The relationship between goal orientation, self-regulation learning strategies and creativity in high school students of Tehran city

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Abstract
The purpose of the present research was study of the relationship between goal orientation, self-regulation learning strategies, and creativity in high school universities of Tehran city. The research method was practical in terms of objective and descriptive-correlational in terms of data collection. The statistical population was 1580 male and female students of Tehran city in 2013-2014 academic years. Using Cochran formula and stratified random sampling, number of 309 individuals was considered as sample size. The measuring instrument of the research was Buford et al purpose orientation questionnaire (1998), Pinterich and Digrot self-regulation learning strategies (1990), and Abedi’s creativity (2004). Using Cronbach’s Alpha, The questionnaires’ reliability for goal orientation questionnaire, learning self-regulation strategies, and creativity was respectively 0.90, 0.83, and 0.75. Content validity was used to test the questionnaire validity and the questionnaire was approved by relevant experts. The analyses of the data from the questionnaires were performed through SPSS software in two parts of descriptive and inferential (Pearson’s correlation coefficient). The research findings proved that there is a positive significant relationship between goal orientation and self-regulation learning strategies. There is significant relationship between goal orientation (learning and performance) and creativity, but there is negative relationship between goal orientations and avoiding failures with creativity, and there is significant relationship between self-regulation learning strategies (cognitive and metacognitive strategies) with creativity.

Keywords: goal orientation, self-regulation learning strategies, creativity

Introduction
Education teaches how to live, think and balk the right way and raises the inner me of human. One of the basic and considerable factors in provision of educational plans is determination and specification of the goals on which educational system activities are arranged to achieve them. In addition to doing work or task as a common bond, goals may also act as an evaluation criterion (Atayeefar and Shaghaghi, 2010). It’s the goal that determines what the individual should do and how much effort they make. Special goals cause increase of performance and if the goal provision is the problem, whoever accepts it will have a better performance. Finally, feedback of work results will lead to higher performance. Research findings indicate that, in addition to integrated knowledge, educational success requires using an appropriate and adaptable motivational pattern in which the goal orientation is a basic aspect of (Cobb, 2010). Hence, study of motivational factors’ role such as goal orientation and its impact on methods of self-regulation of determination and motivation in educational activities is very important (Tuominen-Soini, Salmela-Aro and Niemivirta, 2011). Pinterich (2000) stated that goals are made of available latent and conscious mental representations which aren’t the same as personality traits, but they are representations sensitive to specific learning situation despite of having relative stability. During recent decades, the goal orientations are separated to learning goal, performance, and failure avoidance orientations (Pinterich, 2000). Based on Bufard et al idea, the students with learning goal orientation insist
on increase of mastering newer subjects and understanding issues (quoted by Daniels et al, 2008). The learners following this type of orientation will be satisfied of learning, only when they achieve fluency and mastery in their assigned homework. They have higher level of self-sufficiency, they consider the homework interesting and stimulating, and they have a positive attitude to learning process (Muis and Edwards, 2009; Tuominen-Soini et al, 2011). In other words, these learners enjoy the learning process and experience a positive feeling during learning and that is why they show more effort and sedulity in learning. They also outshine other learners in applying cognitive and metacognitive strategies (Vanderwalle, 2009). According to results of Kaplan, Middleton, Midgley and Urton (2002) research indicated that the students with the orientation of learning goal have more tendencies to risk compared with students with performance orientation and they also use more deep learning guidelines. Finney et al (2004) concluded in their research that a student with a learning goal orientation has the most possible learning from a course. According to Bufard et al idea, in orientation of performance purpose, the students seek to compare their skills with others and they also care about what others would think about them. They try to act intelligent not incompetent. Therefore, they would avoid challenging tasks and show less perseverance dealing with difficult tasks. A purpose of these students is to outrun others and achieve success with little attempt. Failure is intimidating to them, because it’s a proof of individual’s incompetence. According to Harackiewicz et al (1997) and Delavarpur (2008), the correlation between performance orientation and educational progress is positive, but Pinterich and Garcia’s study on students indicated that the students with big goals and low performance have more educational progress and better creativity compared to students with two big purposes. According to Bufard et al, the only purpose of failure avoiding orientation students is to prevent failing, so they make the least attempt on learning process. It’s expected the goal orientation to be related to learning self-regulation strategies used by individuals. According to researches, the type of purpose that individuals choose has relationship with tendency towards using self-regulation patterns (Kaplan et al, 2009). Recent researches (Clercq et al, 2013) indicate that goal orientation increases mastery and deep process of study courses which causes increase of self-regulation itself. On the other hand, type of individual’s goal has relationship with self-protecting strategies (Radosevich et al, 2004), intrinsic motivation and educational self-concept (Elliot and Murayam, 2009). Therefore, one of the most important intrinsic factors easing the path to educational progress is self-regulation. Learners adjust their behavior through self-made stimulus and facilitate the learning process (Talebzade and Nobarian et al, 2011). Learning the self-regulation has been the main focus of researches in educational psychology field (Montalvo and Torres, 2004). Self-regulation is the ability to supervise the performance and responding the feedback so that the optimum performance possibility is at the highest level with satisfying results. Since the 1960s, social and individual psychologists have made several attempts to understand intrapersonal processes that improve the optimum self-regulation (Fitzsimons and Finkel, 2010). According to researches done, self-regulation has relationship with locus of internal control, features of executive performance (Tice et al, 2007), and social factors like comparing their performance with others (Pinkus et al, 2008). Creativity is also one of the variables that have relationship with goal orientation and self-regulation strategies. A prominent feature of mankind is the ability to think and the supreme manifestation of thinking is creative thinking (Babosalam and sheikhol eslam, 2013). Generally, there are two styles of thinking in creativity process. One is associative thinking that connects between different information, but this relationship is not casual, so the solutions in this style are vague. The second style is analytical thinking. In this type of thinking the cause and effect relationship is established between the information. This stage leads to solutions that can compete with existing knowledge (Gabora, 2002). However, in Gabora’s opinion (2010), creativity is not only dependent on these two styles of thinking, but it also requires the individuals to cooperate their thinking style with issue requirements and circumstances. Torrance also divides creative thinking into four components. These components are: fluid, innovation, flexibility, and expansion (quoted by Sheikhol eslam and Razavieh, 2005). In
previous researches, we face two types of researches about creativity. One type studies the effective individual factors on creativity like cognitive styles, personality traits, and motivational features; the other type studies the effective environmental factors on creativity like family environment, school environment, and society environment. Comparing the individual and social factors effecting on creativity, it can be said that the individual factors are more important, because individuals are the ultimate source of new ideas. However, affecting creativity, individual factors are closely related to environmental factors. In fact, environmental factors effect on ways of expressing creative ideas (Babosalam and sheikhol eslami, 2013).

Motivational feature can be pointed out among effective individual factors on creativity. According to Amabile (1996), there are three components affecting every creative performance: skills related to field, skills related to creativity, and task motivation. Skills related to field are: talent, knowledge and technical expertise in the field. Skills related to creativity include executive styles, appropriate cognitive styles, and intuitive knowledge to create a new effect. Task motivation refers to intrinsic motivation focused on tasks, so the person is stimulated to use the skills related to field and also skills related to creativity in order to make creative ideas (Coelho and Sousa, 2001). Accordingly, without needed motivation, there is no use of commitment, effort and perseverance necessary to make creative achievements. Two of the newest approaches in motivation field are goal orientation and self-regulation. In fact, these variables are the most effective theories in motivation field and they have important allusions to education (Pinterich and Shank, 2002). In his research about the relationship between goal orientation and creativity, Pierre (2007) concluded that the students who enjoy goal orientation have more creativity mastery. He believes that creativity is facilitated in classes that students are allowed to choose their assignments. According to results of Herst et al (2009), Coelho and Sousa (2001), there is positive relationship between learning goal orientation and creativity in individuals. Based on basic role of motivation in making creative achievements, especially intrinsic motivation, and considering different effect of kinds of goal orientations on individuals’ performance in various progressive situations, a relationship is expected between goal orientations and students’ creativity. Therefore, since increase of educational standards in society individuals is a national need, it seems necessary to identify common goal setting patterns in every society, and also to study their relationship with standards, then considering individual differences, take action to change and higher the standards and even change individuals’ goal orientation if it’s necessary. Learning the self-regulation is another effective component in improvement of educational standards level of society member, and applying it regularly causes individuals” tendency to gain more learning goals. Raising students self-regulated helps them to increase their self-efficiency and creativity, and finally individuals would be more effective in society. Moreover, the educative purposes not only approach them to humanity, but also give them the ability to improve the community towards development. At the end, the importance and necessity of the present research can be summarized in the following. According to researches, the students with clear goal orientation, and especially learning goal orientation, and with self-regulation and creativity have more cognitive and metacognitive strategies and more creativity. They can learn more coordinated and they are also more successful in understanding realities and gaining self-esteem. Therefore, this research seeks to study the relationship between goal orientations, learning self-regulation strategies, and creativity in high school students of Tehran city. In order to investigate this purpose, the following hypotheses were proposed:

- There is a relationship between goal orientations with learning self-regulation strategies in high school students of Tehran city.
- There is a relationship between learning self-regulation strategies with creativity in high school students of Tehran city.
- There is a relationship between goal orientations with creativity in high school students of Tehran city.
Methodology

Research method, statistical population and sample size: The research method was practical in terms of objective and descriptive-correlational in terms of data collection. Data collection in this research was quantitative. In this regard, questionnaires distributed to get the opinions and then the results were inserted. The statistical population in this research was high school students (about 1580 people) of Tehran district 20 who were enrolled in 2014 academic year. Sample selection method in this study was stratified random sampling. 309 individuals were chosen based on Cochran formula (175 females and 134 males).

Three questionnaires of goal orientation, learning self-regulation strategies, and creativity were collection tools in this study. In order to evaluate goal orientation, Bufard et al (1998) questionnaire was used which had 21 questions. The minimum score of subjects was 21 and the maximum was 105. Bufard et al (1998) Reported reliability coefficients in Cronbach’s Alphas for learning orientation subscale, performance orientation, and failure avoidance orientation were respectively 0.88, 0.75, and 0.75. In this research, in order to evaluate the learning self-regulation orientation, Pinterich and Digrot (1990) questionnaire of self-regulation learning was used which had 22 questions in two categories: 1. Cognitive strategies dimension and 2. Metacognition.

Cognitive strategies included 13 questions and also metacognition included 9 questions. The minimum and maximum scores of subjects were 22 and 110 respectively. In order to determine the reliability of the test, Cronbach’s Alpha was used, and the calculated Alphas for cognitive and metacognitive strategies were 0.83 and 0.74 respectively.

Abedi’s creativity questionnaire: the questionnaire includes 60 questions that measure four components of creativity. Abedi studied the validity of this test through Cronbach’s Alpha. According to the report, the coefficients obtained for the four components of fluid (16 questions), innovation (22 questions), flexibility (11 questions), and expansion (11 questions) were 0.75, 0.67, 0.61, and 0.61 respectively. Using confirmatory factor analysis method, he proved that the test had an acceptable concurrent validity. Using test-retest method, the validity of the test was reported 0.69, 0.48, 0.53, and 0.58 respectively for fluid, flexibility, innovation, and expansion. In the questionnaire, each question had three choices that had scores of 1 to 3 in sequence. The first item represents the lowest score (low creativity) and the third item represents the highest score (high creativity). Total obtained scores of the 4 subscales indicate the total creativity score of individual. The total score amplitude of creativity for each subject is 60-180 (Peyvaste Gar et al., 2010). The validity of the questionnaires in this research was obtained larger than 0.7 using Cronbach’s Alpha. The content validity was used for validity test of questionnaires and the questionnaires were approved by relevant experts. Data analysis of the questionnaires was performed by SPSS software in two parts of descriptive (average, variance, and standard deviation) and inferential (Pearson’s correlation coefficient).
Findings

In this section, data distribution normality of the research is studied through Kolmogrov-smirnov test before examining the research hypotheses. As indicated in Table 1, the normality of the research dimensions is given including self-regulation strategies, creativity, and components of each dimension.

Table 1: results of Kolmogrov-smirnov test for research dimensions and components of dimension

<table>
<thead>
<tr>
<th>variables</th>
<th>Test statistic</th>
<th>Level of significance</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal orientation</td>
<td>0.0696</td>
<td>0.071</td>
<td>309</td>
</tr>
<tr>
<td>Learning orientation</td>
<td>0.091</td>
<td>0.280</td>
<td>309</td>
</tr>
<tr>
<td>Performance orientation</td>
<td>0.092</td>
<td>0.390</td>
<td>309</td>
</tr>
<tr>
<td>Failure avoidance</td>
<td>0.0811</td>
<td>0.527</td>
<td>309</td>
</tr>
<tr>
<td>Self-regulation strategies</td>
<td>1.186</td>
<td>0.120</td>
<td>309</td>
</tr>
<tr>
<td>Cognitive strategies</td>
<td>1.347</td>
<td>0.053</td>
<td>309</td>
</tr>
<tr>
<td>Metacognition dimension</td>
<td>1.321</td>
<td>0.061</td>
<td>309</td>
</tr>
<tr>
<td>creativity</td>
<td>1.253</td>
<td>0.087</td>
<td>309</td>
</tr>
<tr>
<td>Fluid</td>
<td>0.772</td>
<td>0.590</td>
<td>309</td>
</tr>
<tr>
<td>innovation</td>
<td>1.142</td>
<td>0.147</td>
<td>309</td>
</tr>
<tr>
<td>flexibility</td>
<td>1.246</td>
<td>0.090</td>
<td>309</td>
</tr>
<tr>
<td>expansion</td>
<td>1.047</td>
<td>0.223</td>
<td>309</td>
</tr>
</tbody>
</table>

Based on the information above (K-S test results), the significance level for all the variables is larger than 0.05. In other words, the data due to all the dimensions and variables of the research are normally distributed.

Hypotheses test

As mentioned before, the data distribution for all the components is normal. Therefore, Pearson’s correlation test is used for each three hypotheses in order to study the relationship between two variables.

Hypothesis 1: there is relationship between goal orientations with learning self-regulation strategies in high school students of Tehran city.

Table 2 indicates the results of correlation test for the first hypothesis.

Table 2: correlation matrix for the variables of goal orientation and self-regulation strategies

<table>
<thead>
<tr>
<th>variables</th>
<th>Goal orientation</th>
<th>Self-regulation strategies</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal orientation</td>
<td>1</td>
<td>0.449</td>
<td>0.000</td>
</tr>
<tr>
<td>Self-regulation strategies</td>
<td>0.449</td>
<td>1</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Since the significance level in correlation matrix is less than error rate (0.01), therefore, it can be said that there is significant relationship between goal orientations with Self-regulation strategies at 99% level of confidence, and the correlation coefficient is 0.449. In addition, the positive sign of the correlation coefficient in the table above indicates the positive relationship between the two variables.

Hypothesis 2: there is relationship between learning self-regulation strategies with creativity in high school students of Tehran city.
Table 3 indicates the results of correlation test for the second hypothesis.

Table 3: correlation between the variables of learning self-regulation strategies and creativity (sample size is 309)

<table>
<thead>
<tr>
<th>variables</th>
<th>creativity</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-regulation strategies</td>
<td>0.557</td>
<td>0.007</td>
</tr>
<tr>
<td>Cognitive strategies</td>
<td>0.534</td>
<td>0.003</td>
</tr>
<tr>
<td>Metacognition dimension</td>
<td>0.581</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Since the significance level for Self-regulation strategies dimension, cognitive strategies variables, and Metacognition dimension is less than error rate (0.01) in the correlation table, therefore, in high school students of Tehran city, it can be said that there is significant relationship between Self-regulation strategies dimension, cognitive strategies variables, and Metacognition dimension with creativity at 99% level of confidence, and the correlation coefficient is respectively 0.557, 0.534, and 0.581. In addition, the positive sign of the correlation coefficient for the three components in the table above indicates the positive relationship between these components and the students' creativity.

Hypothesis 3: there is relationship between goal orientations with creativity in high school students of Tehran city.

Table 4 indicates the results of correlation test for the third hypothesis

Table 4: correlation between variables of learning self-regulation strategies and creativity (sample size is 309)

<table>
<thead>
<tr>
<th>variables</th>
<th>creativity</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal orientation</td>
<td>0.612</td>
<td>0.006</td>
</tr>
<tr>
<td>Learning orientation</td>
<td>0.566</td>
<td>0.008</td>
</tr>
<tr>
<td>Performance orientation</td>
<td>0.618</td>
<td>0.006</td>
</tr>
<tr>
<td>Failure avoidance</td>
<td>-0.476</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Since the significance level for goal orientation dimension, learning orientation variables, performance orientation, and failure avoidance is less than error rate (0.01) in the correlation table, therefore, in high school students of Tehran city, it can be said that there is significant relationship between goal orientation dimension, learning orientation variables, performance orientation, and failure avoidance with creativity at 99% level of confidence, and the correlation coefficient is respectively 0.612, 0.566, 0.618, and -0.476. In addition, the positive sign of the correlation coefficient for the three components of goal orientation, learning orientation, and performance orientation in the table above indicates the positive relationship between these components and the students' creativity and also the negative sign of correlation coefficient in failure avoidance component indicates the negative relationship between this component and the students' creativity.

**Conclusion**

The purpose of this research was to study the relationship between goal orientations, learning self-regulation orientation and creativity in university students of Tehran city. Generally, the findings due to correlation coefficients indicate a significant relationship between kinds of goal orientation with learning self-regulation orientation and creativity. In other words, the type purpose an individual chooses has relationship with overall score of learning self-regulation and creativity.

The research results indicated the positive relationship between goal orientation and learning self-regulation strategies. This result is consistent with research results of Pinterich and Digrot (1990), Zimmerman (2000), and Mccaslin and Hickey (2001). Expressing this result, Blocher (1997) states that self-regulated students are very interested in learning and they are
also goal-oriented. May be one reason of this result is that students’ values and personal beliefs can affect their goals and also their self-regulated learning consequently.

The other result of the research indicated that strategies of self-regulated learning cause creativity increase in students. This result is consistent with research results of Amini (2009), Pari et al (2006), Mousavi nezhad (1988), and Niazi et al (2008). Expressing this result, Mousavi nezhad (1988) concluded in his research that self-regulated students are involved further in academic topics, learning exercises, deep perception, understanding subjects, and learning attempts which cause their creativity increase.

The other result of the research indicated that goal orientation (learning and performance) causes the creativity increase of the students, but goal orientation of failure avoidance causes decrease of creativity. Ames and Archer (1998) stated that learning goal orientation creates motivational pattern in individual which leads to long-term learning with higher quality.

Kaplan et al (2002) stated that the students with learning goal orientation take more risk and take more advantage of deep learning strategies. In their research, Harackiewicz et al (1997) concluded that avoidance of performance orientation in individuals has relationship with inconsistent progress implications. On the other hand, Pinterich and Garcia (1991) reported the negative correlation between goal orientations of performance and creativity. They expressed the result that the students with high learning goals and low performance obtained more creativity comparing to the students with both high goals. Research results of Herst et al (2009), Coelho and Sousa (2011) also indicated the positive relationship between learning goal orientations and creativity in individuals. Considering the basic role of motivation, especially internal motivation in creating creative achievements and considering different effects of goal orientations on individuals’ performance in various progressive situations, the relationship between students’ goal orientations and creativity is expected.

Therefore, in order to adjust and favor the learning environment and make more effective goal orientation and creativity, managers can provide the students with facilities like comfortable, regular, and physically suitable classes, equipped laboratories, well-resourced libraries, facilities for educational affairs, and scientific visits. Teachers are also impressive on increase of learning goal orientation, self-regulation, and creativity of students. In this field, goal orientation increase can make a situation to motivate students such as doing practical activities, laboratory activities, research activities, and group activities in educational environment. Teachers can expand the activities that raise self-regulation and creativity in students For example, making appropriate class environment for learning better, designing appropriate assignments, using new and impressive educational methods, teaching self-regulated activities, exploiting learning strategies based on students’ abilities and talents, and encouraging students.

Therefore, in this study due to time and facility limitations of the researcher, a larger sample selection wasn’t possible. Controlling some of the variables like economic-social situation of families, educational and training facilities, evaluation lack of mental-emotional situation of subjects when responding to the questions wasn’t possible that could affect the research results. In correlation type researches, comparing to experimental and quasi-experimental methods, it’s not specifically possible to determine the casual relationships between variables. In this research, variables like study of subjects’ genders, educational grades, and intelligence weren’t investigated, and we hope that other researchers study them.

References