals. This is significant to draw attention towards the issues related to stress can be resolved by other cognitive factors like self-esteem which helps in upgrading academic
achievements of students. It is assumed that the study regarding effects of stress on academic performance of university students will help not only students and teachers at academic level but also bring awareness among common people in understanding the pros and cons of stress in youth. Overall, this study will help us to find out the strategies that can be applied to educational context in order to help students minimizing and to cope up with their stress.

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References


TEACHING VARIANCE AND DEGREE OF FREEDOM THROUGH COMPUTER-ASSISTED INSTRUCTION

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ABSTRACT

The principle objective of the current study is to teach variance and degree of freedom by means of computer-assisted instruction. Variance is regarded as one of the most important topics to learn, degree of freedom is a concept considered as one of the most difficult concepts to teach and learn. The preliminary results on 15 faculty members showed that they had limited knowledge related to these concepts. Based on this need analysis, we developed a video tutorial to teach these concepts using Flash and Camtasia Studio software. We also considered visual design and instruction principles when developing the tutorial. The tutorial is made up of three parts: population variance, degree of freedom and sample variance. The effectiveness of our tutorial was tested on these 15 faculty members. The findings revealed substantial improvement in their knowledge about these two concepts. They were very satisfied with the tutorial and gave us valuable insight into what can be done to promote the instructional value of our tutorial. We strongly believe that the video tutorial we developed has a great potential to help learners of statistics to grasp these concepts.

Key Words: Variance, degree of freedom, statistics learning, computer-assisted instruction.

INTRODUCTION

Multimedia can be defined as the presentation of knowledge as a combination of words and figures (e.g. video). Research studies showed the positive effects of multimedia on learning (Mayer, 2007). For example, Plasschaert, Cailleteau, Ernie (1997) found the positive effects of multimedia interactive tutorial on learning endodontic problem-solving in the field of medicine. Lloyd and Robertson (2012) examined the role of screencast tutorials on enhancing student learning of statistics. Screencasting can be defined as capturing what is done on the computer screen with synched audio commentary (Udell, 2004). These researchers found that after controlling for previous math experience, math and computer anxiety, screencast tutorials were effective in promoting student learning of statistics.

There is empirical evidence that multimedia (specifically videos) is a beneficial tool that helps people learn statistics. Our paper is aimed at developing a screencast video tutorial that teaches two important topics in statistics: variance and degree of freedom. Many researchers agree that concept of degree of freedom is a difficult concept to teach and learn (Everett, 2002). The difference between sample and variance can be understood in the context of degree of freedom. Everett (2002) explained how difficult concept degree of freedom is by saying “Degrees of freedom: An elusive concept that occurs throughout statistics” (p.111). Eisenhauer (2008) gave a good real life example to explain the degree of freedom. Suppose that there are three tasks required to be finished, which are nap, eat and read. Each task lasts 1 hour. We are required to schedule these tasks from 1 to 4 PM. We are not completely free in doing this. If we decide to eat at 1 PM, read at 2 PM, we are not free to choose the time of nap. It has to be at 3 PM. In this example, the degree of freedom is 3-
1=2. That means, the time of one task is not free to vary. Degree of freedom can be defined as the number of observations which are free to vary (Schwartzman, 1994).

METHOD

Participants
The participants consisted of 15 faculty members from 5 different departments (4 instructional technology, 4 biology education, 3 music education, 2 science education, 2 early childhood education). 7 of the participants were female, 8 were male. The participation was voluntary.

Research Instrument
The data collection tool consisted of open-ended 7 questions. 2 of the questions were related to degree of freedom. The remaining questions were concerned with variance and deviation. Questions included:
1) What do you understand from variance? Give an example.
2) Variable X1 has values of 3, 4, 5 Variable X2 has values of 2, 4, 6. Which variable seems to have a higher variance? Explain your response.
3) The variable X has values of 1,3,5,7 and 9.
   a) Calculate the variance of X if these numbers come from a population?
   b) Calculate the variance of X if these numbers come from a sample?
4) a) What do you understand from degree of freedom in statistics? If possible, give an example.
   b) One researcher wants to estimate the mean score of 1000 students in an exam. To meet this purpose, he collected data from 25 students? What is degree of freedom in this example?
5) There are three observations in the variable X. The first observation is -2 units away from the mean. The second observation is -1 unit away from the mean? What is the deviation of third observation?

Video Tutorial
A video tutorial aimed at teaching variance and degree of freedom to learners was developed for this study. It is made up of 3 phases. The first step is about teaching population variance. The second step is aimed to provide the learners with a conceptual understanding of degree of freedom. The third step teaches sample variance. All of these steps were thought in separate pages. Picture 1 shows the screen shots of these three pages.

Picture 1: Screen Shots
Data Analysis
Data for this study were collected through pretest, posttest, interview and observations. Descriptive statistics including the number of questions answered correctly in pretest and posttest were provided. This analysis allowed us to examine the improvement of faculty members’ knowledge with regard to variance and degree of freedom. Interview questions included “What do you think about this software in terms of learning?”, “Do you have any suggestion to improve the instructional value of this tutorial?”, and “Did you understand the logic behind the calculation of variance and standard deviation?”

FINDINGS

Pre-Test Observations
When we asked the faculty members to define variance, 5 of them were able to answer it correctly. 2 of them said that variance is the square root of standard deviation. This showed that they know that there is a relationship between variance and standard deviation. However, they failed to give the correct answer. The correct answer was: standard deviation is the square root of variance. One faculty member wrote down the formula of sample variance. Another faculty member said that variance is the number which is repeated most. The other faculty member said “I heard variance 1000 times; however, I do not know what it means”.

When they were asked what they understand from degree of freedom, none of the faculty members knew what degree of freedom is. Only one faculty member said it is n-1; however, he said he had no idea why it is used in statistics. 3 of the faculty members were able to correctly answer the question which requires the use of formula n-1 to find degree of freedom. 4 faculty members were able to correctly answer the question regarding deviation.

In general, faculty members who showed poor performance in the pre-test attributed their failure to several reasons listed below.
- “We took a number of statistics course. But, everything has been forgotten.”
- “I learned these concepts in my PhD. I do not remember now”
- “I get help from my colleagues who knows statistics when I am required to use statistics”
- “I do not know these topics; however I am very enthusiastic about learning them.”
  3 of the faculty members took the pragmatic approach. They were not willing to watch the tutorial at first.
  Their responses included:
- “What am I gonna do with learning these topics? There are statistical packages that help me calculate variance and standard deviation.”
- “I do not know these topics very well. However, if I want, I can learn them using the Internet”

One faculty member said “I do not have sufficient capabilities to learn these concepts. Although I have never seen the video you prepared, I strongly believe that I can’t do it”. When we were in one of the participants’ office for his study, his colleagues came to the office. Although we did not invite him for his study, he wanted to be a participant in this study.

Post-Test Observations
After watching the video tutorial, the opinions of two faculty members who had pragmatic views have changed drastically. One of them said: “I got a good understanding of these concepts after seeing the video. I was able to clarify some misconceptions regarding these concepts”. This faculty member was able to answer all of the questions correctly and gave his own examples related to variance and degree of freedom. The other faculty member who initially had pragmatic approach said:

“Frankly, I searched these topics after the pre-test. I understood that I had misconceptions about variance. I thought variance is the square root of standard deviation. However, the opposite was true. Although I looked
at many websites explaining degree of freedom, none of them enabled me to learn it. However, your video was
perfect in that it explained me degree of freedom in simple, easy and comprehensible ways”.

The faculty member who was not able to answer none of the question in the pre-test watched the video
without stopping. He was the only faculty member who watched the video without stopping. This person
answered all of the questions correctly in the post-test and gave his own examples related to variance and
degree of freedom. He further indicated that degree of freedom was not as difficult as he thought. The faculty
member who had very low self-efficacy learning new statistical concepts still struggled to answer the questions
after seeing the video.

One of the faculty members found the instructional strategy used in the tutorial interesting. He said:
“In Turkey, we give the definition of the concepts first. Then, we give an example related to those concepts.
This tutorial does the opposite. It gives an example first. Then it gives the definition of variance. This manner is
interesting to me. Since professor Serkan took his PhD in the USA, I think you designed this tutorial in this
manner. Although this way of teaching seems to be fine, I think before you start explain what the variance is by
giving examples, you first need to explain why variance is an important concept in a scientific research”.

Table 1: Results of Pre-Test and Post-Test

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Q2</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Q3-a</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Q3-b</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Q4-a</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Q4-b</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Q5</td>
<td>3</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 1 shows the results of pre-test and post-test. The results showed that there has been dramatic increase
in their performance. Almost all of the participants showed a good understanding of the concepts of variance,
deviation and degree of freedom; however, 4 of the faculty members were not able to calculate the population
and sample variance. Although these people were able to grasp what variance, deviation and degree of
freedom, they had difficulty when it comes to calculation. When we asked them about this issue, they said that
their mathematics is not good.

DISCUSSION

The main purpose of this study was to develop a video tutorial aimed at teaching the topics of variance and
degree of freedom to faculty members. Our main intention was not to enable them to learn how to calculate
variance; however, our tutorial was designed to provide them with a deep conceptual understanding of
variance and degree of freedom. The results, in general, revealed that the participants liked the tutorial, found
it instructive, beneficial and easy to follow. They indicated that they learned something new and the topic of
degree of freedom was not as difficult as they thought. Some of them were able to give an example related to
the applications of variance in their field. It seems that using multimedia has beneficial effects on the faculty
members’ learning of some statistical concepts as well as it happens in other fields (Mayer, 2007).

As it has been mentioned in the introduction, degree of freedom is a difficult concept to learn and teach in
statistics (Eisenhauer, 2008). Our tutorial appeared to be effective in teaching this concept to the faculty
members; however, 5 participants still had difficulty with getting a deep conceptual understanding of this topic.
We observed that these participants mostly do qualitative studies in their research and have a poor
background of mathematics and statistics. We think that giving more examples regarding the applications of
degree of freedom in real life might enable such faculty members to grasp this difficult concept. Although some
participants seemed to struggle to understand degree of freedom, all the participants learned what variance is,
difference between sample and population variance and the relationship between variance and standard deviation.

In sum, our observations in this study revealed that the faculty members had little or no knowledge of variance in the pre-test; however, the overwhelming majority of them showed a high performance in the post-test, which suggested that the video tutorial we designed had beneficial effects on their learning of this topic. Therefore, we believe that statistics teachers can use confidently utilize this tutorial in their classroom while teaching these concepts. In addition, this tutorial can be used as a self-paced learning tool by learners of statistics.

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REFERENCES


COMPETENCIES OF NEW IT GRADUATES REGARDING EMPLOYER’S EXPECTATIONS FOR WORK MODE PERFORMANCES

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ABSTRACT

The employer expectations for recent graduates working in the computer industry are generally not taken into account during the curriculum development of computer-related departments of the Turkish universities. In consequence, when the graduates enter the work force, there is a dissatisfaction between the employer expectations and the technical and/or social abilities of the new graduates. As a guide to the departments offering degrees in computing, an employer expectation survey has been conducted among senior professionals and managers from the government and private sectors to evaluate the strengths and weaknesses of their junior engineers. The results indicate significant differences in government and private sectors in terms of perceived competencies to some extent. In addition, some significant relationships between employer expectations from new graduates and perceived competencies focusing on graduates’ performance in different work environments are expressed.

Key Words: Employer expectations, individual work, team work, perceived competencies, regression.

INTRODUCTION

The education offered by the IT departments often do not provide graduates with the competencies demanded by the industry leading to employer dissatisfaction in terms of the technical and social qualifications of their newly graduated employees. The set of hard (technical) and soft (personal) skills the graduates need to perform well in the computer sector have been the focus of various research (Nasr, 2014; Turhan & Akman, 2013; Dravid & Duncan, 2011).

Right after starting their employment, new graduates are expected to have specific knowledge, commercial awareness, disposition and qualifications to contribute to the organization’s aims (Mason, Williams, & Cranmer, 2009). Employers expect the employees to work in different work environments, either on an individual basis or as a member of a team. Various studies have been conducted previously on individual vs. teamwork performance in different domains (Costa, Passos, & Bakker, 2014; Mumford, 2015). Yet, the competencies the graduates need to acquire for individual vs. teamwork have not been studied extensively.

In this research, a survey has been conducted to examine the effects of technical, personal and educational competencies of new graduates on their individual vs. teamwork performance from the employers’ perspective. The results of the study can provide feedback to the IT departments for improvement of their programs regarding the expectations of the industry.
The remainder of the paper is arranged as follows. The next section introduces the research model followed by the research design. Then, the descriptive and test results are given in detail, followed by the conclusion.

**RESEARCH MODEL**

The present study performs a systematic approach to investigate the impact of competencies of new graduates on the sector of the establishments and employer expectations from new graduates, which can be considered as our empirical factors. The competencies were grouped as:

- technical competency (general software development activities, software development processes and adopting new methods in software development)
- personal competency (using time effectively, leadership skills and communication skills)
- educational competency (covering sociocultural issues in curriculum, medium of instruction and involvement of research activities in curriculum)

Based on the available literature, the research model was developed to investigate the relationship between dependent and independent variables (Figure 1).

> Figure 1: Research Model

The justification for each empirical factor and the corresponding hypotheses are provided below.

There is a heavy body of research regarding factors influencing performance of employees. The available literature provides evidence for the role of different work environments on employees’ performance. Imran, Fatima, Zaheer, Yousaf, and Batool (2012) provide one of the most recent studies in this respect. They studied the relationship between work environment and employee performance in the manufacturing sector and their results reveal positive and significant impact of work environment on employee performance. Moreover, the work environment was also found to play a mediating role in the relationship between transformational leadership and employee performance in their study. However, work environment in these studies is taken as the conditions in the work place. There is a lack of empirical research exploring the relationships between different work modes and expected employee performance, where work modes are taken as the individual work and team work environments. Schaubroeck, Lam, and Cha (2007) support the existence of differences between the performance of employees in individual and team work and report that performance of work teams is generally viewed as a function of members’ individual performances. These differences have important consequences for the establishments’ strategies on organizational standards, values, motivations, expectations and employment policies (Frank & Lewis, 2004; Zeffane, 1994; Cuyper, Heijden, & Witte, 2011). Moreover, existence of relationships between work modes and adequacies of employees has not been studied in the literature yet. Therefore, we include employer’s performance expectations from different work environments as dependent variables in this study.
During the last two decades, rapid changes in technology and, specifically, in information and communication technologies are being witnessed. These changes are not only affecting the daily life of people but also having significant impact on higher education. Education has been a subject of discussion for quite a long time and the existing literature on education mainly consists of conceptual discussions, descriptive surveys and analytical modeling. A number of researchers have studied the education from employability point of view (Cuyper et.al., 2011; McQuaid & Lindsay, 2005; Bernston, Sverke, & Marklund, 2006). Although not very obvious, employability is generally seen as conditional upon workers’ educational position (Cuyper et.al., 2011). Bernston et al. (2006) report a positive association between educational level and perceived employability. Other studies focus on the relationships between learning outcomes and employers’ expectations (Nair, Patil, & Mertova, 2009; Mukhtar et.al., 2009; Shatat, Hazim, & Hariga, 2010). In their study, Nair et al. (2009) identified 12 employers’ expectations for engineering graduates and their relative importance, elaborating about the links between engineering graduate attributes and employers’ expectations indicating that engineering university graduates lacked skills required by the employers. They further proposed a possible solution to address the competency gaps between the industry requirements and graduate outcomes by teaching and assessing competencies required by the industry in the engineering and technology educational programmes. Mukhtar et al. (2009) propose additional collaboration by corporations and universities since this is assumed to lead to a greater integration of the varied approaches taken by the various disciplines. Most of these studies are either focusing on employability (Bernston et.al., 2006; Mukhtar et.al., 2009) or are based on data collected from a specific academic or organizational environment (Nair et.al., 2009; Shatat et.al., 2010). Additionally, they do not provide a systematic or exploratory analysis on the relationships between employee expectations and outcomes of higher education. On the basis of this rationale, the following set of hypotheses is proposed.

Based on the overview above, we can formulate our following set of hypotheses:

<table>
<thead>
<tr>
<th>Hyp</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Perceived technical competency, (i=1, 2, 3) of new IT graduate is significantly related to employer’s expectation for individual work performance.</td>
</tr>
<tr>
<td>H1</td>
<td>Perceived personal competency, (i=1, 2, 3) of new IT graduate is significantly related to employer’s expectation for individual work performance.</td>
</tr>
<tr>
<td>H1</td>
<td>Perceived educational competency, (i=1, 2, 3) of new IT graduate is significantly related to employer’s expectation for individual work performance.</td>
</tr>
<tr>
<td>H2</td>
<td>Perceived technical competency, (i=1, 2, 3) of new IT graduate is significantly related to employer’s expectation for team work performance.</td>
</tr>
<tr>
<td>H2</td>
<td>Perceived personal competency, (i=1, 2, 3) of new IT graduate is significantly related to employer’s expectation for team work performance.</td>
</tr>
<tr>
<td>H2</td>
<td>Perceived educational competency, (i=1, 2, 3) of new IT graduate is significantly related to employer’s expectation for team work performance.</td>
</tr>
</tbody>
</table>

**RESEARCH DESIGN**

A survey questionnaire was developed for testing the hypotheses. Initially, a pilot version of this questionnaire was prepared and a group of IT professionals was interviewed to finalize the questionnaire. The questionnaire contains 11 items, and each item reflects a discrete variable. Table 1 summarizes the definitions, scales, and the range of values for these variables. The variables “individual_work” and “team_work” are the dependent variables, whereas the others constitute the dependent ones.
Table 1: Summary of Research Questions and Variables

<table>
<thead>
<tr>
<th>Quest.</th>
<th>Variable</th>
<th>Definition</th>
<th>Range of values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Individual_work</td>
<td>How important is the individual working performance of new IT graduates in your organization?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>2</td>
<td>Team_work</td>
<td>How important is the team working performance of new IT graduates in your organization?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>3</td>
<td>SD_background</td>
<td>Do new IT graduates in your organization have a significant background in Software Development?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>4</td>
<td>SD-processes</td>
<td>Are new IT graduates in your organization competent in software development processes?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>5</td>
<td>SD_methods</td>
<td>Are new IT graduates in your organization competent in adapting to new software development methods and approaches?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>6</td>
<td>time</td>
<td>Are new IT graduates in your organization competent in using time effectively?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>7</td>
<td>leadership</td>
<td>Are new IT graduates in your organization competent in leadership capacity?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>8</td>
<td>communication</td>
<td>Are new IT graduates in your organization competent in communication?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>9</td>
<td>sociocultural</td>
<td>How important is it for your organization that the curricula provide sociocultural awareness to students?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>10</td>
<td>language</td>
<td>How important is it for your organization that the new IT employees graduated from a university, whose instruction medium is English?</td>
<td>very much, much, average, little, very little</td>
</tr>
<tr>
<td>11</td>
<td>projects</td>
<td>How important is it for your organization that the new graduated IT employees have worked in a project during their undergraduate education?</td>
<td>very much, much, average, little, very little</td>
</tr>
</tbody>
</table>

The respondents were either senior IT professionals or IT Project managers from both major government and private sector establishments. The participant organizations were selected using "judgement sampling". A total of 72 completed survey questionnaires were received.

One of the principal areas of statistical inference is the test of statistical hypotheses. Linear regression provides a powerful statistical testing method (Milton & Arnold, 2006). Multivariate linear regression technique was utilized to investigate the relationships between the dependent and independent variables in this study.

RESULTS

The results of the survey are presented in the following sequence. Initially, the results of the survey are revealed using descriptive analysis. As it was mentioned earlier, chi-square test method was used whenever there was a need to have a better insight to the respondents' profile in this part. This is followed by the results of regression analysis for each demographic factor.
Descriptive Results

The descriptive profile of respondents is provided in Table 2.

Table 2: Descriptive Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Turkish graduate students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Sector</td>
<td></td>
</tr>
<tr>
<td>private</td>
<td>49</td>
</tr>
<tr>
<td>public</td>
<td>22</td>
</tr>
<tr>
<td>unknown</td>
<td>1</td>
</tr>
<tr>
<td>Current position</td>
<td></td>
</tr>
<tr>
<td>unit/project manager</td>
<td>60</td>
</tr>
<tr>
<td>senior professional</td>
<td>12</td>
</tr>
<tr>
<td>Graduation of respondent</td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>42</td>
</tr>
<tr>
<td>engineering</td>
<td>13</td>
</tr>
<tr>
<td>others</td>
<td>16</td>
</tr>
<tr>
<td>unknown</td>
<td>1</td>
</tr>
<tr>
<td>Organization’s satisfaction from new graduates</td>
<td>72</td>
</tr>
<tr>
<td>very much</td>
<td>11</td>
</tr>
<tr>
<td>much</td>
<td>47</td>
</tr>
<tr>
<td>average</td>
<td>8</td>
</tr>
<tr>
<td>little</td>
<td>4</td>
</tr>
<tr>
<td>very little</td>
<td>2</td>
</tr>
<tr>
<td>unknown</td>
<td>0</td>
</tr>
<tr>
<td>Level of in-service training</td>
<td>72</td>
</tr>
<tr>
<td>very extensive</td>
<td>5</td>
</tr>
<tr>
<td>extensive</td>
<td>22</td>
</tr>
<tr>
<td>average</td>
<td>29</td>
</tr>
<tr>
<td>not much/little</td>
<td>14</td>
</tr>
<tr>
<td>no in-service training</td>
<td>2</td>
</tr>
</tbody>
</table>

The respondents from private sector establishments were observed to be dominant (68%) from the inspection of Table 1. It is not surprising to note that most of the respondents reported their position to be manager (83%) since this was the intention during the sampling procedure. The percentage of IT graduate respondents were 59% and this also meets the sample requirements in this survey. Of the IT graduates only 21% are working in public sector establishments. The percentage for graduates of other branches is higher (41%). This should be considered normal because the demand for IT graduates is still high in the country and the salaries are generally lower in public sector organizations than that of their private sector counterparts. In consequence, most of the IT graduates prefer working in private sector organizations and public sector meets its demand with graduates of other fields.

Interestingly, in-service training was reported by all the participant organizations in this study. However, the amount of in-service training was observed to be around “average” and “more” (78%). This should be considered normal because the respondents’ organizations were accumulated around “average” and “little” (76%) in terms of level of organizational satisfaction of new graduates. Surprisingly, none of the organizations reported “very much” in this respect (0%). It was observed that, of the government sector organizations, 43% provides either extensive or very extensive in-service training for new graduates. This percentage is lower (36%) for private sector. This should be expected considering the fact that most IT graduates prefer to work in private sector and government sector employs graduates of other branches as IT specialists.
**Test Results**

The results of regression tests for the hypotheses are given in Table 3.

<table>
<thead>
<tr>
<th>Table 3: Test Results for “Work Mode”</th>
<th>Individual work (IW)</th>
<th>Team work (TW)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Empirical factor</strong></td>
<td><strong>Test variables</strong></td>
<td><strong>Hyp.</strong></td>
</tr>
<tr>
<td>Technical competencies</td>
<td>SD_background</td>
<td>H111</td>
</tr>
<tr>
<td></td>
<td>SD-processes</td>
<td>H112</td>
</tr>
<tr>
<td></td>
<td>SD_methods</td>
<td>H113</td>
</tr>
<tr>
<td>Personal competencies</td>
<td>time</td>
<td>H121</td>
</tr>
<tr>
<td></td>
<td>leadership</td>
<td>H122</td>
</tr>
<tr>
<td></td>
<td>communication</td>
<td>H123</td>
</tr>
<tr>
<td>Education competencies</td>
<td>sociocultural</td>
<td>H131</td>
</tr>
<tr>
<td></td>
<td>language</td>
<td>H132</td>
</tr>
<tr>
<td></td>
<td>projects</td>
<td>H133</td>
</tr>
</tbody>
</table>

(*) and (**) indicates statistical significance at 5% and 10% significance levels respectively.

For the individual work mode, the inspection of p-values in Table 3 indicates that:

- Regarding technical competencies: there is sufficient evidence to accept H111 at a 5% significance level. This means the variables “SD_background” is significantly related to the variable “individual work” at 0.05 significance level. It is also true that the variables “SD_process” and “SD_methods” do not have significant impact on the variable “individual work” in this category. In other words, the new IT graduate’s software development background is considered to be important for working individually by the employer.

- For personal competencies, the variables “leadership” and “communication” are supported by survey results. Hence, H122 and H123 are accepted at 10% and 5% significance levels, respectively. This means new IT graduates leadership and communication skills are perceived to be important by the employers for individual work environments. On the other hand, p-value does not show any significance for H121 and we reject it. This means that the capacity of new IT graduates to use time effectively does not have a significant impact on individual work performance.

- In education competencies category, the only factor supported by the survey results is sociocultural, which concludes acceptance of H131 at 5% significance level and rejection of H132 and H133. This means the curricula caring about the sociocultural capabilities of students have impact on their performance in individual work environments. Interestingly, language of instruction and project experience do not show any significance in this respect.

For the team work mode, the inspection of p-values in Table 3 indicates that:

- Interestingly, all the factors in technical competencies category are supported by the survey results. In other words, p-values in Table 3 indicate that “SD_background”, “SD_process” and “SD_methods” are significantly related to employer’s expectation for team work performance at 5%, 5% and 10% significance levels, respectively. Therefore we accept H211, H212, and H213 at 5%, 5% and 10% significance levels, respectively. In other words, new IT graduate’s software background is considered to be important for team work by the employer.

- For personal competencies, the variables “time” and “communication” are supported by survey results. Hence, H121 and H123 are accepted at 5% significance level. This means new IT graduates effective time usage and communication skills are perceived to be important by the employer in terms of team work performance. Surprisingly, p-value does not show any significance for H122 and H222 and they are rejected. In other words, new IT graduate’s leadership skill does not show any significant impact on team work performance.

- In education competencies category, surprisingly, the only factor, which is not supported by the survey results is project experience. This leads to rejection of H131. In other words, involving new IT graduate in projects during his/her undergraduate education does not count much for team work performance.
expectations of the employer. The other two factors in this empirical category, namely, the relationship between teamwork performance, and sociocultural and the language of instruction, shows significance at 5% significance level (Table 3). This leads to acceptance of H132 and H133. This interestingly means, according to employer’s perceptions, the curricula caring about sociocultural capabilities and universities with English instruction medium have significant impact on IT graduate’s team work performance.

CONCLUSION

This paper presents the findings of a study based on the relationship between performance expectations in individual and team work environments in establishments and some characteristics regarding competencies of new IT graduate employees. A survey research approach was adopted for the set of data from a sample of IT managers and senior professionals for this purpose.

The dependent factors included in the study were “individual_work” and “team_work”. The independent variables are grouped in three empirical categories as technical competencies (SD_background, SD_process, SD_methods), personal competencies (time, leadership, communication) and educational competencies (sociocultural, language, projects).

This research has arrived at interesting inferences regarding the impact of “individual_work” and “team_work” on the competencies of new IT graduates. According to the comparative analysis, the only factors in which there are no differences in employer’s expectations regarding performance in individual and team work environments are “communication” and “sociocultural” since both are found to be significant. This means in individual and team work modes, communication skills and sociocultural awareness of new IT graduates are important factors in individual and team work environments in the workplace.

We recognize some limitations of our study. First, for the followers of this paper, we propose to use larger samples which may lead to more insight into the relationships towards different categories of competencies. Second, studying the impact of work climates’ in establishments from different sectors would also be of interest. Actually, analysis of administrative factors may also provide very interesting results. Finally, this study should also be designed to include the size (i.e. small and medium) of organizations from all sectors.

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REFERENCES


PARENTS’ EXPECTATIONS FROM TEACHERS AND SCHOOL ADMINISTRATORS REGARDING SCHOOL-FAMILY COOPERATION DEVELOPMENT

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ABSTRACT

The aim of the study is to improve the school-family cooperation, which may improve students’ achievement, by obtaining parents’ expectations from teachers and school administrators.

A non-probability sample has been used. The participants of the research consist of 25 parents and 2nd grade 25 students from two low-socio-economic state schools. Qualitative approach was selected for his study. Semi-structured interviews were used. Data were collected from October, 2013 through October, 2014. This included a 60-120 minutes recorded interviews with the informants with initial interview questions and documents.

The results of the study suggest that parents should cooperate with teachers and students in the education process actively, to make cooperation effective, to plan school activities together with parents and then adjust the activities according to the environment. In addition, the study put forward the idea that parents’ involvement in the education process as a member of school improves the students’ achievement.

Key Words: School-family cooperation, parent involvement, development, school administrator.

INTRODUCTION

School-family and student are the fundamentals of education systems and their close communication and cooperation is vital to gain the required results. Therefore, the school management that wants to reach success in education-instruction must give importance to interrelations between parents and teachers in order to involve parents as well as teachers in the programme applied (Akbaşlı and Kavak, 2008).

School-family and student are the fundamentals of education systems and their close communication and cooperation is vital to gain the required results. While family involvement increases academic achievement in children and teenagers, it also encourages students to achieve and their attendance at school. Besides, family involvement improves school-family relationships, positive sides of a class and students’ tendency to study. Finally, it improves school-family cooperation, enables students have self-control and supports them to acquire noticeable educational goals (Eccles and Harold, 1993, Grolnick and Slowiaczek, 1994, Dempset et all, 2001; In Akbaşlı and Kavak, 2008).

Effective collaboration between schools and families is a significant factor for improving the children success and the effectiveness of schools (Mortimore, Sammons, Stoll, Lewis, & Ecob, 1988). Both the teachers and the administrators who participated in the research agree each other in that parents must involve in the education process. As a reason for this common idea, it has been stated that education must also continue in the family environment and the family and the school must form a whole. The researches regarding this issue have also
put forward the positive effects of family involvement in the education processes (Epstein & Sheldon, 2002a, b; Jeynes, 2007; Shaw, 2008).

Within educational research, there has been a growing interest in the impact that families and schools have on student performance. Spurred by the seminal work of Bronfenbrenner (1977, 1986), ecological systems theory has become a commonly used lens through which to view and explore students and their development over time (e.g., Tudge & Hogan, 2005). This theory details children and adolescents’ development within a set of interrelated, interacting environmental systems (e.g., home, school, community). However, although much of the educational research rooted in systems theory has focused on protective factors embedded within either the home or school environments (e.g., Bates, 2005; Fan & Chen, 2001; Ginsburg-Block, Manz, & McWayne, 2010; Guli, 2005; Reynolds & Clements, 2005; Valdez, Carlson, & Zanger, 2005), recent literature suggests that this approach is flawed; that is, in lieu of simply aiming to improve family involvement in students’ education, researchers are increasingly highlighting the need for development of collaborative school–family partnerships, which are believed to be essential to promoting positive outcomes for students (Bempechat, 1998; Christenson & Reschly, 2010; Christenson & Sheridan, 2001).

The importance of family involvement in education has been well established in the literature. Furthermore, emphasis on family inclusion and outreach by schools has also been evidenced by calls for reform to assessment and intervention practices (Gutkin, 2009; Reschly, Coolong-Chaffin, Christenson, & Gutkin, 2007) as well as federal legislation that has reinforced the rights and need for family presence and participation in schools (i.e., No Child Left Behind; Epstein, 2005). However, rather than focusing on families and schools as separate contributors with separate responsibilities, scholars are increasingly emphasizing the consideration of school–family partnership components as integral parts of the learning environment (e.g., Christenson, 2004; Henderson & Mapp, 2002), while also claiming their particular significance as protective factors for children at risk of academic failure (Christenson & Sheridan, 2001).

Before proceeding with a review of literature in this area, it is imperative to clearly define the terminology involved. Most importantly, there must be a clear understanding of the difference between school–family relationships and school–family partnerships. Relationships between schools and families refer to the connection between these two learning contexts and the reciprocal interactions among them over time, which represent a separate social system that plays an important role in optimizing student achievement. Although relationships always exist, simply as a function of the connection between families and schools partnerships refer to a specific type of relationship that researchers urge all schools and families to strive for (e.g., Christenson, 2004) one characterized by collaboration and joint ownership of responsibilities and accountability for outcomes (Reschly & Christenson, 2012).

Within the extensive theoretical literature base that promotes partnerships between schools and families, several characteristics have consistently been posited as being inherent to creating these successful partnerships. Reschly and Christenson (2009) argued that partnerships imply engaged relationships between families and schools, that is, relationships consisting of two-way communication about children’s academic needs, collaborative problem solving, and shared decision making, all with the focus of supporting students and families to optimize educational outcomes. Other researchers have highlighted the need for shared goals, contributions, and accountability within these partnerships. In addition to agreeing with the need for a student-focused philosophy and shared responsibility for outcomes, Christenson and Sheridan (2001) also suggest an emphasis on the quality of interactions between families and schools, as well as a preventative, solution-focused approach in which families and educators work to create conditions that facilitate student learning, engagement and development. Throughout the literature, authors have also discussed the specific influence of school–family partnerships in reducing the level of academic, behavioral, and emotional risk for students throughout their development. Risk is typically defined as particular conditions (i.e., risk factors) that increase the likelihood that an individual will experience certain adverse consequences, and rather than being viewed as a property of children themselves, risk is more contemporarily thought to exist in interactions among the multiple systems surrounding children (Finn & Rock, 1997; Pianta & Walsh, 1996, 1998). Furthermore,
conceptualizing risk from an ecological systems theory perspective, researchers have cited the quality of school–family partnerships as a primary contributing factor to the level of child risk (Pla & Walsh, 1996).

As Reschly and Christenson (2009) stated: For students and families who are at higher risk for poor outcomes (e.g., those living in poverty, students with disabilities), the mesosystem of home and school takes on greater importance as a factor that either exacerbates these risk conditions or ameliorates them by promoting additional learning opportunities aimed at enhancing positive outcomes for youth. (p. 9) Although it seems that most authors agree on the theoretical necessity and importance of collaboration, interaction, and continuity in creating and maintaining effective school–family partnerships and improving student outcomes (Christenson, 2004), little empirical research has been done to explore the impact these or other characteristics actually have on student success.

The shift in focus from microsystemic influences (e.g., home or school) to the mesosystemic influences of a successful school-family partnership has led to consensus that additional research is needed. Whereas numerous investigations exist reporting significant correlations between parent involvement indicators (e.g., home-school communication, parental aspirations, participation in school activities) and student success (e.g., Fan & Chen, 2001; Ginsburg-Block, Manz, & McWayne, 2010; Reynolds & Clements, 2005), and demonstrating the positive influence of parent/family components in interventions aimed at changing student learning and behavior (Bates, 2005; Guli, 2005; Valdez, Carlson, & Zanger, 2005), less research has been done investigating the mesosystemic, reciprocal interactions that characterize school–family relationships or partnerships. Many of the empirical studies that have been done specifically investigating these variables were reviewed by the Parent and Family Intervention domain of the Evidence-Based Interventions in School Psychology Task Force (formerly called the Task Force on Empirically-Supported Interventions in School Psychology) and presented in a special issue of School Psychology Quarterly (Carlson & Christenson, 2005a). The purpose of the Task Force was to examine the degree to which scientifically based research has found that parent and family interventions were effective in changing children’s school learning and behavior (Carlson & Christenson, 2005b). Within the investigations presented, a number of interventions with a family–school collaborative component were found to be promising. In his commentary, Ollendick (2005) noted that more support was found for interventions that were highly focused in scope, were part of a multi-component program, and involved active collaboration among parents, students, and schools. For example, in a review of 18 empirical studies conducted by Cox (2005), home–school collaboration interventions were found to be effective in helping achieve desired outcomes for students (e.g., improved academic performance and school-related behavior), specifically when parents and school personnel worked together to implement the intervention with regular two-way exchange of information.

Cox noted that a key feature found in the most successful interventions among those reviewed was that schools and families not only collaborated with one another, but treated each other as equals, causing families to feel “more empowered to help their children and more comfortable participating in their child’s education” (Cox, 2005, p. 491). Additional studies have reported similar findings with regard to school–family partnerships and positive student outcomes. For example, in a study investigating eight Texas schools in which Hispanic students consistently achieved beyond state averages, Scribner, Young, and Pedroza (1999) found that a focus on building collaborative relationships (e.g., learning about and incorporating Hispanic cultural values, stressing personal contact with parents, fostering communication, and creating a welcoming environment) was the key factor differentiating these schools from surrounding schools that were lower achieving. In addition, Simon (2000; as cited in Henderson & Mapp, 2002) found that partnerships between families and schools, which included involvement in parenting, learning at home, and decision making, were related to several indicators of achievement (i.e., higher grades in English and math, more completed course credits, better attendance and behavior, and increased preparedness for class).

Furthermore, research examining consultation approaches and their effect on student outcomes has found evidence for the utility of involving parents and teachers in the consultation process. For example, among the various parent consultation strategies investigated in Guli’s (2005) review of the literature, the Conjoint Behavioral Consultation (CBC) model (Sheridan & Kratochwill, 2007), involving consultation with parents and
teachers, provided the strongest evidence for producing significant school-related outcomes. This finding is consistent with other published studies showing that consultation services involving families, educators, and school psychologists in joint problem solving are effective in improving students’ academic, social, and behavioral functioning and are viewed as favourable by participants in the process (Sheridan, Eagle, & Doll, 2006). Additionally, experimental studies have reported positive effects of CBC as an intervention for increasing positive social behaviors of withdrawn or disruptive children, increasing homework completion and accuracy, and decreasing noncompliance and tantrum behaviors (Colton & Sheridan, 1998).

Gökçe (2000) has determined that parents must involve in school-family union studies in order to strengthen teacher-school-family cooperation, and parents must be informed about child development issue. Besides, it has been proposed that parents must be interested in the child’s problems more closely and a convenient meeting environment must be arranged at schools.

National Education Fundamental Legislation’s 16th item has stated that “To contribute to realize educational institutions’ aims, cooperation between the school and the family is provided” and the 5th item of MEB School-Family Union Regulations has stated the aims of the foundation of school-family unions and related rules by explaining that “The union must realize the consolidation of the school and the family, provide the communication and cooperation between the parents and the school, support the activities developing education-instruction, fulfill low-economic-status students’ requisite needs and contribute to the schools’ economic situation. (Resmi Gazete, MEB Okul Aile Birliği Yönetmeliği, 2005).

According to Arslan and Nural (2004), in order to create an effective and successful school-family cooperation, the school can arrange activities like arranging house visits, planning trips, observations, conferences, special occasions which parents, teachers and children join, benefiting from parents as the in-class source person, benefiting from parents in profession counselling, programming and announcing family meetings, giving parents opportunities to use school sources, applying questionnaires to have parents’ views about the school, giving duties to parents at special event celebrations, enabling parents to write in school bulletins, arranging some shows in their class regularly, making the parents know about their children’s performance through this way and presenting a sample lesson to the parents, etc...

According to Redding (1991), a successful family involvement is realized if; Families see themselves as real associates, families’ involvement is started by the family who interacts with the involvement programme most and other families’ involvement is generalized by providing their involvement via the family (This situation also saves the school, the families and the student’s time, education programmes which are appropriate to the school’s main purpose are given, the family involvements is assessed according to standard quality criteria, the primary focus is on the student’s learning and the communication among families for other school activities). On the other hand, Pehlivan (1997) has listed the obstacles which hinder families’ participating in school activities in our country.

1- Parents’ past negative school experiences hinder their cooperation with schools and their participation in school activities. Their negative attitudes towards the school are reinforced especially when they are invited to school for their children’s negative issues.

2- The family’s poor economic condition also leads them not to participate in school activities. The school’s economic expectation from the family also distracts the family participate in the school activities.

3- The family’s low education level also makes the family reluctant about what kind of a duty they will have. Compared to low-education-level families, it is seen that high-education-level families are more reluctant about participating in the school activities.

4- Teachers’ negative attitudes towards families’ participation also hinders families’ involvement.

According to Funkhouser, Gonzales & Moles (1998), it may not be always easy to reach active school-family cooperation. Obstacles about family involvement may result from various reasons, such as problems that teachers and other staff face, language, culture and socio-economic differences between families and school staff. However, different studies applied in most schools show and propose that schools and families can work
together to overcome the obstacles. For example regarding obstacles, a research held by Finders and Lewis (1994) concluded the reasons of families’ not involving in their children’s education process as follows: Parents’ negative experiences about their old school years, parents’ various economic problems, short time period that they can spend for the school, their insufficient education level, teachers’ negative attitudes towards families, language and culture differences between home and school. For successful school-family cooperation and activities, which directly affect the student’s successful learning at school and at home, a continuous mutual understanding, support and involvement is required. In line with this, various studies in the literature indicate that students are more successful when their parents are involved in the school more and it enables teachers to share their students’ educational needs and responsibilities (Akkök, 2000).

In this regard, the study held has aimed to improve the school-family cooperation through focusing on the research questions, which have been addressed to the parents, listed below:
1. What do you expect from teachers about improving school-family relationship?
2. What do you expect from school administrations regarding to increase school-family cooperation?
3. What are your suggestions to improve school-family cooperation?

**METHOD**

**Participants**

A non-probability sample has been used, because ‘the sample derives from the researcher’s targeting a particular group, in the full knowledge that it does not represent the wider population, it simply represents itself. The participants of the research consist of 25 (24 female, 1 male) parents and 2nd grade 25 students from two low-socio-economic state schools. Parents have been informed that their involvement is relied on their consent, and their names will not appear in any documents.

Table 1: Participants’ Status and Accompanying Data Collection

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Gender</th>
<th>Age</th>
<th>Graduated School</th>
</tr>
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<tbody>
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<tr>
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</tr>
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</tr>
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</tr>
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<td>Primary school</td>
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<td>29</td>
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<td>25</td>
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<td>Female</td>
<td>35</td>
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</tr>
</tbody>
</table>
Research Design
A qualitative approach has been selected for this study, because this research has been more concerned with understanding individuals’ perceptions of the world and seeking insights rather than statistical analysis (Silverman, 2005). In addition, screening model has been used. Thus, the focus of this study was on to improve the students’ achievement through the parents, teachers and students cooperation.

Data Collection and Analysis
Data were collected from October, 2013 through October, 2014. This included a 60-120 minutes recorded interviews with the informants with initial interview questions and documents. Semi-structured interview was used. In this study, data was analysed via qualitative data analysis methods.

The findings from interviews with parents were reported. Rich text records were edited, coded and linked with multimedia. In addition, data analysis process was aided by the use of a qualitative data analysis computer program called NVIVO.

FINDINGS AND DISCUSSION

1. Parents’ Expectations from Teachers about Improving School and Family Relationship
To find an answer to this problem, the model, frequency analysis, and the percentage distributions for the opinions of parents are identified. Main theme and the sub themes of the first sub-problem are given in Table 2, the data obtained and the percentage distributions are given.

Table2. Parents’ Expectations From Teachers About Improving School and Family Relationship

| PARTICIPANTS | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | Ö | P | R | S | T | U | Ü | V | Y | Z | f* | %* |
| Teachers’ active communicating with parents | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 24 | 96 |
| Teachers’ arranging activities which attract parents to school | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 23 | 92 |
| Teachers’ guiding students active and constructive in their studies | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 20 | 80 |
| Teachers must consider students’ individual differences | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 18 | 72 |
| Teachers must be role models with their attitudes and behaviours | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 15 | 60 |
Teachers must visit the students and observe them in their house environments. Teachers’ avoiding discrimination among students.

| Theme                                                                 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | % |
|-----------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Teachers must visit the students and observe them in their house environments |   |   |   |   |   |   |   |   |   |   |   | 13 52 |
| Teachers’ avoiding discrimination among students                       |   |   |   |   |   |   |   |   |   |   |   | 11 44 |

✓ shows the participants mentioned on the theme.
* f shows the frequency of how many of the participants mentioned on the theme.
** % shows the percentage of the participants mentioned on the theme based on the frequency.

As seen in Table 2, if interpreted the opinions of the parents’ on expectations from teachers:

It is obvious that teachers’ active communicating with parents takes the first place with the percentage of 96%, teachers’ arranging activities which attract parents to school is the second theme that has the highest percentage with the value of 92%, sub-themes titled teachers’ guiding students effective and constructive in their studies take the third place with the percentage of 80%, teachers must consider students’ individual differences have the fourth value in the distribution of the percentage with the value of 72%. Teachers must be role models with their attitudes and behaviours take the fifth place with the percentage of 60%. Sub-themes titled teachers must visit the students and observe them in their house environments take the sixth place with the percentage of 52%. Teachers’ avoiding discrimination among students take the least value in the distribution of the percentage with the value of 44%.

Some opinions of the participants are given below:

If the teachers arrange activities to attract parents to school, parents would come to school more (A 1,1, 2).

The teacher can arrange activities for parents come to school more. Also, when the teacher leads the students to the activities positively, it will increase the parents involvement and success (B1,2,3).

Teachers should arrange activities to make parents come to school more. While arranging these activities, the teacher must consider each parent’s demands and expectations (T1,2,4).

Teachers should always be role models with their behaviours. In addition, teachers must not discriminate between students (P1,1,2,5,7).

Teachers must know that every student has different features and they must lead their students depending on the students’ features and differences. In addition, the teachers can visit the students and observe the students’ individual differences better (V1,3,4,6).

Teachers must meet parents more often. If the communication between teachers and parents, students are affected positively, and so students’ school success is affected positively. Teachers must behave equally towards all parents and students, must not make discrimination between them(K1,1,2,3,7).

In general, the findings of the study have indicated that teachers should build effective communication with parents and also teachers should arrange activities to attract parents to school at a high rate. In addition, teachers should lead students through effective and constructive activities, consider individual differences and be role models. Teachers should also visit their students at their homes and observe them. Parents have mentioned at low rate that teachers should not make any discrimination between students.
Table 3. Parents’ Expectations From School Administrations Regarding to Increase School-Family Cooperation

<table>
<thead>
<tr>
<th>Expectations from school administrations</th>
<th>PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involving parents to school administration actively</td>
<td>A B C D E F G H I J K L M N O P R S T U Ü V Y Z f * %*</td>
</tr>
<tr>
<td>Conducting studies to improve the quality of the education at school</td>
<td></td>
</tr>
<tr>
<td>Giving more place to social, cultural and sport activities</td>
<td></td>
</tr>
<tr>
<td>Preparing weekly-programmes for parents' negotiations with teachers</td>
<td></td>
</tr>
<tr>
<td>Caring about hygiene and cleanliness of the school environment</td>
<td></td>
</tr>
<tr>
<td>Supporting low-economic conditioned students</td>
<td></td>
</tr>
<tr>
<td>Arranging suitable places for parent teacher negotiations</td>
<td></td>
</tr>
</tbody>
</table>

✓ shows the participants mentioned on the theme..
* f shows the frequency of how many of the participants mentioned on the theme..
** % shows the percentage of the participants mentioned on the theme based on the frequency.

As seen in Table 3, if the opinions of the parents’ on expectations from administrations are interpreted; it is obvious that involving parents to school administration actively takes the first place with the percentage of 92%, conducting studies to improve the quality of the education at school is the second theme that has the highest percentage with the value of 84%, sub-themes titled giving more place to social, cultural, and sport activities take the third place with the percentage of 76%, preparing weekly-programmes for parents’ negotiations with teacher have the fourth value in the distribution of the percentage with the value of 72%. Caring about hygiene and cleanliness of the school environment, take the fifth place with the percentage of 60%. Sub-themes titled supporting low-economic conditioned students take the sixth place with the
percentage of 56%. Arranging suitable places for parent teacher negotiations take the least value in the distribution of the percentage with the value of 44%.

Some opinions of the participations are given below:

The school administrator must listen to parents and involve them in the school administration. They must do activities to increase the school quality and enrich this issue with social and cultural activities. The school administrator must also pay attention to the hygiene of the school (D2,1,2,3,5).

School administrators must get parents’ opinions about the school management decisions to increase the school-family cooperation. In addition, he/she must prepare suitable places for teacher-parent meetings. For these meetings, he/she must arrange weekly programmes(H2,1,2,3,4,7).

School administrators must arrange weekly programmes for teacher-parent meetings (N2,1,4).

School administrators must support the students who are in low-economic conditions. He/she must support social activities more. He/she must enable parents to meet with teachers more. While managing the school, school administrators must consider parents’ opinions more (R2,1,3,4,6).

School administrators must pay attention to the hygiene of the school more. School administrators must conduct common programmes with parents. They must help parents for meetings with teachers and in any subject. They must pay special attention to the poor students (V2,3,4,5,6).

School administrators must arrange suitable places for teacher-family meetings and must do common programmes with parents and teachers. They must involve parents in making decisions about the management of the school. They must conduct additional activities to increase the education quality (Z2,1,2,3,7).

Table 4: Parents’ Suggestions to Improve School-Family Cooperation

| PARTICIPANTS | A | B | C | D | E | F | G | H | I | J | K | L | M | N | Ö | P | S | T | Ü | V | Y | Z | f* | %* |
| Taking parents’ views and suggestions into account by the teachers and the school administration Teachers’ forming interaction and cooperation by doing home visits Informing parents about child development and education Creating parent-teacher cooperation for solving student problems | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | 2/3 | 92 |
| | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | 1/1 | 84 |
| | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | 1/9 | 76 |
| | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | 1/7 | 68 |

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Encouraging parents’ coming to school by increasing the number of social activities
Organizing suitable places for parent-teacher negotiations
Informing parents about their children on time

✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 1 5 60
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 1 1 44
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 6 24

✓ shows the participants mentioned on the theme.
* f shows the frequency of how many of the participants mentioned on the theme.
** % shows the percentage of the participants mentioned on the theme based on the frequency.

As seen in Table 4, the parents’ suggestions about improving the school-family cooperation are; taking parents’ views and suggestions into account by the teachers and the school administration takes the first place with the percentage of 92%, teachers’ forming interaction and cooperation by doing home visits is the second theme that has the highest percentage with the value of 84%, sub-themes titled informing parents about child development and education take the third place with the percentage of 76%, creating parent-teacher cooperation for solving student problems have the fourth value in the distribution of the percentage with the value of 68 %.

Encouraging parents’ coming to school by increasing the number of social activities takes the fifth place with the percentage of 60%. Sub-themes titled organizing suitable places for parent-teacher negotiations students take the sixth place with the percentage of 44%. Informing parents about their children on time take the least value in the distribution of the percentage with the value of 24%.

Some opinions of the participations are given below:

* Teachers and school administrators must consider parents’ opinions about the school issues. Teachers must visit students at their homes. Through house visits, they must provide effective communication and cooperation with parents. They must inform parents about the students’ development and education frequently. Parent-teacher cooperation must be built to solve the students’ problems. Finally, the number of social events must be increased to make parents come to the school more (D3,1,2,3,4,5).

* The school management and teachers must inform parents about their children. In addition, house visits must be held. A meeting room or place must be arranged for teacher-parent negotiations. Different social and cultural activities can be arranged to increase the cooperation between the school and the families. Parents’ opinions must be got in any issue and they should be involved in the management of the school (M3,1,2,3,5,6). Meetings with parents should be held on time regarding their children. Through house visits, teacher-parent cooperation must be built. Teachers and school administrators should see the parents as a part of education (S3, 1,2,3,5,7).

* Student problems should be solved through teacher-parent cooperation. Teachers must inform parents about their children’s general states. If it is needed, house visits should be realized. If the school management consider parents’ opinions and suggestions, the school-family cooperation exactly increases(Ü3,2,3,4,5,6).
RESULTS AND DISCUSSION

The results of this study indicate that parents expect teachers to communicate actively with them and arrange attractive activities to provide parent involvement. The parents in the study also expect teachers to guide students effectively by considering students’ individual differences. In addition, parents want the teachers to be role models with their attitudes and behaviours and to avoid discrimination among students. Finally, parents expect teachers to visit the students and observe them in their house environments.

The second part of the study has focused on parents’ expectations from school administrators. In this respect, parents expect the school administrators to involve them in the school administration actively. Parents also want the school administrators to improve the quality of the education at school and give more places to social, cultural, and sport activities. Besides, the school administrators are expected to prepare weekly-programmes for parent-teacher meetings by arranging suitable places. In addition, caring about hygiene and cleanliness of the school environment is also demanded by the parents. Lastly, parents expect the school administrators to support low-economic conditioned students.

The third part of the study has included the parents’ suggestions regarding how to improve the school-family cooperation. The parents suggested that their views and suggestions should be taken by the teachers and the school administration. They also expect the teachers to make house visits to form interaction and cooperation. In addition, the parents want to be informed about their children’s development and education through parent-teacher cooperation for solving student problems.

The school administration is asked to increase the number of social activities which may encourage parents’ coming to school. The parents also added that suitable places for parent-teacher meetings should be organized. As a last suggestion, the parents want to be informed about their children on time.

In this regard, it is assumed that the findings of the study may be beneficial in the improvement of school-family cooperation, contribute to teachers and educators and finally be beneficial in the detection and solution of the problems.

Lack of communication as a reason for most of the problems in public life also appears in school-family cooperation. When effective school-family cooperation is assumed necessary for increasing student school success and preparing them to life, some basic steps can be acted. For example, all of the parents must be considered merit and they must be behave equally without considering their contributions to school. Instead of behaving towards families in authoritative and suggestive mood, cooperation must be built with them to increase student success and develop the school.

Schools can send written forms to obtain parents’ expectations about the issues regarding their students’ success and their own developments. In this part, informative programs can be arranged for parents. Those type of activities can be done at counselling times and those counselling times can be spent more effectively. Finally, it should be considered that parents can also contribute to school through their jobs and talents. Money should not be regarded as the only contribution source to school (Aslanargun 2007).

Schools should be considered as places not only for students, but also for parents and other members of the society; through this understanding counselling and social activities must be held.

School-family union meetings must be done in a large environment so that all the parents can join actively and have a word; in case there are a lot of people, separate meetings can be held for different classes. Also, the content of the school-family union meetings can be enriched by short informative presentations so that parents can be aware of the issues, such as child development and education etc., that they do not have so much knowledge.
The formality nature of schools should not be reflected to the school-family meetings; an appropriate school-family union room should be prepared for a comfortable meeting and thus families can feel that they are merits. School-family meeting issues must be mentioned to parents at advance and they must be asked what they can do. Sub-committees must be formed with teachers and parents in order to cover the decisions taken in the meetings; school-family cooperation should be realized effectively via mentoring and application commissions. At regular intervals, journals can be sent to parents to inform them about the actions held and through this way the development of school-family cooperation can be provided by keeping this communication channel open.

Finally, in order to remove prejudices, such as not believing in the benefits of school, not considering the issues at meetings important, not believing that their students will succeed, a sincere school-family meeting atmosphere should be provided by the help of counsellors and educators.

Regarding students, it must be considered that every student can be successful in a different intelligence area and he/she can develop his/her own skills. Thus, humiliating behaviours towards students should be avoided.

In conclusion, effective school-family cooperation enables families have the awareness of a responsible and participant citizen as well as the mother-father role. For this reason, school-family cooperation be realized, school administrators and teachers must work thoughtful and devoted.

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REFERENCES


RELATIONSHIPS AMONG LANGUAGE TESTS, PORTFOLIO, PARTICIPATION, ABSENCE AND LATER ACADEMIC ACHIEVEMENT AT HIGHER EDUCATION

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ABSTRACT

The value of using multiple means in assessment for decision making has been expressed for a long time. Different types of assessment have been proposed for a fair evaluation of student progress or achievement level. Even though undergraduate achievement in social sciences implies dependency on language proficiency, where medium instruction is a foreign language, it appears that it is more dependent on study habits, attendance, and language achievement scores rather than foreign language proficiency scores. Scores in language, portfolio, attendance and GPAs over three years of 1208 students who have been studying at different faculties have been analyzed to see the relationship between language test results, portfolios, attendance, gender, department and academic achievement in the undergraduate education. Portfolio, attendance and participation in prep school correlated with GPAs in an increasing trend and the predictive value of different means of language assessment on academic achievement with regard to faculties produced different results.

Key Words: Regression; foreign language; academic achievement.

INTRODUCTION

Teaching of English as a foreign language is common in Turkish universities, some of which use English as medium of instruction. These universities make exams to test students’ level of English to see whether they are ready for undergraduate studies held in the foreign language. Those who cannot succeed at these proficiency tests have to study preparation class for at least one semester, depending on their level of English. Few students pass their language classes in one term, and most study for a complete year. Preparation classes use multiple means of assessment to aid student progress. Their proficiency in foreign language is expected to impact on their undergraduate studies which is also reflected in students’ having language problems in tertiary education. A study concerning international students in the UK, Australia and the United States shows English language proficiency and subsequent academic achievement of international students a concern for higher education institutions (Rochecouste et. al.,2012). Some even question the value of preparation year due to its negative impact on academic achievement due to delay (Bahar, 2013). A sound assessment is expected to help decide what to do and how language assessment should be. Considering the significant role of assessments in guiding decisions about organizations and individuals, it is of paramount importance to establish a valid assessment system (Wolf et al., 2008).

In many universities, especially at the undergraduate level, the scores from language tests may be the only evidence of English language ability used (O’Loughlin, 2013). But, for both theoretical and technical reasons, the predictive validity coefficients between placement test scores and final grades or retention in a course generally demonstrate a weak relationship (Armstrong, 2000).

Language testing and Academic Achievement

Investigating the relationships between language skills and academic achievement might help decision makers on how much to focus on language learning prior to undergraduate studies. Higher correlations would imply stronger relationships. Testing the relationship between achievement and language skills is not a new concept.
Studies have found correlation between academic achievement and language skills (Kato et al., 2004), which is quite understandable.

Alternative forms of assessment in addition to conventional standardized tests have increased their use for a more accurate picture of student ability. These new forms of assessment function as an ongoing process and are used more frequently to assess students’ growth in language ability and content knowledge (Chisega-Negrila, 2011). The assessment and evaluation practices instructors report using within university-based ESL=EFL courses vary both within and across the different settings (Cheng, Rogers & Hu, 2004). A study found also found students of the lower proficiency were least satisfied with the foreign language medium instruction while those of the upper proficiency were most satisfied (Han, 2001), which implies low achievers are influenced negatively by foreign language medium education.

**Portfolio, Participation and Absence**

Among the types of assessment is participation, attendance, project and portfolio. Portfolio use is widespread in language teaching especially to assess skills in reading and writing in language classes (Bryant & Timmins, 2002; Cole et al., 2000). A study that compared portfolio and traditional assessment with respect to test anxiety, attitude, study behavior found statistically significant difference between the two favoring portfolios (Bahceci 2009) and in another study portfolio was found to decrease test anxiety (Aka İ. E., Güven, E., Göksu, V. & Aydoğdu, M., 2011). However, portfolios are also criticized in that students make use of materials from their classmates or other friends, which makes dependence on portfolio scores a problematic one.

Although the relationship between attendance and academic achievement has been well-documented (Roby, D. E., 2004; Torenbeeka, M., Jansena, E. & Suhere, C., 2012; Sawyer, R. & Gibson, N., 2012; Spradlin, T., Cierniak, K., Shi, D. & Chen, M., 2012; Morrisey, T. W., Hutchison, L. & Winsler, A., 2014) relationship between prior attendance and later achievement needs more focus. Moore, Armstrong and Pearson (2008) discuss studies that place importance to the relationship between attendance and achievement and those that question this relationship. Of those that claim against Marburger (2001) has been critical of some approaches to exploring links between lecture attendance and academic performance.

There is wide consensus on the relationship between absence and underachievement. Most of the literature on underachievement suggests that underachievers have lower academic self-perceptions, lower self-motivation and self-regulation, less goal-directed behavior, and more negative attitudes toward school than high achievers do (Reis & McCoach, 2000). In a longitudinal study of underachievers, McCall, Evahn, and Kratzer (1992) found that 13 years after high school, the educational and occupational status of high school underachievers paralleled their grades in high school, rather than their abilities. Many studies found underachievers are less likely to complete college and remain in their jobs (Credé & Kuncel, 2008).

This study aims to shed more light on the relationship between preparation class achievement factors and later academic achievement focusing on module scores, exit exam scores, participation, portfolio and absence.

**METHOD**

**Participants**

There is a need to compare the results of different assessment types see which one better predicts academic achievement. Usually what has been reported is, proficiency tests correlate more with academic achievement than do other tests that depend on the content taught. The study used convenience sampling, and for this end, results of 1223 students from a university preparatory school were used for analysis. Data of 15 students were excluded due to insufficient information. This data included module scores, foreign language exit exam results, participation, portfolio, absence and achievement results of students from five faculties.

**Data collection**

Data from the preparatory school were matched with student GPAs at four different terms in their undergraduate studies; after the first term, second term, second year second term and third year first term
GPAs. Student gender, attendance, portfolio scores, module scores, participation scores, exit exam scores, faculties and departments were gathered from the preparatory school. Data with missing GPAs were cleared and 1208 students were included in the study.

**FINDINGS**

Correlations between different assessment types and GPAs have been given in the following table.

Table 1: Bivariate Correlations among Preparatory Class Data and GPAs

<table>
<thead>
<tr>
<th>Variable</th>
<th>GPA1</th>
<th>GPA2</th>
<th>GPA3</th>
<th>GPA4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module Score</td>
<td>.069*</td>
<td>.015</td>
<td>.017</td>
<td>.069*</td>
</tr>
<tr>
<td>Exit Score</td>
<td>-.014</td>
<td>.816**</td>
<td>.506**</td>
<td>.509**</td>
</tr>
<tr>
<td>Portfolio</td>
<td>.127**</td>
<td>.810**</td>
<td>.458**</td>
<td>.438**</td>
</tr>
<tr>
<td>Participation</td>
<td>.179**</td>
<td>.693**</td>
<td>.469**</td>
<td>.515**</td>
</tr>
<tr>
<td>Total Absence</td>
<td>-.171**</td>
<td>-.615**</td>
<td>-.260**</td>
<td>-.259**</td>
</tr>
</tbody>
</table>

Bivariate correlations between the given variables produced the following results: There was positive low correlation between gender and portfolio (r=0.127) and participation (r=0.179) (p<0.001), on the other hand there was negative correlation between gender and absence (r=-.171). Although there was no correlation between gender and GPA1, correlation moved from no correlation to insignificant correlation over three years. On the other hand, there was no correlation between gender and passing the preparatory class.

Module score and exit exam score, which are a result of achievement in language tests during preparatory year, correlated moderately over the years consistently. As would be expected, module score had high correlation with portfolio (r=0.810) and participation (r=0.693), but exit exam score did have moderate correlation with portfolio and had low correlation with participation.
Module score had consistent moderate correlation ($r=0.506, 0.515, 0.515$ and $0.509$) with GPAs over three years like exit exam score but, Module score which is a result of studies in prep classes correlated with GPAs higher than the exit exam which is independent of content taught.

Correlation of portfolio and participation with GPAs increased over three years, which imply students’ achievement habits have more to do with achievement. Besides, negative correlation between total absence and GPAs increased over three terms as well. Negative correlation between total absence in prep school and GPA moved from low to moderate over time ($-0.298$, $p>0.001$).

Because GPA4 is the most distant grade to preparation school scores, relation of portfolio to GPA4 was sought. Scatterplot shows the distribution of GPA-4 and portfolio scores with respect to one another. Linear relationship increases especially after portfolio score increases.

Local regression (loess) fit line on the graph shows the higher the portfolio score the higher the correlation with GPA is. Students with lower GPAs have less consistent scores with regard to portfolio, which may be due to the common problems expressed by students and instructors alike; copying from others, irrelevant submissions etc.

Fisher’s z statistic produced significant difference between correlations of the module scores and exit exam scores with respect to portfolio and participation scores and total absence, which is understandable. Test of significance of difference between correlations of module score and exit exam score with GPA1 did not produce a significant result ($z=1.535$) but two tailed test of difference between correlations of the module
(0.509) and exit exams (0.438) with GPA4 produced significant difference (z=2.249, p>0.025) meaning module scores began to correlate higher with GPA4 scores in time as opposed to exit exam score.

In the second place multiple regression for GPAs was carried out to follow how the dependent GPA variables were predicted by the models.

Table 2: Linear Multiple Regression Models with Backward Method to Predict GPA1 and GPA4

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Model</th>
<th>t</th>
<th>p</th>
<th>β</th>
<th>VIF</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>adj.R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Overall Model</td>
<td>15,681</td>
<td>3</td>
<td>.001</td>
<td>.319</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Absence</td>
<td>1,606</td>
<td>.01</td>
<td>.194</td>
<td>2,011</td>
<td>(95)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Participation</td>
<td>1,395</td>
<td>.01</td>
<td>.184</td>
<td>2,402</td>
<td>(95)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Module Score</td>
<td>5,406</td>
<td>.01</td>
<td>.541</td>
<td>1,381</td>
<td>(95)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Overall Model</td>
<td>41,329</td>
<td>1</td>
<td>.001</td>
<td>.298</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Module Score</td>
<td>6,429</td>
<td>.01</td>
<td>.553</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Sciences</td>
<td>Overall Model</td>
<td>216,706</td>
<td>1</td>
<td>.001</td>
<td>.301</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Module Score</td>
<td>14,721</td>
<td>.01</td>
<td>.550</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Overall Model</td>
<td>79,176</td>
<td>3</td>
<td>.001</td>
<td>.318</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Gender</td>
<td>2,636</td>
<td>.09</td>
<td>.097</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Participation</td>
<td>2,284</td>
<td>.023</td>
<td>.117</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Module Score</td>
<td>9,068</td>
<td>.01</td>
<td>.464</td>
<td>2,011</td>
<td>(95)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Econ &amp; Admin.</td>
<td>Overall Model</td>
<td>58,564</td>
<td>2</td>
<td>.001</td>
<td>.295</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Gender</td>
<td>1,966</td>
<td>.05</td>
<td>.100</td>
<td>1,00</td>
<td>(275)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Module Score</td>
<td>10,633</td>
<td>.01</td>
<td>.538</td>
<td>1,00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Overall Model</td>
<td>116,292</td>
<td>1</td>
<td>.001</td>
<td>.291</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Module Score</td>
<td>10,784</td>
<td>.01</td>
<td>.542</td>
<td>-</td>
<td>(281)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>Overall Model</td>
<td>32,314</td>
<td>3</td>
<td>.001</td>
<td>.295</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Gender</td>
<td>-1,576</td>
<td>.116</td>
<td>.090</td>
<td>1,032</td>
<td>(224)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Participation</td>
<td>-2,564</td>
<td>.011</td>
<td>.186</td>
<td>1,669</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA1</td>
<td>Module Score</td>
<td>8,999</td>
<td>.01</td>
<td>.644</td>
<td>1,630</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Overall Model</td>
<td>69,435</td>
<td>1</td>
<td>.001</td>
<td>.234</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA4</td>
<td>Module Score</td>
<td>8,333</td>
<td>.01</td>
<td>.487</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A multiple regression with backward method was carried out questioning predictive value of scores in preparation school with faculties in focus. Predictors of GPAs changed from absence, participation and module score to only module score between GPA1 and GPA4 in Faculty of Education and the variance explained decreased from %31,9 to %29,8. The situation was somewhat different for Faculty of Arts and Sciences; Although module score only predicted GPA1 explaining %30,1 of the variance, gender, participation and module score began to predict GPA4 with a variance of %31,8.

In Faculty of Economics and Administrative Sciences gender and module score explained %29,5 of the variance in GPA1 but only module score predicted %29,1 of the variance in GPA4. As for Faculty of Engineering the
variance explained by gender, participation and module score was %29.5 for GPA1. But %23.4 of the variance was explained by module score, a decrease over time. The difference between correlations of module and exit scores with GPAs was significant in faculty of science and faculty of economics and administration, as Fisher’s z test showed.

DISCUSSION

Correlation of absence with GPA1 was low in prep school whereas it had moderate correlation with GPA4. Attendance (absence) and GPAs had increasingly significant correlations which imply that student practices/habits about attendance have a lot to do with achievement in general.

As multiple regression results show, in Faculty of Arts and Sciences predictive value of preparation school predictors increased over time, which may be due to dependence on language proficiency in this faculty. In Faculty of Education and Faculty of Economics and Administrative Sciences alike predictive value of preparation class factors decreased over time as expected.

Even if language proficiency is utmost importance where medium of instruction is the foreign language, other student factors seem to play their role distinctively. Module score had higher correlations than exit exam score, implying achievement tests’ predictive value.

As the scatterplot indicates students with scores of low to moderate scores of portfolio have less correlation with GPAs compared to high achieving students. This might imply the problem addressed by teachers who do not favor use of portfolio in account of its being a source of easy cheating by especially low achieving students. Significantly higher correlation between module score and GPA4 than with exit exam score may be interpreted as students’ studies, study habits and the resulting academic achievement are more determining than is English language proficiency. It is more likely to expect higher correlation between social sciences and foreign language proficiency, which is the medium of instruction in some departments, and, that is the case for Faculty of Arts and sciences where participation, gender and module score predicted GPA4.

Results from Faculty of Engineering imply the following: Changes in correlations between language tests and GPAs and between portfolio, participation, absence and GPAs show that effect of language over time decreases, whereas other factors (e.g. portfolio, participation and absence) continue to influence. Yet, regression results show Findings of a study by Dafouz, Camacho and Urquia (2014) show that English and native language classes obtain similar results, suggesting that the language of instruction does not seem to compromise students’ learning of academic content. Differences, however, are found regarding learners’ performance in the three disciplinary subjects under scrutiny, with history yielding slightly higher results than accounting and finance (Dafouz, Camacho & Urquia, 2014).

Although Baldwin (1980) and Gatherer and Manning (1998) found local evidence that lecture attendance has a statistically significant relationship with subsequent academic performance, they also highlighted that the statistical significance was not particularly strong. Results of this study express a similar conclusion. More recently, Van Walbeek (2004) has suggested that the link may be weaker than previously assumed or confirmed. Marburger (2001) has been critical of some approaches to exploring links between lecture attendance and academic performance. He argues that methodologies typically used to explore the link generally just regress some broad measure of academic achievement against some, often, blunt measure of attendance. Yet isolated correlations among faculties are evidence that they are not ‘blunt’ in that faculty of education or economics and administrative sciences depend more on foreign language proficiency than faculty of engineering where regression results indicated the differences when faculties are parted.

Study motivation and study skills exhibit the strongest relationships with both grade point average and grades in individual classes (Credé, & Kuncel, 2008). This may have something to do with correlation of preparation school attendance and undergraduate GPAs.
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REFERENCES


SCHOOL ADMINISTRATORS' LEVEL OF USING SCIENTIFIC PROBLEM-SOLVING SKILLS IN ORGANISATIONAL PROBLEMS

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ABSTRACT

This study was designed to identify high school administrators' level of using scientific problem-solving techniques in organisational problems based on their own views. The population of the study comprised of administrators (principals, chief deputy principals and deputy principals) working at high schools in Kırklareli city centre in 2014-2015 school year. No sampling method was used since the whole population was reached within the study. Survey model was adopted, and the "Scale of School Administrators' Level of Using Scientific Problem-Solving Processes and Techniques in Organisational Problems" developed by Sağır and Göksoy (2012: 1-11) in 5-point Likert type was used as the data gathering instrument. The scale was adapted to the Kırklareli sample and the Cronbach's Alpha coefficient was 0.95.

The findings revealed a difference in the administrators' level of using scientific problem-solving techniques based on various variables. The study showed that in overall, the school administrators "usually" used the scientific problem-solving process in the organisational problems they encountered, but stated that they did not have the ability necessary to solve organisational problems. It is suggested that policies such as requiring educational administrators to have a Master's degree, and organising in-service training should be developed to ensure that they have the ability to solve organisational problems.

Key Words: School Administrator, High School, Problem-Solving, Organisational Problems, Scientific Problem-Solving Techniques

INTRODUCTION

In today's world, the problems people face have become more complex compared to the past. Solutions of these problems that require creative thinking, are accepted as important and difficult situations, and described as situations that direct individuals to search for reasons and results through questions or a set of questions (TDK, 2015:1) show more diversity.

Many factors are observed to affect the problem-solving efforts of people who deal with more problems today. The idea to produce a solution for an issue is directly related to individuals' perceiving that issue as a problem. As long as there is an outcome and a goal that individuals want to reach, problem solving is possible. There is no absolute way of problem solving techniques, there are various alternatives. It is also known that educational institutions face many different problems and administrators produce various methods to solve these problems.

From the perspective of schools, a problem is a situation that inhibits, slows down or disrupts achieving the school aims. As the administration starts trying to eliminate such obstacles, the problem-solving process begins. To keep the individual-institution dimensions of the social system in balance with a sense of mission, and operationalize the elements around them for achieving the school aims, school administrators should do their job effectively and perform successful administrative behaviours. In many studies on our education
system, many different institutional and structural problems were observed. Knowing which scientific problem-solving techniques are used in solving these problems is seen as necessary to produce new policies. In educational institutions, particularly high schools where students receive education before they choose their career pathways, this necessity becomes more important. In this regard, it is of significance to know the levels of using scientific problem-solving techniques in organisational problems by administrators working at high schools. Accordingly, there was a need to conduct this study.

The aim of this study was to identify high school administrators’ level of using scientific problem-solving process and techniques in organisational problems based on their own views and offer suggestions to practitioners based on these views.

To educate 21st century individuals who have adopted constant development as their philosophy of life, think analytically, have developed problem-solving and decision-making skills, are open and flexible to team work, seek information and can access to it, have high qualifications and try to develop themselves, believe, are assertive and confident, and have national and universal values, each school should be turned to a high-quality school. This requires changes that would improve education, and thus, the participation of families, school administrators and all other relevant members of the society in addition to students, and coordination of constant development efforts (Gülşen, 2003: 68-69). However, ensuring changes can reveal various problems. The word “problem” comes from “proballo” which derived from the Greek word “proballo” meaning an obstacle that comes in way (Sungur, 1992: 129). According to Morgan (2009: 133), a problem is a situation of conflict that obstructs individuals in reaching a goal. On the other hand, problem solving is the process of overcoming the experienced difficulties in the process of reaching a goal by investigating the reasons and consequences (Büyüköztürk, 2013: 24-26; Karasar, 2012: 54; TDK, 2015: 1).

Problem situations are solved through certain stages. In the literature, these stages are briefly described as follows: (Büyüköztürk, 2013: 24-26; Karasar, 2012: 29-30; Yıldız, 2003: 29):
1. **Realisation and Definition of the Problem**: The first stage in the problem-solving process is to define the problem. It should be noted that a realistic definition of the problem with all its aspects considering various variables is of great importance.
2. **Analysing the Problem**: Before solving the problem, it should be analysed thoroughly, and information such as its limits, dimensions, reasons and necessities should be identified.
3. **Developing Alternative Solutions**: In this stage, ideas and possibilities regarding the solution are put forward. Here, it should not be forgotten that creative thinking is active. Possible solutions are offered after revising the information related to the problem, and the appropriate solution is aimed to be found by examining the positive and negative aspects of these solutions.
4. **Implementing the Solution Chosen**: In this stage, one of the important points is to follow the implementation process. In this way, whether the solution of the problem yielded the desired result becomes clear.
5. **Evaluation the result**: To identify the effectiveness of the solution and whether new problems have arisen, the results should be evaluated in a realistic way. Another point that should be taken into account is the ideas arguing that there should be standards in evaluation.

There is no absolute way of solving problems. There are various alternatives that exist and are tested to solve problems. Solving problems effectively is a kind of art. Many techniques are used in solving problems. Some of these techniques are described below (Arcaro, 1995: 108; Çalık, 2003: 178; Erdoğan; 2000: 27; Ernest, 1992: 143; Gülşen, 2000: 44-53; Langfort & Cleary, 1995: 96, 177; Yüksel, 2004: 1):
- **Brainstorming**: The basis of brainstorming is enabling individuals to generate ideas by postponing judgements and forming group conditions (Yüksel, 2004: 1).
- **Pareto Chart**: The essence of this chart is the thinking that the factor that is less than 20%, but has vital importance is responsible for 80% of the problems and deficiencies in the system. It is formed by ordering the bars that represent the effects or frequency of the problem side by side. In fact, the pareto chart is a column chart in which factors and processes are ordered in descending flow, importance and frequency (Arcaro, 1995: 108; Gülşen, 2000: 48).
**Decision Tree Analysis:** In this technique, advantages and disadvantages of each alternative are specified. Then, the alternative with the highest value is chosen. This technique provides individuals with a setting for them to structure their ideas and recognize the information needed (Erdoğan; 2000: 27).

**Force-Field Analysis:** It is a method that enables sorting the elements that support and limit the solution visually. In this method, the goal is to enhance the driving forces to be used in solving the problems and prevent the limiting forces. The primary aim of this analysis is to define the dynamic and inhibiting forces perceived in actualizing a proposed change (Arcaro, 1995: 101; Langfort & Cleary, 1995: 177).

**PDCA (Plan-Do-Check-Act) or Deming Cycle:** The PDCA cycle developed by W. E. Deming is one of the most important tools in ensuring the constant development process and is the process development implementation of the scientific method (Ernest, 1992: 143). This process includes repetitive steps such as data gathering, analyzing, interpreting, evaluating and planning (Gülsen, 2000: 49; Langford & Cleary; 1995: 96).

**Fishbone Diagram:** It is also known as the cause-effect diagram. In this diagram, the primary reasons behind the problems that arise in organisation processes and systems, and the sub-reasons are identified and solutions can be offered towards the result. This technique is used to reveal the possible reasons behind a problem and the sub-effects of these reasons. In this way, it provides input related to the problem (Çalık, 2003: 47; Gülsen, 2000: 46-47).

**Team Work:** It refers to the small groups formed to solve a problem in organisations in general. After identifying the problem and analysing it, they present the most suitable solution to the administration. The solution of the problem is searched with the participation of all group members by using mutual development, supervision, quality check and progression techniques on a constant self-development basis (Ishikawa, 1997:142).

**SWOT Analysis:** It is a solution technique in which the opportunities and threats in the environment of the organisation as well as its strengths and weaknesses are identified and analysed particularly in the strategic planning process (Schmerhorn, 1989: 142).

**Team Work:** It refers to the formation of a group to identify, analyse and offer solutions for various problems in their area of expertise in the organisation. Such group come together regularly and propose different solutions for problems (Efıl, 1999: 202).

**Six Thinking Hats Technique:** This technique in which individuals learn separating their feelings from reasoning, and their creativity from knowledge background enables individuals to do one thing at a time. Each of the hats in this technique represents a certain type of thinking. Its aim is to provide an opportunity to perform a defined role-play, direct attention, produce alternative solutions by not performing a role-play based on suitability and certain set of rules (De Bono; 2008: 1-20; Koray, 2004: 3).

**Nominal Group Technique:** In this technique, groups can be formed based on the problem. Since it is a written technique, the decision-making process becomes more effective by enabling individuals to reflect their feelings and ideas in a short period without being affected from other individuals in the group to reduce conflicts within the group (Çalık, 2003: 178).

**Flow Diagram:** It is a schema that visualizes the functioning of a process or rule in an organisation. Individuals who participate in the process with a schema prepared have a guide for what to do, which stages to follow and possible ways between the beginning and end of the process. The flow diagram enables recording and understanding the decisions, writing the process accurately and clearly, and connecting the elements. In education, flow diagrams can be effectively used in many ways such as introducing a new education system to school administrators or a broader community, lesson planning by teachers, choosing new teachers, and educational processes (Çetin, Akın & Erol,1998: 339; Gülsen, 2000: 44-45).

**METHOD**

The population of the study conducted in survey model comprised of administrators (principals, chief deputy principals and deputy principals) working at high schools in Kırklareli city centre in 2014-2015 school year. No sampling method was used since the whole population was reached within the study. 13 of the administrators participated in the study (19,70%) were female while 53 (80,30%) were male.

Survey model was adopted, and the "Scale of School Administrators' Level of Using Scientific Problem-Solving Processes and Techniques in Organisational Problems" developed by Sağır and Göksoy (2012: 1-11) in 5-point
Likert type was used as the data gathering instrument. The scale was adapted to the Kırklareli sample and the Cronbach’s Alpha coefficient was 0.95.

The weights assigned to the extent of agreement for the propositions in the scale and the limits of these weights are as follows: “Never: 1.00-1.80”, “Rarely: 1.81-2.60”, “Sometimes: 2.61-3.40”, “Usually: 3.41-4.20”, “Always: 4.21-5.00”.

In data analysis, SPSS was used, statistical analyses were performed, and frequencies, percentages and arithmetic means were determined. In addition, the data were evaluated and interpreted in terms of the gender variable using the Independent Samples T-Test.

**FINDINGS AND COMMENTS**

In this section, the data obtained related to the school administrators’ level of using scientific problem-solving process and techniques were interpreted by the help of the statistical information presented in tables. In the interpretation of the data, package programs were used in the computer environment. Evaluations were carried out based on the information obtained as a result of the interpretations. The tables formed by the help of the data obtained, and the evaluations based on the data in the tables are presented below.

The data related to the school administrators’ level of using scientific problem-solving processes in organisational problems were firstly tabulated, and the frequencies, standard deviations and arithmetic means are presented in Table 1.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Propositions</th>
<th>Degree of Agreement</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Never</td>
<td>Rarely</td>
</tr>
<tr>
<td>1</td>
<td>I define organisational problems.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>I identify solution alternatives for organisational problems.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>I choose the most suitable possible solution for organisational problems.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>I take into account the importance of the chosen solution for the school/organisation.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>I do planning for implementing the solutions for organisational problems.</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>I implement the solutions developed for solving organisational problems.</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>I am creative in solving organisational problems.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>I consider the contribution of the solution to the school community.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>I prepare reports of the practices implemented in the problem-solving process.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>I evaluate the problem-solving process.</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

**General Arithmetic Mean**

4,17
The high school administrators agreed on the propositions related to the scientific problem-solving processes in organisational problems at the level of "usually" with a mean of $\bar{x}=4.17$. When the levels of agreement on the propositions were examined separately, it was observed that the school principals, chief deputy principals and deputy principals agreed on the propositions "I define organisational problems.", "I identify solution alternatives for organisational problems.", "I choose the most suitable possible solution for organisational problems.", "I take into account the importance of the chosen solution for the school/organisation.", "I am creative in solving organisational problems." and "I consider the contribution of the solution to the school community." at the level of "always" with varying arithmetic means.

They showed agreement on the propositions "I do planning for implementing the solutions for organisational problems.", "I implement the solutions developed for solving organisational problems.", "I prepare reports of the practices implemented in the problem-solving process." and "I evaluate the problem-solving process." at the level of "usually" again with varying mean scores.

While the proposition on which the school administrators showed agreement with a $\bar{x}=4.48$ mean at the level of "always" was "I take into account the importance of the chosen solution for the school/organisation.", the proposition they showed the lowest level of agreement with a mean of $\bar{x}=3.77$ at the level of "usually" was "I prepare reports of the practices implemented in the problem-solving process."

The difference in the high school administrators' views on their level of using scientific problem-solving processes based on the gender variable was analysed using Independent Sample T-Test, and the propositions in which significant differences were revealed are presented in Table 2.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Proposition</th>
<th>Gender</th>
<th>N</th>
<th>Sig</th>
<th>$\bar{x}$</th>
<th>SD</th>
<th>$\bar{SD}$</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>I take into account the importance of the chosen solution for the school/organisation.</td>
<td>Female</td>
<td>13</td>
<td>.000</td>
<td>4.38</td>
<td>277</td>
<td></td>
<td>64</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>53</td>
<td>.438</td>
<td>4.92</td>
<td>627</td>
<td></td>
<td>-</td>
<td>.016</td>
</tr>
<tr>
<td>7</td>
<td>I am creative in solving organisational problems.</td>
<td>Female</td>
<td>13</td>
<td>.213</td>
<td>4.69</td>
<td>480</td>
<td></td>
<td>64</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>53</td>
<td>.438</td>
<td>4.23</td>
<td>505</td>
<td></td>
<td>64</td>
<td>.016</td>
</tr>
<tr>
<td>8</td>
<td>I consider the contribution of the solution to the school community.</td>
<td>Female</td>
<td>13</td>
<td>.000</td>
<td>4.15</td>
<td>718</td>
<td></td>
<td>64</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>53</td>
<td>.438</td>
<td>4.62</td>
<td>506</td>
<td></td>
<td>64</td>
<td>.016</td>
</tr>
</tbody>
</table>

For the proposition "I take into account the importance of the chosen solution for the school/organisation.", the Levene's test revealed a significant difference ($p<0.05$), which shows that the distribution was not homogeneous. As is seen in the table, the significance value in the Sig. column is 0.003. Since this value is lower than 0.05, we can say that the relationship between gender and the scores in the proposition "I take into account the importance of the chosen solution for the school/organisation." was statistically significant, $p < 0.05$.

For the proposition "I am creative in solving organisational problems.", the Levene's test was found to be non-significant ($p>0.05$), which shows that the distribution was homogeneous. As is seen in the table, the significance value in the Sig. column is 0.16. Since this value is lower than 0.05, we can say that the relationship between gender and the scores in the proposition "I am creative in solving organisational problems." was statistically significant, $p < 0.05$.

For the proposition "I consider the contribution of the solution to the school community.", the Levene's test revealed a non-significant difference ($p>0.05$), which shows that the distribution was homogeneous. As is seen in the table, the significance value in the Sig. column is 0.003. Since this value is lower than 0.05, we can say that the relationship between gender and the scores in the proposition "I consider the contribution of the solution to the school community." was statistically significant, $p < 0.05$. 

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The frequencies and arithmetic means related to the high school administrators’ views on the predetermined scientific problem-solving techniques -these techniques are those given in a list in advance- they use are presented in Table 3.

Table 3: High School Administrators’ Views on Scientific Problem-Solving Techniques They Use in Organisational Problems

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Propositions (Scientific problem-solving techniques that school administrators use in organisational problems)</th>
<th>Degree of Agreement</th>
<th>f</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Usually</th>
<th>Always</th>
<th>( \bar{x} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I use the cause-effect diagram technique.</td>
<td></td>
<td>3</td>
<td>10</td>
<td>14</td>
<td>27</td>
<td>12</td>
<td></td>
<td>3.53</td>
</tr>
<tr>
<td>2</td>
<td>I use the tree diagram technique.</td>
<td></td>
<td>6</td>
<td>6</td>
<td>17</td>
<td>27</td>
<td>10</td>
<td></td>
<td>3.44</td>
</tr>
<tr>
<td>3</td>
<td>I use the six thinking hats technique.</td>
<td></td>
<td>6</td>
<td>9</td>
<td>25</td>
<td>17</td>
<td>9</td>
<td></td>
<td>3.21</td>
</tr>
<tr>
<td>4</td>
<td>I use the survey technique.</td>
<td></td>
<td>3</td>
<td>6</td>
<td>22</td>
<td>27</td>
<td>8</td>
<td></td>
<td>3.47</td>
</tr>
<tr>
<td>5</td>
<td>I use the brainstorming technique.</td>
<td></td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>33</td>
<td>20</td>
<td></td>
<td>4.00</td>
</tr>
<tr>
<td>6</td>
<td>I use the 5N1K (wh questions) technique.</td>
<td></td>
<td>7</td>
<td>1</td>
<td>19</td>
<td>21</td>
<td>18</td>
<td></td>
<td>3.64</td>
</tr>
<tr>
<td>7</td>
<td>I use the similarity diagram technique.</td>
<td></td>
<td>8</td>
<td>5</td>
<td>17</td>
<td>25</td>
<td>11</td>
<td></td>
<td>3.39</td>
</tr>
<tr>
<td>8</td>
<td>I use the force-field analysis technique.</td>
<td></td>
<td>8</td>
<td>6</td>
<td>13</td>
<td>23</td>
<td>16</td>
<td></td>
<td>3.50</td>
</tr>
<tr>
<td>9</td>
<td>I use the relationship diagram technique.</td>
<td></td>
<td>7</td>
<td>8</td>
<td>18</td>
<td>23</td>
<td>10</td>
<td></td>
<td>3.33</td>
</tr>
<tr>
<td>10</td>
<td>I use the nominal group technique.</td>
<td></td>
<td>7</td>
<td>16</td>
<td>15</td>
<td>21</td>
<td>7</td>
<td></td>
<td>3.08</td>
</tr>
<tr>
<td>11</td>
<td>I use the case study technique.</td>
<td></td>
<td>1</td>
<td>7</td>
<td>12</td>
<td>30</td>
<td>16</td>
<td></td>
<td>3.80</td>
</tr>
<tr>
<td>12</td>
<td>I use the team work technique.</td>
<td></td>
<td>0</td>
<td>4</td>
<td>19</td>
<td>24</td>
<td>28</td>
<td></td>
<td>4.15</td>
</tr>
</tbody>
</table>
| 13       | I use the PDCA cycle.                                    \[\begin{array}{*{20}c}
| 14       | I use the SWOT analysis technique.                                                                     |                     | 6  | 3      | 18     | 22       | 17      |        | 3.62    |
| 15       | I use the Pareto diagram technique.                                                                    |                     | 11 | 9      | 15     | 15       | 16      |        | 3.24    |

General Arithmetic Mean \( \bar{x} \) = 3.55

The school administrators (principals, chief deputy principals and deputy principals) stated that they used the scientific problem-solving techniques in solving organisational problems at the level of “usually” with an arithmetic mean of \( \bar{x} \) = 3.55. They mostly used the “team work technique” to solve organisational problems while they least used the “nominal group technique”. They stated that to solve organisational problems, they “always” used the techniques “cause-effect diagram”, “tree diagram”, "brainstorming", “5N1K (wh questions), “force-field analysis”, "case study", “team work", "PDCA cycle" and "SWOT analysis" with varying arithmetic means. They asserted that they "sometimes" used the techniques "six thinking hats", "similarity diagram", "relationship diagram", "nominal group" and "Pareto diagram" with again varying arithmetic means.

The difference in the high school administrators’ views on the scientific problem-solving processes they used based on the gender variable was analysed using Independent Samples T-Test, and the propositions in which significant differences were revealed are presented in Table 4.
Table 4: Independent Samples T-Test Results of the High School Administrators' Views on the Scientific Problem-Solving Techniques They Used in Organisational Problems Based on the Gender Variable

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Proposition</th>
<th>Gender</th>
<th>N</th>
<th>Sig</th>
<th>$\bar{x}$</th>
<th>SD</th>
<th>Sd</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I use the cause-effect diagram technique.</td>
<td>Female</td>
<td>13</td>
<td>.027</td>
<td>4.08</td>
<td>.760</td>
<td>64</td>
<td>-2.051</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>53</td>
<td></td>
<td>3.40</td>
<td>1.132</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I use the tree diagram technique.</td>
<td>Female</td>
<td>13</td>
<td>.646</td>
<td>4.08</td>
<td>.954</td>
<td>64</td>
<td>-2.328</td>
<td>.017</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>53</td>
<td></td>
<td>3.28</td>
<td>1.133</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I use the force-field analysis technique.</td>
<td>Female</td>
<td>13</td>
<td>.542</td>
<td>4.23</td>
<td>1.092</td>
<td>64</td>
<td>-2.354</td>
<td>.022</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>53</td>
<td></td>
<td>3.32</td>
<td>1.283</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I use the nominal group technique.</td>
<td>Female</td>
<td>13</td>
<td>.199</td>
<td>3.62</td>
<td>.961</td>
<td>64</td>
<td>-1.814</td>
<td>.044</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>53</td>
<td></td>
<td>2.94</td>
<td>1.216</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the proposition "I use the cause-effect diagram technique.,” the Levene's Test was found to be significant (p<0.05), which shows that the distribution was not homogeneous. As is seen in the table, the significance value in the Sig. column is 0.15. Since this value is lower than 0.05, we can say that the relationship between gender and the scores in the proposition "I use the cause-effect diagram technique. was statistically significant, p < 0.05.

For the proposition "I use the tree diagram technique.,” the Levene's Test was found to be non-significant (p>0.05), which shows that the distribution was homogeneous. As is seen in the table, the significance value in the Sig. column is ,017. Since this value is lower than 0,05, we can say that the relationship between gender and the scores in the proposition "I use the tree diagram technique. was statistically significant, p < 0.05.

For the proposition "I use the force-field analysis technique.,” the Levene's Test was found to be non-significant (p>0.05), which shows that the distribution was homogeneous. As is seen in the table, the significance value in the Sig. column is ,022. Since this value is lower than 0,05, we can say that the relationship between gender and the scores in the proposition "I use the force-field analysis technique. was statistically significant, p < 0.05.

For the proposition "I use the nominal group technique.,” the Levene's Test was found to be non-significant (p<0.05), which shows that the distribution was homogeneous. As is seen in the table, the significance value in the Sig. column is 0.044. Since this value is lower than 0,05, we can say that the relationship between gender and the scores in the proposition "I use the nominal group technique. was statistically significant, p < 0.05.

RESULTS AND SUGGESTIONS

The following results were revealed based on the findings
The school administrators (principals, chief deputy principals and deputy principals) were found to have positive approaches to using scientific problem-solving process and techniques in organisational problems. Among these views, there were significant differences in the propositions "I take into account the importance of the chosen solution for the school/organisation.,” "I am creative in solving organisational problems.,” and "I consider the contribution of the solution to the school community. “ on the basis of the gender variable.

The school administrators stated that they recognized the organisational problems, and developed solutions that were suitable to the school in accordance with the principle of contextuality; however, they did not always want to put the solution techniques in writing such as in planning and reporting.

To solve the organisational problems they encountered, the school administrators stated that they mostly used the "team work technique" to solve organisational problems while they least used the "nominal group
technique" among scientific problem-solving techniques. Based on the gender variable, there were significant relationships for the techniques "cause-effect diagram", "tree diagram", "force-field analysis" and "nominal group" that the administrators used.

The following suggestions can be offered based on the results of the study

Since the school administrators (principals, chief deputy principals and deputy principals) were not willing to keep a record of the practices to solve organisational problems such as in planning and reporting that are important steps of scientific problem-solving although they had positive approaches to implementing scientific problem-solving processes, they should go through periodic trainings on scientific problem-solving techniques at academic level.

It would be of significance to reach other stakeholders (e.g. inspectors, teachers, students and parents), obtain their views and make comparisons with the results in this study.

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REFERENCES


STUDENTS’ ATTITUDES TOWARDS CYBER-HOMEWORK

Ceyda SERT
Uşak University
School of Foreign Languages
TURKEY

ABSTRACT

As in every field of education, in foreign language teaching, homework can be considered as an essential part of learning which provides learners various opportunities to practice and improve their language skills both within and out of the class time. With the improvement and rapid emergence of information and communication technologies (ICT) in the world of education, using web tools in the classroom and assigning students through web-sites and software programs have become popular and it is evidenced that both teachers and students make use of these new tools in many ways. Regarding this fact, the present study aims to explore the role of such tools, specifically cyber-homework, on students’ success and outcomes in an EFL classroom. In order to find an answer to this question, total 201 students who enroll in 5th, 6th, and 7th grades in a private college were assigned with web-based homework, i.e. cyber homework, to see whether the use of cyber homework has an effect on their success in language learning. Throughout the experimental process, any attempt of students were recorded and logged automatically which also served as statistical analysis of the data. Additionally, participants’ exam results in their courses were compared with the use amount of the cyber homework of the students. Finally gathered data were analyzed through descriptive analysis. The analysis of the data revealed in general that roughly 39% of the participants showed interest to cyber homework and succeeded in the exams.

Key Words: Cyber homework, web-based homework, technology mediated learning environment.

INTRODUCTION

Learning a language all around the world has become essential. For more than a century, specialists, such as, Diane Larsen Freeman, Jeremy Harmer, Jack C. Richards and Theodore S. Rogers have been working on the best model of teaching languages in foreign language classrooms. These models and many approaches and methods have been applied to those classrooms, such as, Communicative Approach, Humanistic Approach. On the other hand, beginning from the mid 20th century, the use of technology has increased and has been developing every second. Today, the use of computer has been an important component of education and they are utilized throughout the field of education and in language learning and teaching (Baturay, 2007; Koçak, 1997; Makaraci, 2004).

A wide range of electronic technologies have been developed to supplement second language teaching and learning (Baş & Kuzucu, 2009; Liang & Bonk, 2000; Warschauer, 1996). The most common ones of these supplements are CALL (Computer Assisted Language Learning) and DyNed (Dynamic Education) to assist English language teaching processes at schools. “The philosophy of CALL puts a strong emphasis on student-centered lessons that allows learners to learn on their own using structured and/or unstructured interactive lessons” (Ozgan & Yiğit,2010, p.88). Review of available literature shows that the use of both CALL and Dyned help students to gain self-determination and autonomy (Murray,1999) and these students who have computer assisted language classrooms are more successful than others who are instructed with other traditional methods (Baş & Kuzucu, 2009).

In Turkey, besides public schools there are many private primary, secondary and high schools. These private schools especially focus on language education, the success and satisfaction of the students and parents are important for these schools to keep up their continuity. Therefore, to attract the students and to have more enrollments each year they have to integrate new Technologies and innovations into their curricula each year. In previous years the success of the students did not satisfy the board of the school, therefore they decided to
use more professional materials and include web based technologies to their language classrooms. For that reason, the school management decorated each English class with smart boards and with Internet access to have students work on these boards and access all information they might need. The course books also have their own classwares that can be operated on smart boards, and those enable students to watch short video clips, listen to audios, play games and do the exercises on board. Moreover, students were asked to have Internet access at home as well, by this way, with the passcodes given by the teachers, they could continue their study at home. This web-based homework, which is called cyber homework, enables them to do more exercises about the topic, write short blogs, read peers’ blogs and correct each other where necessary. In addition to that, teachers do not have to find more materials and photocopy and distribute them to make the students continue their study at home.

To find out the benefits of computer assisted language classrooms, researcher of this study conducted the research at a private college in Antalya with 5th, 6th and 7th grade students. Since the technology moves and develops rapidly and much technology is used in the classroom environment. Therefore, it is a scientifical necessity to find out:

- Whether this cyber-homework increased students’ success in English and this environment was beneficial for the students to improve their success in English.
- How much students participated cyber homework part of this software program.
- Whether this participation differentiated according to students’ language level.

LITERATURE REVIEW

With the improvement of technology in education, publishers try to find many ways for students to practice and receive immediate feedback through Internet. They provide classwares for smartboards with many software programs that can increase the interest and the motivation of the students. In addition to these classwares, they provide CD’s for students to revise what they have learned in class environment and Internet based softwares which are called cyber homework, where students can improve their learning autonomy and practice more about the topics. This web-based homework is easy to access from any standard browser, each user has a passcode given by the teacher, students are graded immediately and automatically, and teacher can access those recorded grade statistics whenever she wants. Furthermore, students are able to see how much they know, what their mistakes are and how to correct these mistakes. Addition to these, students also have the opportunity to correct their mistakes immediately through feedback given by the program. Once student gives wrong answer, he / she receives another chance to correct the answer. For the mistake which is performed for the second time, the system provides the correct answer, so that student has an opportunity to learn from his/her mistakes. Since these soft-ware programs reveal the success of the students through statistical data, it is worth noting that these applications are beneficial both for students and teachers. In other words, looking at these data, teachers can revise the topics which are not well understood in the classroom environment and plan the following lessons according to this information and learners can learn from their mistakes.

Review of available literature reveals that there have been many studies discussing the pros and cons of web-based homework. These studies provide a comparison with paper-pen homework and how beneficial these web-based homework are (Fynewever, 2003; Richards-Babb, Drelick, Henry, Robertson-Honecker, 2011; Cutshall, Mollick and Bland, 2012; Leong & Alexander, 2013). These studies are mostly conducted in Chemistry, Biology, Physics and Algebra classes. In a General Chemistry class in West Michigan University, Fynewever (2008) conducted a research to find out how students benefited from web-based homework. For eight weeks two groups, a paper-pen based and a web-based assigned group, were supposed to complete each task chosen from the end-of-chapter problems in their textbook. For web-based homework group, their homework was immediately and automatically graded and students had the chance to see where their mistakes were and how to correct them with additional comments given by the computer. On the other hand, paper-pen based group’s homework was graded in a day, two days or more than that (Fynewever, 2008). Therefore with the feedback given in time, the learning of the students was not as efficient as the one given immediately by the web-based programs.
Another study was conducted (Richards-Babb, Drellick, Henry, Robertson-Honecker, 2011) with undergraduate students for the General Chemistry course to find out the improvement and attitude of the students towards web-based homework with 333 students who responded the survey. When the results of the survey were observed, it was clear that the majority of the students (90%) completed all the on-line homework assignments. Although 63% of the students admitted that they had completed the homework for the grade reward, 34% students had completed it for no grade benefits (Richards-Babb, Drellick, Henry, Robertson-Honecker, 2011). Addition to that, it was found out that the students found online homework as a learning tool because they had an opportunity to go over the homework and see their mistakes and to learn from them, that means immediate feedback was given as they were working on it. After the web-based homework, students were given an exam, and the results revealed that students highly benefited from web-based homework as their exam results were higher than before. That means with the positive attitudes of these undergraduate students towards web-based homework, students’ success rates improved.

There are some other studies, too, searching the attitudes and success of the students through web-based homework. Another study was conducted by Cutschall, Mollick and Bland (2012) and the study was aimed to bring the technology into Business Statistics classroom and to reduce students’ anxiety of this course and to increase students’ interpreting skills for larger and real data sets. An application called Aplia was used for this business statistics class. This application provided questions but also enabled teachers to add more questions and tasks and it also provided immediate feedback.

“The results indicate that students, both those that preferred the Internet-based application and those that did not, saw value in the use of the web-based homework part of the application. The students thought that the web-based homework problems were useful and that the immediate feedback provided in the form of an explanation and a grade were useful in their understanding of the material” (Cutshall, Mollick, Bland, 2012; p:8).

Researchers mostly agree with the benefits of web-based homework both for students and teachers that it improves the success and motivation of the students. Teachers prefer web-based homework to pen-paper homework since students are in to computers these days and receive immediate feedback. To find out how web-based homework is connected to the students’ learning and success, a study was conducted in a community college Mathematics class especially on Algebra in the USA with 78 students (Leong & Alexander, 2013). The results showed that their attitudes were mostly positive; they liked the easy accessibility, immediate feedback was given and they found it beneficial, the solution of the question was given step by step which made the students find their mistakes and correct them easily. Students with lower grades and who are shy especially benefited from web-based homework and web-based homework played an essential role because of instant feedback (Leong & Alexander, 2013).

The use of technology for homework improved the performances of the students when it is compared to paper-pen homework. Another experimental study comparing these two types of homework was conducted by Mendicino and Heffernan with 92 5th grade students, with 54 students Internet access at home. All students had pre-and-post-tests and and all students participated in web-based and paper-pen based conditions (Mendicino & Heffernan, 2009). The results of the study stated that the students would learn more through web-based homework when it is compared with paper and pencil homework, web-based homework is more beneficial for students because of immediate feedback. Additionally, through web-based homework teachers can identify the results of the students easily and focus on the difficulties that students experienced while working on the exercises (Mendicino & Heffernan, 2009).

In the light of the related literature it is clearly observed that the improvement of technology has benefits both for teachers and students in terms of web-based homework. Since learners receive immediate feedback, web-based activities enable and affect their learning positively. Students have a chance to study on their own speed which enables students to control and reduce their anxiety. For teachers, grading students’ achievement becomes easier than paper-pen homework and that makes them gain more time for planning more activities to
perform in the classroom. As it was mentioned above, these studies were all conducted in Chemistry, Algebra and Physics classes. This study is aimed to find out the attitudes of the students towards cyber homework, in other words, web-based homework in EFL classroom. It is also aimed to find out whether the students are benefited from this web-based homework and to reveal whether their efforts affected their exam grades.

**METHODOLOGY**

Present study is a quantitative study; quantitative methods of research are based on the collection analysis of numerical data and it also involves using large enough samples of participants to provide statistically meaningful data and employing data analyses that rely on statistical procedures (Gay & Airasian, 2000). The data of quantitative study were collected from software programs of the books that were studied in the classroom. The system automatically saves all the information about the students' performance, such as, when they access the system and how much they achieve. These statistics are accessible for teachers of those classes. The gathered data were statistically analyzed via SPSS in order to clarify the attitudes of the students.

**Participants**

To answer the questions, the research was carried out at a private college in Antalya, Turkey with 5th, 6th and 7th (secondary level) grade students, in total 201 students. For each grade there were four classes, and these were named as 5A/B/C/D, 6A/B/C/D and 7A/B/C/D. At the beginning of the first semester, students were given a proficiency level test in English. After the assessment of this test, students were placed into different classes. The students with higher grades were defined as above-average, and they were divided into two groups to adjust the number of the students in a classroom, that is maximum 20 students for each class. These above-average students were placed into A or B classes according to their grades. Students with lower grades were placed into C classes and defined as average group. Finally, students with the lowest grades were placed into D classes and defined as below-average. At the end of each semester, these students were given another proficiency level test in English and this enabled teachers to see how much progress these students had during a semester in English.

<table>
<thead>
<tr>
<th>Table 1: The Number of The Students According To Their Levels of English</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td>5A</td>
</tr>
<tr>
<td>5B</td>
</tr>
<tr>
<td>5C</td>
</tr>
<tr>
<td>5D</td>
</tr>
<tr>
<td>6A</td>
</tr>
<tr>
<td>6B</td>
</tr>
<tr>
<td>6C</td>
</tr>
<tr>
<td>6D</td>
</tr>
<tr>
<td>7A</td>
</tr>
<tr>
<td>7B</td>
</tr>
<tr>
<td>7C</td>
</tr>
<tr>
<td>7D</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2: Success Levels of The Students According to the Proficiency Test They Took At the Beginning of the Term</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td><strong>Valid</strong></td>
</tr>
<tr>
<td>Below average</td>
</tr>
<tr>
<td>Above average</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
Process
At the beginning of the term the publisher of the books that were used in the English language classrooms introduced how the web-based homework was performed. Teachers logged in the web page and listed the names of the students. For each student, the system gave a passcode and these passcodes were given to the students and the process how to log into the system was described. When the passcode was logged in on the related web page, the system directed the students to the web-based homework page and the students were able to see which test to be completed. As the teachers set a deadline, students were able to complete the tests that were unlocked by the teacher. Students could not access the tests those were unlocked by the teacher because of the deadline for completing them and/ or the topics that were not studied in the classroom environment.

Following the completion of each unit in the classroom, students were asked to complete their cyber homework page. The questions were similar to the ones that they had practiced at school. Each unit consisted of grammar, listening and reading comprehension questions according to their level. For this study, data were collected from the completed parts of the book, that is, the Starter Test/ Entry Test / Unit 1A-B / Unit 2A-B / 3 A-B.

Data Analysis
The results below show the results of 201 students who accessed the system. At the beginning of the study there were 213 students, who logged in the system, but twelve of the students did not take the first exam for some reasons and their scores are not added to the analysis. Therefore, in order to get reliable results for this study, the statistical results of those students are excluded from the analysis. All results were graded in percent scores and average scores were calculated. Cyber homework results were listed according to the completion of the students and these results were entered into the SPSS programme for statistical analyses. While the results were being entered into the system, students who completed the exercises were introduced the SPSS system as 3, partially completed were as 2 and who did nothing were as 1. Addition to that, a t-test was performed to explore the benefits of web-based homework.

FINDINGS AND DISCUSSION

The results of the study are given according to the research questions to provide an insight. The first research question intends to inquire the rate of participation of these students cyber homework by using this software program. At the beginning all students had an Entry Test to warm up and remember what they had learned before. Following this, 5th grades had a Starter Test but the other grades did not have a Starter Test and continued to their study with the first unit. Except for the Entry Test, all other tests were divided into two parts, A and B. In the statistical data the results are given in detail and it is clear to see which student completed the test or partially completed or did not complete at all. To answer this question, the data were printed out and analysed below. These results show the attitudes of the students towards cyber-homework in general and test by test.

Table 3: Achievements of the Students of the Entry Test

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not done</td>
<td>68</td>
<td>33,8</td>
</tr>
<tr>
<td>Partially done</td>
<td>21</td>
<td>10,4</td>
</tr>
<tr>
<td>Done</td>
<td>112</td>
<td>55,7</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100,0</td>
</tr>
</tbody>
</table>

This table shows the achievements of the students for Entry Test in total. As it is a new implementation to their studies, Entry Test was completed by more than half of the group. Addition to that, this study was given at the beginning of the first term and therefore students did not have much homework to complete other than this. The higher participation rates may be assessed as an indication of the enthusiasm of the students and provided a signal that they might continue that way.
Table 4: The Achievements of the Students of Unit 1 A and B

<table>
<thead>
<tr>
<th>UNIT 1 A</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,00</td>
<td>94</td>
<td>46,8</td>
<td>46,8</td>
<td>46,8</td>
</tr>
<tr>
<td>2,00</td>
<td>10</td>
<td>5,0</td>
<td>5,0</td>
<td>51,7</td>
</tr>
<tr>
<td>3,00</td>
<td>97</td>
<td>48,3</td>
<td>48,3</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT 1 B</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,00</td>
<td>112</td>
<td>55,7</td>
<td>55,7</td>
<td>55,7</td>
</tr>
<tr>
<td>2,00</td>
<td>13</td>
<td>6,5</td>
<td>6,5</td>
<td>62,2</td>
</tr>
<tr>
<td>3,00</td>
<td>76</td>
<td>37,8</td>
<td>37,8</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

When the results of Unit 1 A/B are examined, it is obvious that the number of the students who completed the tests decreased gradually. The reason for that decrease might stem from either students lost their enthusiasm when compared to the Entry Test or they had much homework to do that they did not show interest to the following tests. In contrast, some of the students completed the cyber-homework regularly.

Table 5: Achievements of the Students of Unit 2 A and B

<table>
<thead>
<tr>
<th>UNIT 2 A</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,00</td>
<td>112</td>
<td>55,7</td>
<td>55,7</td>
<td>55,7</td>
</tr>
<tr>
<td>2,00</td>
<td>8</td>
<td>4,0</td>
<td>4,0</td>
<td>59,7</td>
</tr>
<tr>
<td>3,00</td>
<td>81</td>
<td>40,3</td>
<td>40,3</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT 2 B</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,00</td>
<td>115</td>
<td>57,2</td>
<td>57,2</td>
<td>57,2</td>
</tr>
<tr>
<td>2,00</td>
<td>10</td>
<td>5,0</td>
<td>5,0</td>
<td>62,2</td>
</tr>
<tr>
<td>3,00</td>
<td>76</td>
<td>37,8</td>
<td>37,8</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

Similar results are observed for Unit 2 A and B. The number of the students who did not complete the tests increased, but less than half of the group still continued to work on the cyber-homework. After the results of unit 2 A and B were received, the opinions of the teachers were gathered about the results which were decreasing. They stated that the students had to focus on some central tests and had a heavy load in terms of homework which retained them to complete these tests.
Table 6: Achievements of the Students for Unit 3 A and B

<table>
<thead>
<tr>
<th>UNIT 3 A</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,00</td>
<td>108</td>
<td>53,7</td>
<td>53,7</td>
<td>53,7</td>
</tr>
<tr>
<td>2,00</td>
<td>25</td>
<td>12,4</td>
<td>12,4</td>
<td>66,2</td>
</tr>
<tr>
<td>3,00</td>
<td>68</td>
<td>33,8</td>
<td>33,8</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>201</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT 3 B</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,00</td>
<td>116</td>
<td>57,7</td>
<td>61,4</td>
<td>61,4</td>
</tr>
<tr>
<td>2,00</td>
<td>18</td>
<td>9,0</td>
<td>9,5</td>
<td>70,9</td>
</tr>
<tr>
<td>3,00</td>
<td>55</td>
<td>27,4</td>
<td>29,1</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>94,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

| Missing  |           |         |               |                    |
| System   | 12        | 6,0     |               |                    |
| Total    | 124       | 100,0   |               |                    |

As the process continued as it is shown in Table 5 that only some (for Unit 3 A, 33.8% and for Unit 3 B, 27%) of the students showed interest to cyber-homework. Majority (57.7%) of the students did not even log into the system. In the table Unit 3 B there are some missing students. These students were not obliged to complete this test at the time that data were gathered. The class was just a little behind the program. When the statistical data were collected, the teacher had not moved onto that topic, therefore the information of this group is shown as missing here.

Another research question is to find out whether this cyber-homework increased students’ success in English and this environment was beneficial for the students to improve their success in English.

Table 7: Comparison of Proficiency Test Scores and First Exam Scores

<table>
<thead>
<tr>
<th>Class_Y</th>
<th>PT_Level</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Df</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,00</td>
<td>Below average</td>
<td>26</td>
<td>74,69</td>
<td>17,49690</td>
<td>62</td>
<td>-4,734</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Above average</td>
<td>38</td>
<td>89,81</td>
<td>7,56184</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6,00</td>
<td>Below average</td>
<td>24</td>
<td>77,83</td>
<td>11,75351</td>
<td>56</td>
<td>-1,802</td>
<td>.077</td>
</tr>
<tr>
<td></td>
<td>Above average</td>
<td>34</td>
<td>83,35</td>
<td>11,29999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7,00</td>
<td>Below average</td>
<td>36</td>
<td>60,55</td>
<td>16,22598</td>
<td>77</td>
<td>-9,193</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Above average</td>
<td>43</td>
<td>87,16</td>
<td>9,02887</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P<0.05

After completing the first three units in the classroom and assigning students with cybe-homework after each unit, a test was carried out. This test had already been planned for the annual school year program. Before the test, for a week students had an opportunity to revise all the topics that they had studied until then with their teachers in the classroom. After the test, the exam results are logged into the system and a t-test was conducted to compare the proficiency test levels (Table 2) of the students. The aim was to find out to examine the process whether there was a significant progress on the students’ level of English and whether the cyber-homework contributed to their success in English. According to the results of t-test, there was a significant difference between their proficiency test levels and first annual test especially for the 5th and 7th grade students. Addition to that, the students who were above average in proficiency test in the beginning of the term continued their success.
Table 8: Total Achievements of the Students According to Their Accesses to the System

<table>
<thead>
<tr>
<th>Levels</th>
<th>5TH GRADES</th>
<th>6TH GRADES</th>
<th>7TH GRADES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>DONE</td>
<td>73</td>
<td>72</td>
<td>45</td>
</tr>
<tr>
<td>PARTIALLY DONE</td>
<td>8</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>NOT DONE</td>
<td>87</td>
<td>69</td>
<td>82</td>
</tr>
</tbody>
</table>

Final research question of this study is to explore whether this participation differentiated according to students’ language level. Although the students were reminded several times a week about their web-based homework and the necessity of completing it, only some of them completed the cyber-homework. Unfortunately, the results were below the expectation. When the classes are analyzed one by one, it is obvious that students mostly in A B level classes had more attempts to log in and do the tests as they were assigned. As in table 8 all tests, that is, Entry test, Starter A&B, Unit 1 A&B, Unit 2 A&B and Unit 3 A&B were completed by the students especially in As and Bs of all grades. These results might indicate that higher English level of the students made them more enthusiastic about studying that foreign language and therefore they had more attempts than the students with lower level of English.

RESULTS AND SUGGESTIONS

The use of technology in classroom environment has been popular and when the related literature is researched, it is obvious that the implementation of technology is beneficial for students. The results of this study show that only 39% of the students showed interest to cyber-homework while 52% did not. On the other hand, looking at the first annual test results, it is clear that students who completed their homework on web continued their success in English. Furthermore, when the English levels of the students are taken into consideration, it is apparent that the students in above average classes (A&B) showed more interest to cyber-homework than the students in below average classes (C&D).

Researchers who are interested in web-based homework can conduct their studies with a larger population and can analyse the statistical data related to whole school year unlike this study which focused only the first three units of the book and the first annual test in the school year. Moreover, as in the literature review, researchers also may conduct update studies on comparing web-based homework and paper-pen homework and analyse the perceptions of the students.

In this study students were not graded for their performance on cyber-homework. To increase the participation of the students to cyber-homework, teachers may grade the performances and this may stimulate the students towards cyber-homework.

Use of technology in the classroom motivates students and contributes to their learning. Policy makers and school administrators should integrate the use of technology in the classroom and improve the conditions for better learning. These kinds of softwares should be adapted to each school for the students to catch up with the era and to make better learning environments to increase the motivation of the students.

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REFERENCES


VIEWS AND KNOWLEDGE OF PRESERVICE SCIENCE TEACHERS
ABOUT NUCLEAR POWER PLANTS

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ABSTRACT
The world is facing with problems having three aspects which are energy, economy and environment. These problems are generally controversial. In recent years Turkey also encounters such a controversial issue and decision making on this issue seems difficult. The government is planning to construct a nuclear power plant on the south part of Turkey. Nuclear energy is considered as one of the science and technology issues for which there is a debate between specialists and public. Therefore in this study, we investigated the views and knowledge of preservice science teachers about nuclear power plant using a quantitative method. The instruments were developed by the researcher and both had a good internal consistency. The results showed that preservice science teachers had negative views about construction of nuclear power plant and were knowledgeable at a moderate level.

Key Words: Views on nuclear power plant, preservice science teacher, knowledge about nuclear power plant.

INTRODUCTION
The world is facing with problems having three aspects which are energy, economy and environment and the basic concern is to solve the problems through balancing these aspects (Powell, Robinson, Pankratius, & Pankratius, 1994). When someone struggle to find solution to one of these problems, another problem evokes. This makes the problems controversial and problems turns to an issue. Controversial social issues are called as socioscientific issues and they are not easy to solve (Sadler, Barab, & Scott, 2007). In recent years, Turkey also encounters such a controversial issue and decision making on this issue seems difficult. The government tries to find alternative ways to meet the increasing energy demand. For that purpose, three nuclear power plants construction is on the agenda of the government. Actually, while we were penning this document, Turkey launched the construction of first nuclear power plant in Mersin-Akkuyu. Some argue that it should be constructed while others reject its construction. Some people and organizations focus on the effects of nuclear power plants on environment and living organisms while some people and the government considers the benefits of nuclear power plants on energy demand and economy. As a result of this, people take different positions on nuclear power plant construction. To take a decision on this issue requires time and effort in addition to the required skills for decision making. Social studies educators reported that dealing with controversial issues is particularly a significant problem (Shillenn, 1981). Pouliot (2008) also stated that the study of such controversial issues “will prompt young people to familiarize themselves with science in action, to develop their capacity for evaluating the information made available to them on a daily basis, to make decisions concerning controversial sociotechnical issues, and to take part in debates and discussions on sociotechnical controversies of concern to them” (p. 545). Based on these skills and their positions, individuals can make a decision on controversial issues. The position a person takes usually depends on his views about nuclear energy. Views about nuclear power plant in Turkey clearly become very important because energy demand, economic independence, and intuition to protect environment are fighting against each other.
Nuclear Energy
The history of nuclear studies goes back to the last decade of nineteenth century through nuclear physics studies. Raymond LeRoy (2001) states that the modern era of nuclear physics emerge by the following studies; ionization of a gas by means of electric discharge by Crookes in 1879, discovery of penetrating X-rays from a discharge tube by Roentgen in 1895, discovery of Gama-rays from the element uranium which exhibited the phenomenon of radioactivity by Becquerel in 1896, identification of electron as the charged particle of atom responsible for electricity by Thomson in 1897, and the isolation of radioactive element radium by Curies in 1898. Under laboratory conditions, first nuclear reaction occurred in University of Chicago in 1942 (Pekoz, 2006). Pekoz stated that first nuclear reactors emerged due to the cold wars between USA and Soviet Union. Experimental Breeder Reactor 1 was the first experimental plant constructed in Idaho-USA. It was the first to produce electrical energy from nuclear energy in 1951. The first civilian nuclear-based electrical energy production was accomplished in the Soviet Union in 1954.

Based on International Atomic Energy Agency data, as of 2015, there are 443 operational nuclear reactors in the world with a further 66 under construction. With 99 nuclear power plants, the USA utilizes from nuclear energy most by producing 19.47 % of its total electricity. France was the second country having 58 nuclear power plants and meeting 76.93 % of the electrical energy production (IAEA, 2015). Table 1 gives the number of nuclear power plants worldwide (IAEA, 2015).

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Reactor</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States of America</td>
<td>99</td>
</tr>
<tr>
<td>France</td>
<td>58</td>
</tr>
<tr>
<td>Japan</td>
<td>48</td>
</tr>
<tr>
<td>Russia</td>
<td>34</td>
</tr>
<tr>
<td>China</td>
<td>27</td>
</tr>
<tr>
<td>Korea, Republic of</td>
<td>24</td>
</tr>
<tr>
<td>India</td>
<td>21</td>
</tr>
<tr>
<td>Canada</td>
<td>19</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>16</td>
</tr>
<tr>
<td>Ukraine</td>
<td>15</td>
</tr>
<tr>
<td>Sweden</td>
<td>10</td>
</tr>
<tr>
<td>Germany</td>
<td>9</td>
</tr>
<tr>
<td>Belgium</td>
<td>7</td>
</tr>
<tr>
<td>Spain</td>
<td>7</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>6</td>
</tr>
<tr>
<td>Switzerland</td>
<td>5</td>
</tr>
<tr>
<td>Finland</td>
<td>4</td>
</tr>
<tr>
<td>Hungary</td>
<td>4</td>
</tr>
<tr>
<td>Slovakia</td>
<td>4</td>
</tr>
<tr>
<td>Argentina</td>
<td>3</td>
</tr>
<tr>
<td>Pakistan</td>
<td>3</td>
</tr>
<tr>
<td>Brazil</td>
<td>2</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2</td>
</tr>
<tr>
<td>Mexico</td>
<td>2</td>
</tr>
<tr>
<td>Romania</td>
<td>2</td>
</tr>
<tr>
<td>South Africa</td>
<td>2</td>
</tr>
<tr>
<td>Armenia</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 2 gives the major nuclear reactor accidents across country. Chernobyl nuclear reactor accident was the most known one since its detrimental effects still continues.

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td>Canada—Chalk River</td>
</tr>
<tr>
<td>1957</td>
<td>Soviet Union—Mayak or Kyshtym nuclear complex</td>
</tr>
<tr>
<td>1961</td>
<td>U.S.—Idaho Falls</td>
</tr>
<tr>
<td>1979</td>
<td>U.S.—Three Mile Island</td>
</tr>
<tr>
<td>1986</td>
<td>Ukraine—Chernobyl</td>
</tr>
<tr>
<td>1995</td>
<td>Japan—Monju</td>
</tr>
<tr>
<td>2011</td>
<td>Japan—Fukushima</td>
</tr>
</tbody>
</table>

Even these accidents had detrimental effects; countries insist on constructing nuclear power plants. Turkey is one of those countries which attempt to construct nuclear power plants. Nowadays in Turkey, there is an effort for the construction of nuclear power plant by government. But the nuclear power plant initiatives in Turkey are not new. There have been lots of attempt through our near past. The chronological attempts of nuclear energy in Turkey are as follows:

- In 1955, Turkey signed an agreement with the USA to cooperate with the “peaceful uses of nuclear energy.”
- In 1956 the Turkish Atomic Energy Commission (TAEK) was established.
- In 1960, the Kucukcekmece power plant put into frame.
- In 1974, the government developed a nuclear power project for Mersin Akkuyu.
- In 1976, the plan of Akkuyu project was chosen for a power plant construction again.
- In 1983, the government took the Akkuyu project in the agenda again.
- In 1986, the Chernobyl accident occurred.
- In 1987, nuclear energy department was closed down after Chernobyl accident.
- In 1993 Akkuyu Nuclear Plant project was published again in the official newspaper and were included in the investment program of the government.
- In 2000 Prime Minister announced nuclear energy plans waived because of being expensive.
- In 2006, the city of Sinop was selected as Turkey’s first nuclear power plant site.
- In 2010, Turkey and Russia signed agreement for Akkuyu Nuclear Power Plant (CNNTurk, 2010; Ntvmsnbc, 2009; Pekoz, 2006; Yenisafak, 2010).

Especially within last ten years, the debate on nuclear power plant proliferated due to more serious and concrete steps of government toward nuclear energy. In the past environmentalist and the government debates was dominant but now in addition to these organizations other governmental and non-governmental organization including politicians, newspapers, magazines, and TVs included in the debate. One side advocates that Turkey will have energy shortage in near future and imported oil and natural gas will not be sufficient to meet the energy demand. Moreover the supporters of nuclear energy argued that although the operation of nuclear reactors demonstrated as “victim”; developed countries use this energy in every field of life such as medicine, research, and industry. In addition to these arguments, nuclear energy was suggested as the only option for issues such as sustainable development and global warming. Although solar energy, and wind energy is presented to be more effective than nuclear energy in terms of sustainable development and global warming, huge areas should be allocated for solar panels to meet the energy need of a country having almost 78 million individuals. Also, the efficiency of wind and solar energy depends on air conditions.
As oppose to these, environmental organizations emphasized that nuclear power plant should be abolished in a country that has unsolved waste problem, back and risky technology, 25% energy lost, lacking of energy policy considering environmental problems. The opponents of nuclear energy refers to the minor and major nuclear accidents and radiation leakages in countries including the United States, United Kingdom, Japan, and Russia, resulting in serious consequences such as cancer, congenital anomalies and even deaths. More importantly, the effects of nuclear accidents last for decades and can reach hundreds of kilometers away. Nuclear power plants are not totally free from accidents due to structural reasons. Moreover nuclear power plants produce hundreds of tons of highly radioactive waste during their operations and this waste emits radiation for thousands of years. Unfortunately it is not found a safe way to store radioactive wastes without emitting radiation.

METHODOLOGY

Research Problem
In this paper, preservice science teachers’ views and knowledge about nuclear power plant were investigated by means of collecting data through two different instruments. More specifically the following research questions guided this study.
1. What are the views of preservice science teachers concerning the construction of nuclear power plant in Mersin?
2. To what extents are preservice science teachers knowledgeable about nuclear power plants?

Participants and Data Collection
In this study, a quantitative research method was used to establish the views and knowledge of preservice science teachers concerning the construction of nuclear power plants. Convenient sampling was used. The sample included 33 preservice science teachers enrolled in elementary science teacher education program in one of the well-known universities in Ankara. Twenty-six of them were female and remaining 7 of them were male. The demographic information of the participants is given in Table 3.

Table 3: Demographic description of the sample

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>26</td>
<td>78.8</td>
</tr>
<tr>
<td>Male</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td><strong>Having Environment Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27</td>
<td>81.8</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>18.2</td>
</tr>
<tr>
<td><strong>Follow environmental publication, broadcast etc.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>Rarely</td>
<td>2</td>
<td>6.1</td>
</tr>
<tr>
<td>Sometimes</td>
<td>11</td>
<td>33.3</td>
</tr>
<tr>
<td>Usually</td>
<td>19</td>
<td>57.6</td>
</tr>
<tr>
<td>Always-way</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>To be a member of any environmental organization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>27.3</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>82.7</td>
</tr>
<tr>
<td><strong>The number of participation in environmental activities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>12</td>
<td>36.4</td>
</tr>
<tr>
<td>1-2 times</td>
<td>10</td>
<td>30.3</td>
</tr>
<tr>
<td>3-4 times</td>
<td>5</td>
<td>15.2</td>
</tr>
<tr>
<td>5 and more</td>
<td>6</td>
<td>18.2</td>
</tr>
</tbody>
</table>

In this paper, two instruments were developed by the researcher. In developing the instrument, the information given in the news, media, reports of governmental and non-governmental organizations and articles were collected. A total of 22 items were included in the first instrument which measured participants’ views about nuclear power plants. The second instrument included 14 items which measured participants’
knowledge about nuclear power plants. The first instrument was a 5 point-Likert type instrument in which 1 refers to strongly disagree, 2 refers to disagree, 3 refers to undecided, 4 refers to agree and 5 refers to strongly agree. Second one is 3 point knowledge scale in which 1 refers to yes, 2 refers to no, and 3 refers to not sure. Both instruments were administered to 33 participants. In light of the results of the reliability analysis, both of them have good internal consistency with a Cronbach Alpha coefficient of .93 and .87 respectively. The instruments were given in Table 4 and 5.

RESULTS

The data was examined, it was found that preservice science teachers hold negative views about the construction of nuclear power plant in general. In the same vein, it is not interesting that the highest mean score obtained in question 11 with a mean score 4.36. The item was “Instead of nuclear power plant, the renewable (wind, solar) energy sources should be considered in Mersin”. It is clear that PSTs prefer use of renewable energy sources to meet energy need.

Table 4: The Mean Scores of Items of Views about Nuclear Power Plant

<table>
<thead>
<tr>
<th>Items on Views about Nuclear Power Plants Instrument</th>
<th>Mean Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear power plant which will be constructed in Mersin can lead to social problems.</td>
<td>4.09</td>
</tr>
<tr>
<td>Nuclear power plant which will be constructed in Mersin region may lead to public health problems.</td>
<td>4.21</td>
</tr>
<tr>
<td>Nuclear power plant which will be constructed in Mersin can damage the natural beauty.</td>
<td>4.15</td>
</tr>
<tr>
<td>Nuclear power plant which will be constructed in Mersin may damage the surrounding green areas.</td>
<td>4.03</td>
</tr>
<tr>
<td>Nuclear power plant which will be constructed in Mersin will provide job opportunities for the local public.</td>
<td>3.24</td>
</tr>
<tr>
<td>Nuclear power plant which will be constructed in Mersin may damage species of plants in the surrounding environment.</td>
<td>4.12</td>
</tr>
<tr>
<td>Nuclear power plant which will be constructed in Mersin may result in visual pollution.</td>
<td>3.90</td>
</tr>
<tr>
<td>Nuclear waste may be a problem in Mersin.</td>
<td>3.90</td>
</tr>
<tr>
<td>Nuclear power plant can make Mersin open to terrorist attacks.</td>
<td>3.90</td>
</tr>
<tr>
<td>Instead of nuclear power plant, the renewable (wind, solar) energy sources should be considered in Mersin.</td>
<td>4.36</td>
</tr>
<tr>
<td>We should not stay away from nuclear energy.</td>
<td>2.93</td>
</tr>
<tr>
<td>Nuclear power plant should be established as soon as possible to solve future energy problems.</td>
<td>2.48</td>
</tr>
<tr>
<td>Nuclear power plants should be supported due to production of cheap energy.</td>
<td>2.60</td>
</tr>
<tr>
<td>Nuclear power plants should be constructed because energy gives direction to politics among countries.</td>
<td>2.60</td>
</tr>
<tr>
<td>Energy is among the indicators of being a developed country so nuclear power plant should be constructed in Mersin.</td>
<td>2.30</td>
</tr>
<tr>
<td>Energy is required for research and development facilities so nuclear power plant is necessary in Turkey.</td>
<td>2.67</td>
</tr>
<tr>
<td>I am not interested in nuclear power plant which will be constructed in Mersin.</td>
<td>1.88</td>
</tr>
<tr>
<td>The nuclear accidents in the past make me worried about nuclear power plant.</td>
<td>3.66</td>
</tr>
<tr>
<td>The connection between nuclear power plants and nuclear weapons makes me worried about nuclear power plants.</td>
<td>3.45</td>
</tr>
<tr>
<td>The ambiguity in the nuclear waste management in future makes me worried about nuclear power plant.</td>
<td>4.30</td>
</tr>
<tr>
<td>The fact that the effects of nuclear power plants are transferred to the next generations makes me worried about nuclear power plants.</td>
<td>4.33</td>
</tr>
</tbody>
</table>
Next, question 22 got the second highest mean ($M = 4.33$). Apparently, PSTs are afraid of the consequences of a nuclear accident because devastating effects of nuclear disaster transferred from generation to generation. Indeed, in question 21, participants also reported that they are anxious about the mystery of nuclear waste for future (with a mean of 4.30).

In question 18, participants were asked whether they are deaf to nuclear power plant construction in Mersin or not. The lowest mean score were obtained in this question as 1.88. This demonstrates that the PSTs are not insensitive on the issue. The item “Energy is among the indicators of being a developed country, so nuclear power plant should be constructed in Mersin” had the second lowest score among participant. The mean score of this item was 2.30. It can be inferred that PSTs are doubtful about the nuclear energy to be an indicator of development. Correspondingly, the item “Nuclear power plant should be established as soon as possible to solve future energy problems” got 2.48 mean score from the participants of the study. This item can be interpreted in two ways; PSTs do not either believe in energy shortages in Turkey, or they are against nuclear power plant construction. Perhaps they both do not believe in energy shortages, and they are against nuclear power plant construction. Whatever the real reason, they do not want a nuclear power plant in Mersin–Akkuyu. To sum up, it can be concluded that the PSTs have negative views about nuclear power plant construction in Akkuyu.

The summary of knowledge test is shown in Table 5. In general their knowledge was good in terms of nuclear power plant and nuclear energy. In question 5 and 6, they were asked “Nuclear power plants are expensive to deconstruct” and “It is difficult to store nuclear waste” respectively. All the participants answered these two questions correctly. They seemed to be aware of the economic burden of removing nuclear power plants. Similarly, it is not strange to know about storage difficulty of nuclear waste because most of the time it is mentioned in news and magazines. The two items which are; “Nuclear power plants are expensive to build” and “Chernobyl disaster was the result of human error” had the second highest correct answer from the participants.

Table 5: The Frequency of Participants’ Answer on Knowledge Test

<table>
<thead>
<tr>
<th>Knowledge of Nuclear Power Plant Test</th>
<th>True (freq.)</th>
<th>False (freq.)</th>
<th>Not sure (freq.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the same amount used, nuclear fuel gives more energy as compared to the other sources (coal, oil, etc.).</td>
<td>30*</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Nuclear power plants are expensive to build.</td>
<td>32*</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>When the unit price increases, the consumers pay more for nuclear energy as compared to other energy sources.</td>
<td>6*</td>
<td>10*</td>
<td>17</td>
</tr>
<tr>
<td>Nuclear power plants do not have a lifetime.</td>
<td>1</td>
<td>31*</td>
<td>1</td>
</tr>
<tr>
<td>Nuclear power plants are expensive to deconstruct.</td>
<td>33*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>It is difficult to store nuclear waste.</td>
<td>33*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nuclear power plants requires expertise.</td>
<td>30*</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>It is quick to build nuclear power plants.</td>
<td>0</td>
<td>26*</td>
<td>7</td>
</tr>
<tr>
<td>Nuclear power plants release the most amount of carbon dioxide to the environment.</td>
<td>3</td>
<td>27*</td>
<td>3</td>
</tr>
<tr>
<td>10. Nuclear power plants significantly reduce the energy shortage.</td>
<td>26*</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>11. Nuclear power plants are one of the solutions to global warming.</td>
<td>22*</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>12. Natural sources account for most of the radiation we all receive each year.</td>
<td>13*</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>13. In terms of science and technology, less developed countries than us have already nuclear power plants (e.g. Pakistan)</td>
<td>29*</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>14. Chernobyl disaster was the result of human error.</td>
<td>32*</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

* Represents the true answer of the questions.

PSTs know less about the reflection of unit price increase on the economy. Only 10 of 33 participants answered the question 3 correctly. This result also is not surprising because in Turkey, few know about the prices of
energy sources and authorities seldom inform citizens about the pricing of such sources. It is really interesting that the amount of radiation emitted by nuclear power plants are less than the amount of radiation we are exposed to in nature. In the study the PSTs knew less about this issue as well and just 13 of 33 participants answered it correctly.

CONCLUSION AND RECOMMENDATIONS

Nuclear energy is considered as one of the socioscientific issues (SSI) for which there is a debate among specialists and public and a lot of research was carried out to reveal factors that influence public acceptance of nuclear energy (Komiya, Torii, Fujii, & Hayashizaki, 2008). This study was conducted with preservice science teachers to explore their views and knowledge about nuclear power plant. PSTs’ views and knowledge about a socioscientific issue (nuclear power plants in this study) is not only important for their personal decisions but also for their profession as a teacher since they will teach such topics in their future classrooms. They can assist their students to develop scientific literacy and to be a scientifically literate individual. Their students may be the future politicians, businessman, engineers who have to make decisions. PSTs engagement with SSI during their teacher education programs may provide them with necessary knowledge and skills to integrate SSI into science education. Therefore, they may help their students to gain necessary knowledge and skills to make informed decisions on science related societal issues. SSI has provided a new image for science education focusing on the students’ involvement in real-life social problems based on science (Sadler & Fowler, 2006). When the science is isolated from socioscientific issues, students do not develop necessary skills and practices and gain necessary knowledge to use in response to the real life problems including social dilemmas (Sadler & Zeidler, 2005). As being a member of a society, they will ultimately encounter with such conflict issues at a point in time. Therefore SSI movement in school science is an opportunity to practice skills and knowledge to resolve real life problems. The integration of socioscientific issues into science education was discussed by researchers because it is vital in terms of the development of good citizens who are aware of scientific knowledge (Driver, Newton, & Osborne, 2000; Kolstø, 2001). With the international reforms in science education, Turkey also acknowledged recent reform movements in the current science and technology curriculum. The vision of science and technology curriculum was stated to educate all students as scientifically literate individuals without considering the individual differences (MoNE, 2013). The new curriculum proposed that scientific literacy has seven aspects one of which emphasizes the relation between science, technology, society, and environment. One of the characteristics of scientifically literate individuals was stated as being able to relate science, technology, and society and to use the knowledge, understanding, and skills gained in solving problems and making decisions. In 2013, the national science and technology curriculum has undergone several revisions to integrate socioscientific issues into the science education. One of the goals of science education was stated as “to develop habits of mind through the use of socioscientific issues” (MoNE, 2013). In order to develop habits of mind such as acquiring skepticism, maintaining open-mindedness, evoking critical thinking, recognizing multiple forms of inquiry, searching for data-driven knowledge (Zeidler, Sadler, Simmons, & Howes, 2005), students should participate in socioscientific reasoning and decision making process. Therefore the classroom activities should be designed to achieve this goal. In order to use SSI in parallel with the goals of science education, science teachers should also have the necessary knowledge. Therefore this study has value in preservice science teacher education.

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TRANSLATION AS A LEARNING STRATEGY OF TURKISH EFL LEARNERS

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ABSTRACT

Translation has been suggested as a way of language teaching that addresses the need to clarify the inevitable role of translation in language learning. The present study attempted to have an understanding of the translation use by Turkish adult learners of English, specifically, in gaining English skills (i.e. reading, listening, writing, speaking) and in learning lexical items. The study also aimed to find out if the use of translation in these areas shows any variances according to proficiency levels of the learners. It was conducted with 118 students studying at three different proficiency levels in English preparatory school of a state university in Turkey. Data for the present study were collected in the fall term of the 2013-2014 academic year through the Inventory for Translation as a Learning Strategy (ILTS) (Liao, 2002). The findings were discussed in relation to the results of prior studies and practical suggestions on the use of translation were provided.

Key Words: Translation, learning strategy, language learning.

INTRODUCTION

Translation in teaching and learning is the heritage of the Grammar-Translation Method (GTM) developed many centuries ago. In the GTM, students’ native language is the medium of instruction and they are expected to gain translation skills good enough to be able to analyze the grammar rules of the target language made available to them through literary texts (Richards & Rogers, 2001). The failure of the GTM in providing learners with the ability to use the target language resulted in the emergence of the language teaching methods abandoning translation such as Direct Method, Audiolingual Method. Similarly, the Communicative Language Teaching (CLT), emphasizing the importance of communication as the aim of teaching, supports the idea that translation should not be included in foreign language teaching process. This approach to teaching has been integrated into curriculum in many countries including Turkey (1997 curriculum innovation) and in Turkey, in spite of this integration, many teachers still resort translation in their teaching environments (Kırkgöz, 2008). It is also recruited in English preparatory schools of higher education institutions in Turkey (Coskun, 2011).

In teaching perspective, many studies found that translation had positive effect on foreign language teaching (Hummel, 2010; Kim, 2011; Laufer & Girsoi, 2008; Moritomo & Loewen, 2007; Ramachandran & Rahim, 2004) and in learners’ perspective, Naiman, Froanlich, Stern and Toedesco (1978, as cited in O’Malley & Chamot, 1990) described translation as one of the learning strategies employed by good language learners. Considering its role in teaching from both perspectives, translation use should be analyzed in detail, especially from learners’ point of view to answer the question of why, how and for which students practitioners should give a room for translation in their teaching. Thus, the present study aims to get a deeper insight into translation as a learning strategy.
LITERATURE REVIEW

Previous research having investigated the role of translation in second language learning approached translation use from two different perspectives. Some of them examined the effect of translation use by comparing it to other instructional methods (Hummel, 2010; Kim, 2011; Lauffer & Girsoi, 2008; Moritomo & Loewen, 2007; Ramachandran & Rahim, 2004), while some others focused on second language (L2) learners’ perceptions on first language (L1) incorporation in teaching of different language skills (Brooks-Lewis, 2009; Calis & Dikilitas, 2012; Karimian & Talebinejad, 2013; Liao, 2006).

The effect of translation as a learning strategy

The use of translation as a learning strategy in teaching environments has been a research target for many studies to understand if it is beneficial compared to other teaching methods. One of them, comparing translation with a non-translation method, Ramachandran and Rahim (2004) investigated the effectiveness of translation in teaching vocabulary to 60 Malaysian elementary level ESL learners. The students were randomly assigned to one experimental and one control group. While the experimental group received translation method as the treatment, the control group received non-translation method. The findings of the study revealed that the translation method had a positive impact on learners’ recall and retention of the meanings of the target words. In other words, the study evidently showed that translation method was an effective way to improve ESL learners’ vocabulary learning ability.

In another comparison study, Moritomo and Loewen (2007) focused on the possible link between L2 vocabulary teaching and image-schema-based instruction. The study attempted to find out if there was a difference between image schema-based instruction (ISBI) and translation-based instruction (TBI) on acquisition of L2 polysemous words. A total of 58 Japanese high school learners of English in three different classes participated in the study. Two classes were used as treatment groups, one ISBI and the other receiving TBI. The remaining class was control group and they received no instruction on the target vocabulary items. In the treatment groups, 20 minutes were allocated for the instruction on the target words: the verb break and the preposition over. The effects of these two types of instruction were measured by learners’ performance on a vocabulary acceptability judgment test and vocabulary production test that were used as pre-tests, post-tests and delayed post-tests. The analysis of the tests showed that ISBI and TBI outperformed the control group and the study revealed some evidence that explicit instruction resulted in learners’ use of L2 polysemous words in a more accurate way.

Combining translation with another teaching point, Lauffer and Girsoi (2008) focused on the translation effect on vocabulary learning. The researchers investigated the effect of explicit contrastive analysis and translation activities on the acquisition of ten single L2 words and ten collocations by 10th graders. They compared three high school groups of learners, 75 learners in total, having the same L1 and comparable L2 proficiency. One of the groups received meaning focused instruction (MFI), while one received non-contrastive form-focused instruction (FFI) and the other received contrastive analysis and translation (CAT). The MFI group was asked to perform content-oriented tasks which did not require the students to pay attention to the target items, the students in FFI group performed text-based vocabulary tasks in which they need to focus on the target items while the CAT group was assigned text-based translation tasks in which they did translations in both directions (L2-L1 and L1-L2). After completing the tasks and a week later, the three groups were tested on the retention of the target words by active recall and passive recall tests. The CAT group performed significantly better than the other two groups, MFI and FFI, on all the tests. The findings of this research suggest that there should be a place for contrastive analysis and translation activities in foreign language teaching.

Translation as a learning strategy from learners’ perspective

Translation has also been investigated in terms of learners’ view on it. Focusing on the role of translation in a different language skill, Kim (2011) combined 20 students’ previous learning experiences that they gained through GTM with her writing classes. She aimed to help her students see their own writing objectively in this way. Her students were Korean learners of English and placed in a low-level class after a placement test. They were asked to translate their writings into Korean and reflect what they felt and learnt as a result of this task.
The second task she asked her students to do was to translate one of their friends’ writing and write reflections on that task accordingly. The analysis of the reflections revealed that the students benefited from these tasks in analyzing their writing more objectively and understood that grammatical accuracy was important for written communication. The study shows one clear and efficient way of incorporating students’ L1 into language teaching.

Focusing on learners’ perceptions on translation as a learning strategy, Liao (2006) aimed to explore the role of translation in learning English by collecting data from survey questionnaires and interviews. The results showed that in addition to their conflicting beliefs about translation, most of the 351 Taiwanese learners of English believed that translation played a positive role in their English learning experiences. The participants showed a medium to high level use of translation as a learning strategy. Their beliefs about translation were found to affect the translation strategies they chose to use in learning English. The researcher also came up with the result that the students having foreign language majors and high proficiency level reported negative beliefs about translation and less use of translation.

Along the same line, Brooks-Lewis (2009) conducted a classroom-based research in an English as a Foreign Language (EFL) course which included L1 use with university students who were native speakers of Spanish. After the completion of the course, the participants were asked for their perceptions about their experience in written form. Results demonstrated learners’ positive response to the experience; they considered that the inclusion of their L1 was beneficial to their language learning experience. The reasons for the participants who were in favor of using L1 in their classrooms were explained:

“...being able to understand what is being said; being able to participate; making the learning meaningful and easier; dissolving the sense of rupture in knowledge, along with ideas of forgetting or replacing identity or the L1; promoting confidence and a sense of achievement; and inspiring language, learning, culture, and self-awareness.” (Brook-Lewis, 2009:234)

Calis and Dikilitas (2012) analyzed elementary learners’ reaction to the use of translation as a L2 learning practice. It was a classroom-based research lasted for seven weeks and conducted with 28 Turkish learners of English in a preparatory school. The participants were taught some grammatical subjects through the translation exercises. Following these exercises, the participants were asked for their perceptions of this learning experience through a questionnaire together with interview questions adapted from Liao (2002). Results showed that learners, in general, had positive ideas about the use of translation as a practice. Additionally, they believed that the use of translation helps them understand reading passages better and memorize target vocabulary. The students also reported that they themselves use bilingual dictionaries frequently and translate the text first to understand it.

Employing the same qualitative and quantitative data collection instruments, Karimian and Talebinejad (2013) investigated Iranian English learners’ use of translation. In the quantitative part of the study, 170 Iranian EFL learners were asked to answer the Inventory for Translation as a Learning Strategy (ITLS) and in the qualitative part, 120 students were selected to respond the learners’ interview guide (Liao, 2002). The data analysis revealed that language learners used translation in a wide variety of learning strategies to comprehend and use English effectively.

Review of literature on translation suggests that translation as a learning strategy has been suggested as an effective tool for the learners to use and also the learners have been reported to state that they hold positive beliefs about it. However, the use of translation as a learning strategy by learners having different language proficiency has not been much investigated. To fill in this gap in the literature, the research in the present study sets out to have a better understanding of translation as learning strategy used by Turkish EFL learners by addressing the following research questions:

1. What kinds of learning strategies involving translation do Turkish EFL learners use?
2. Does the use of translation by Turkish EFL learners to enhance language skills (reading, writing, listening and speaking) differ according to proficiency level?
3. Does the use of translation by Turkish EFL learners to learn English forms and structures (vocabulary, idiom, phrases, and grammar) differ according to proficiency level?

**METHODOLOGY**

**Participants**
The participants in the present study were 118 Turkish EFL learners studying in a preparatory school of a state university, which were chosen through convenient sampling. As shown in Table 1, the ages of 52 male and 66 female students range between 18 and 20 and they were in three proficiency classes, elementary (N=35), pre-intermediate (N=37) and intermediate (N=46). All three level students have both native and non-native teachers. They were taught English through the coursebooks presenting language skills in an integrated way.

Table 1: Demographic Information

<table>
<thead>
<tr>
<th>Level</th>
<th>Number</th>
<th>Age (Mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>35</td>
<td>F: 16 M: 19</td>
</tr>
<tr>
<td>Pre-intermediate</td>
<td>37</td>
<td>F:19 M:18</td>
</tr>
<tr>
<td>Intermediate</td>
<td>46</td>
<td>F:32 M:14</td>
</tr>
</tbody>
</table>

Note: F: Female, M: Male

**Data Collection Methods**
For the present study, the Inventory for Translation as a Learning Strategy (ITLS) (Liao, 2002) was administered to the participants. The inventory has 28 items that the participants responded on a Likert Scale of 1 to 5. It consists of five composite variables and two of them (Strategy 1 (S1) - strategies to enhance English skills such as reading, writing, listening and speaking, Strategy 2(S2) - strategies to learn English forms or structures in areas such as vocabulary, idioms, phrases and grammar) were focused separately in this study. The inventory was translated into Turkish to eliminate the language barrier. To ensure that translated version is understandable enough, two EFL teachers pursuing their MA degrees in ELT were asked to examine the translated version. Cronbach Alpha value of the translated version was found as .84, confirming its high reliability.

**Data Analysis Procedures**
The data gathered through the ILTS were analyzed quantitatively using SPSS version 15.0. Descriptive statistics were computed to summarize the participants’ responses to all items to explore the learning strategies involving translation Turkish EFL Learners use. Regarding the use of translation by Turkish EFL learners to enhance language skills, responses to S1 items (items 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 25) and to learn English forms and structures responses to S2 items (items 13, 14, 15 and 16) were examined through one way ANOVA.

**RESULTS**
The present study was conducted to understand the use of translation as learning strategy by Turkish EFL students having different proficiency levels and to investigate whether translation use as a learning strategy differs based on different proficiency levels. The results are presented below under each research question.

**The 1st Research Question**
The first research question of the study was as follows:

*RQ1: What kinds of learning strategies involving translation do Turkish EFL learners use?*
For this research question, the participants were asked to respond 28 items in the ITLS and the means and standard deviations were computed on the answers of the participants. As Table 2 illustrates, out of 28 items, 11 items had the highest means ($M>3.5$), which shows the tendencies of the participants about the use of translation as a learning strategy.

According to Table 2, Turkish EFL learners resort translation when they are reading an English text and writing in English. They reported that they organize their ideas in Turkish, and then translate them into English in a speaking task. To learn words, idioms and phrases in English, they use translation and get help from dictionaries. Additionally, the results of the responses of the participants showed that Turkish learners of English ask other people to do translation when they have problems in comprehension. They also stated that they are interested in translations of Turkish expressions in English.

Table 2: Means and Standard Deviations for ITLS items

<table>
<thead>
<tr>
<th>Item Description</th>
<th>M</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When reading an English text, I first translate it into Turkish in my mind to help me understand its meaning.</td>
<td>3.53</td>
<td>1.19</td>
</tr>
<tr>
<td>2. To write in English, I first brainstorm about the topic in Turkish.</td>
<td>4.05</td>
<td>.92</td>
</tr>
<tr>
<td>5. When I write in English, I first think in Turkish and then translate my ideas into English.</td>
<td>3.92</td>
<td>1.12</td>
</tr>
<tr>
<td>11. When speaking English, I first think of what I want to say in Turkish and then translate it into English.</td>
<td>3.78</td>
<td>1.08</td>
</tr>
<tr>
<td>13. I memorize new English vocabulary words by remembering their Turkish translation.</td>
<td>3.86</td>
<td>1.06</td>
</tr>
<tr>
<td>16. I learn English idioms and phrases by reading their Turkish translation.</td>
<td>3.58</td>
<td>1.14</td>
</tr>
<tr>
<td>17. I use English-Turkish dictionaries to help myself learn English.</td>
<td>4.01</td>
<td>1.00</td>
</tr>
<tr>
<td>18. I use Turkish-English dictionaries to help myself learn English.</td>
<td>4.00</td>
<td>1.07</td>
</tr>
<tr>
<td>19. I use an electronic translation machine to help myself learn English.</td>
<td>3.86</td>
<td>1.18</td>
</tr>
<tr>
<td>20. If I do not understand something in English, I will ask other people to translate it into Turkish for me.</td>
<td>3.62</td>
<td>1.13</td>
</tr>
<tr>
<td>21. I ask questions about how a Turkish expression can be translated into English.</td>
<td>3.52</td>
<td>1.08</td>
</tr>
</tbody>
</table>

The 2nd Research Question

The second research question of the study was as follows:

RQ2: Does the use of translation by Turkish EFL learners to enhance language skills (reading, writing, listening and speaking) differ according to proficiency level?

Table 2: S1 items

<table>
<thead>
<tr>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When reading an English text, I first translate it into Turkish in my mind to help me understand its meaning.</td>
</tr>
<tr>
<td>2. I read Turkish translations in the course reference book to help me better understand English articles in the textbook.</td>
</tr>
<tr>
<td>4. To write in English, I first brainstorm about the topic in Turkish.</td>
</tr>
<tr>
<td>5. When I write in English, I first think in Turkish and then translate my ideas into English.</td>
</tr>
<tr>
<td>6. I write Turkish outlines for my English compositions.</td>
</tr>
<tr>
<td>7. When I listen to English, I first translate the English utterances into Turkish to help me understand the meanings.</td>
</tr>
<tr>
<td>8. I read the Turkish translation scripts before I listen to instructional English tapes or CDs</td>
</tr>
<tr>
<td>9. When I watch English TV or movies, I use Turkish subtitles to check my comprehension.</td>
</tr>
<tr>
<td>10. I listen to or read Turkish news in order to understand English radio/TV news better.</td>
</tr>
<tr>
<td>11. When speaking English, I first think of what I want to say in Turkish and then translate it into English.</td>
</tr>
<tr>
<td>12. If I forget certain English words or expressions in the middle of conversation, I translate from Turkish into English to help me keep the conversation going.</td>
</tr>
<tr>
<td>25. I write Turkish translations in my English textbooks.</td>
</tr>
</tbody>
</table>
S1 items that are presented in Table 3 are defined by Liao (2002) as “strategies to enhance English skills such as reading, writing, listening and speaking”. To answer the second question, the total number of responses to S1 items, one of the composite variables of the ITLS, was examined through one way ANOVA.

Table 4: One way ANOVA results of S1 items

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1799.84</td>
<td>2</td>
<td>899.92</td>
<td>16.77</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6170.02</td>
<td>115</td>
<td>53.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7969.87</td>
<td>117</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As demonstrated in Table 4, there was a significant difference among the proficiency levels of the Turkish adult students in terms of the learning strategies involving translation that they use to enhance language skills (reading, writing, listening and speaking) (p<.05). To find out between which groups there was a significant difference, Scheffe was applied as a post-hoc technique and the result is given in Table 4.

Table 5: Scheffe results of S1 items

<table>
<thead>
<tr>
<th>Groups (i)</th>
<th>Groups (j)</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>elementary</td>
<td>pre-intermediate</td>
<td>-.24</td>
<td>1.73</td>
<td>.990</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>7.88 (*)</td>
<td>1.61</td>
<td>.000</td>
</tr>
<tr>
<td>pre-intermediate</td>
<td>elementary</td>
<td>.24</td>
<td>1.73</td>
<td>.990</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>8.13 (*)</td>
<td>1.64</td>
<td>.000</td>
</tr>
<tr>
<td>intermediate</td>
<td>elementary</td>
<td>-7.88 (*)</td>
<td>1.61</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>pre-intermediate</td>
<td>-8.13 (*)</td>
<td>1.64</td>
<td>.000</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .01 level.

The statistically significant differences were found between the elementary students and the intermediate students in favour of elementary students at p<.05 level and between the pre-intermediate students and the intermediate EFL students in favour of pre-intermediate students at p<.05 level as shown in Table 5. The results showed no significant difference between other groups (p>.05).

**The 3rd Research Question**

The third research question of the study was as follows:

**RQ3:** Does the use of translation by Turkish EFL learners to learn English forms and structures (vocabulary, idiom, phrases, and grammar) differ according to proficiency level?

Table 6: S2 items

<table>
<thead>
<tr>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. I memorize new English vocabulary words by remembering their Turkish translation.</td>
</tr>
<tr>
<td>15. I use Turkish translation of grammatical terms such as parts of speech, tenses, and agreements to help me clarify the roles of the grammatical parts of English sentences.</td>
</tr>
<tr>
<td>16. I learn English idioms and phrases by reading their Turkish translation.</td>
</tr>
</tbody>
</table>

S2 items that are presented in Table 6 are defined by Liao (2002) as “strategies to learn English forms or structures in areas such as vocabulary, idioms, phrases, and grammar”. One way ANOVA were performed on the total number of the responses to S2 items, which is another composite variable in the ILTS, to answer the third question.
Table 7: One way ANOVA results of S2 items

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Groups</strong></td>
<td>172.72</td>
<td>2</td>
<td>86.36</td>
<td>8.35</td>
</tr>
<tr>
<td><strong>Within Groups</strong></td>
<td>1189.10</td>
<td>115</td>
<td>10.34</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1361.83</td>
<td>117</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 7, there was a significant difference among the proficiency levels of the Turkish EFL learners in terms of the use of translation to learn English forms and structures (p<.05). As a post-hoc technique, Scheffe was applied to find out between which groups there was a significant difference and the result is given in Table 7.

Table 8: Scheffe results of S1 items

<table>
<thead>
<tr>
<th>Groups (i)</th>
<th>Groups (j)</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>elementary</td>
<td>pre-intermediate</td>
<td>2.23 (*)</td>
<td>.75</td>
<td>.015</td>
</tr>
<tr>
<td>intermediate</td>
<td></td>
<td>2.80 (*)</td>
<td>.71</td>
<td>.001</td>
</tr>
<tr>
<td>pre-intermediate</td>
<td>elementary</td>
<td>-2.23 (*)</td>
<td>.75</td>
<td>.015</td>
</tr>
<tr>
<td>intermediate</td>
<td></td>
<td>.57</td>
<td>.72</td>
<td>.732</td>
</tr>
<tr>
<td>intermediate</td>
<td>elementary</td>
<td>-2.80 (*)</td>
<td>.71</td>
<td>.001</td>
</tr>
<tr>
<td>intermediate</td>
<td>pre-intermediate</td>
<td>-.57</td>
<td>.72</td>
<td>.732</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level.

As Table 8 illustrates, the statistically significant differences occurred between the elementary students and the pre-intermediate students in favor of elementary students at p<.05 level and also between the elementary students and the intermediate students in support of elementary students at p<.05 level. The results showed no significant difference between other groups (p>.05).

**DISCUSSION & CONCLUSION**

The current study was conducted to explore the use of translation by Turkish EFL learners as a learning strategy and whether those learning strategies differ according to the proficiency levels of the learners, i.e. elementary, pre-intermediate, and intermediate. The results indicated that Turkish EFL learners use translation when they are reading an English text, which supports the arguments of Kern (1994) and Calis and Dikilitas (2012). It was also found out that the students use translation when writing in English, which contradicts with the findings of Kobayashi and Rinnert (1992) and Huang and Tzeng (2000) who stated that participating students mostly preferred directly the target language in their writing.

The participants reported that organize their ideas in Turkish before they translate them to use in an English speaking task. It was also found that they use dictionaries to learn words, idioms and phrases in English. They ask other people for help to translate English sentences they have difficulty with and also they are interested in translations of Turkish expressions into English. This reliance on translation may be because they do not feel comfortable with doing any language task in English, so they do them in their native language, which is easier for them to read, write, organize ideas, form sentences and then employ translation to achieve the outcome of the tasks. Another reason may be that they are not accustomed to doing the tasks directly in English and they still use the strategy that they used in their previous learning experiences. This previous learning experience may be a result of the heavily use of translation by their teachers in English classes.

The results of the second research question that seeks to find out if the learning strategies involving translation the Turkish EFL learners use to enhance English skills differ according to their proficiency levels showed that the elementary students employ translation more than the intermediate students and the pre-intermediate students use translation as a learning strategy more than the intermediate students. In other words, the students in the intermediate group use translation for English skills least compared to other proficiency levels,
which is consistent with previous studies (e.g. Liao, 2006). It can be stated depending on this result that the frequency of the use of translation for the acquisition of English skills decreases as the learners gain higher proficiency in English. This may be due to the reason that they get their independence from translation as they get more into the language and thus improve themselves in learning English skills. Also students having lower L2 proficiency level might make use of translation to compensate their lack of knowledge, which might intensify their confidence and feeling of relaxation (Husain, 1996).

The other research question of the study aims to understand whether the use of translation to learn English forms and structures differ according to proficiency levels of the Turkish learners of English and the results showed that the elementary students use translation to learn English words, phrases and structures more than both the pre-intermediate students and the intermediate students. It can be concluded from this result that as the most users of translation to learn English vocabulary, idiom, phrases and grammar, the elementary level EFL learners have a heavy reliance on translation which might be because they are not proficient enough to develop other strategies. This might be due to the potential of translation in encouraging “not only a swift solving of structurally complicity in the second language but also a quick and effective comprehension” (Danchev, 1983, as cited in Karimian & Talebinejad, 2013: 608).

All these results suggest some pedagogical implications that the teachers need to take into account while they are organizing their lessons. Although most teachers have a tendency to reject the inclusion of native language into foreign language classes, the learners still rely on translation to improve themselves in language learning. Keeping this in mind, teachers should give a room for translation in teaching language skills, vocabulary items and sentence structures, especially for elementary learners, rather than totally ignoring the role of mother tongue.

Given the importance of the role of translation in language learning, the present study might be validated with the inclusion of more students from different proficiency levels and from different backgrounds as it was only conducted with 118 students in three different proficiency levels. Interviews with teachers and students may be effective in getting a deeper insight into the use of translation in learning English.

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