On the mediatory role of achievement goals between class structure perception and cognitive engagement of Iranian first-grade stat-run high school students: a study in Ilam province

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Abstract

The present study seeks to survey the mediatory role of achievement goals between class structure perception and cognitive engagement of the first-grade students at all state-run high schools of Ilam province in Western Iran. The subjects were composed of 288 male and 288 female students selected through the Multistage Cluster Random Sampling. The variables employed were the indices of class mastery structure, class avoidance structure, mastery goals, performance-approach goals, performance-avoidance goals, self-regulation, deep processing strategies, along with surface processing strategies. The validity and the reliability of the methods administered were reported to be right and proper. The statistical method implemented in the study was "the structure modeling equation" conducted by LISREL8.51 software. The obtained results revealed that the only meaningless path is the direct path of performance-approach goals towards deep processing strategies; in contrast, other direct and indirect paths stand meaningful. Additionally, considering the present coherence among variables and improving the goodness of fitting indices, the LISREL8.51 program suggested adding the paths of mastery structure to self-regulation, self-regulation to deep and surface processing strategies, as well as removing the ways of mastery goals from the deep processing strategies. Accordingly, after removing the considered ways and adding the proposed ones, the method of fitting the corrected model was examined. As a result, the majority of fitting indices implied the complete accordance between the revised model and the data.

Keywords: mastery structure, performance structure, avoidance structure, mastery goals, performance-approach goals, performance-avoidance goals, self-regulation, deep processing strategies, surface processing strategies, structure modeling equation;

Introduction

Our cognition of the environment and people around is considered as a key factor very effective to have harmony with the social world. In this way, an individual reacts to the environment based on their cognition and experience. Therefore, behaviour is the result of one’s cognition as well as one’s acts or reacts in accordance with the way they understand and explain reality. No one reacts to mere and absolute reality, but reacts to perception of the environment which is special and individualistic.

School as a social institute is a part of society which has a special atmosphere and its own special characteristics. In addition, a class as a part of this institute has different dimensions which make up the class environment. Each student enters this society with specific personality traits, culture, social background, family and economic situation,
and specific abilities and talents. Each teacher, as well, has these particular characteristics and each class has its own specific physical characteristics, equipment and specific goals. All of these characteristics and their harmony make up the class environment. In this respect, class syllabus, teaching methods, school goals and the ones by Education Ministry in addition to society and parents’ expectations have effects on the class environment. Therefore, with regard to the key role of educational surroundings, educational experts must create educational environments so that they can improve students' achievements and motives.

**Statement of the Problem**

Among different procedures, cognitive-social achievement goals procedure has absorbed researchers’ and theoreticians’ attentions in which goals and setting goals play key roles (Ames & Archer, 1988, p. 260). Achievement goals theories instead of considering the destination which students’ improvements are to go toward, take into account the students’ recognition of why he or she is trying to improve. In addition, theoreticians believe that goal orientation should not be regarded equal with behavioral goals. Special goals are indeed special results an individual is to reach for, but goal orientation explains the motive which is followed after arriving at that destination and it also explains the standards of self-assessment. Thus it is possible that a unique goal have different directions. Besides, in contrast with special goals which are based on individual similarities, goal orientation is based on differences, accordingly the rate of individual success can be predicted (Dweck & Leggett, 1988). Generally the term goal in this procedure means purpose or focus on active recognition for following homework. It is usually done by different methods of willingness and answering success-based activities.

One of the research methods which attracted experts’ attentions is the analysis of environmental effects on goal orientation and the analysis of goal oriented effects on students’ learning strategies. According to Elliot, McGregor and Gable (1999); goal orientations are categorized into mastery goals and performance goals, and the latter are divided into performance-approach goals and performance-avoidance goals. In many researches (e.g. Dupeyrat & Marine, 2004; Reine, Craway, Tucker & Hall, 2003), it is pointed out that the types of goal orientations of students do not have any direct effect on educational results and consequences, but the effects of these variables are mediated via other variables. In this way, mastery goals have a direct relationship with more attempt and persistence, using deep processing strategies such as meaning expansion, organizing information, and insistence in doing homework. Deep processing strategies also have direct effects on academic achievement and success (Harackiewicz & Linnenbrink, 2005). In addition, studies which used scientific methods for clarification of relationships between different cognitive and motivation variables have shown that using deep processing strategies mediate the relationship between mastery goals and academic achievement among high school students (Pintrich & Garcia, 1991; Green & Miller, 1996).

Results of linear studies as well on the role of self-regulation strategies have shown that mastery goals are good predictors for self-regulation, high-level cognitive strategies, help-demanding, and skills of time managing and tasks value. These variables have a direct relationship with academic achievements and performance (Pintrich & DeGroot, 1990; Wolters, Yu & Pintrich, 1996). In other words, the relationship between mastery goals and academic achievement can be clarified through mediator variables, self-regulation, deep processing strategies, tasks value, asking help from peers and persistence in tasks. Findings of many researchers and scholars (e.g. Elliot, McGregor, 2001; Vermetten, Lodewijks & Vermunt, 2001; Dupeyrat & Marine, 2004; Coutinho & Neuman, 2008) have demonstrated that goal orientation of performance-approach goals and performance-avoidance goals have a positive relation with surface processing strategies but there is not any meaningful relations between these orientations with deep processing strategies and self-regulation (Wolters, 2004; Dupeyrat & Marine, 2004; Coutinho & Neuman, 2008). In other aspects, according to Anderman and Maehr’s model (1994), it can be stated that school’s focus on special kind of goals structures affects students’ acceptance of goal orientations and personal beliefs and students’ kind of orientation and personal beliefs as well have an impact on their emotional and behavioural outcomes.

Many studies and researches have presented the evidence that psychological atmosphere of the class plays a key role in students’ goal orientation. In other words, in classes with mastery goals structure, students tend to mastery goals, but in classes with performance goal structure, students are inclined to select performance goals (Anderman & Maehr, 1994). There are a lot of evidence that indicate a positive relationship between performance goal structure and performance education goals and their correspondent cognitive motivational processes. There is a positive link between mastery goals structures and mastery educational goals and their correspondent cognitive motivational processes (Maehr & Midgley, 1991). Experimentally, using learning strategies (Ames & Archer, 1988), high self-efficacy (Midgley, Anderman & Hicks, 1995; Roeser, Midgley & Urden, 1996) and having personal mastery goals
are with mastery perceptual structures, but performance perceptual structures are with some undesirable consequences such as cheating (Anderman, Griesinger & Westerfield, 1998), negative effects (Kaplan & Midgley, 1999; Anderman, 1999), performance orientations or extra-individual ones (Urdan, 2004; Wolters, 2004) and other behavioural problems (Kaplan & Maehr, 1999; Roeser & Eccles, 1998).

The current study is to shed light on performance and class mastery structures as well as the avoidance structure. It is obvious that the relationship between the two variables would vary in presence of other variables. Therefore, it is useful to consider other variables. As a result, the main purpose of this paper is to analyze mediatory role of achievement goals between class structure perception and cognitive engagement of students in a causal model to guide us to better understanding of goal orientation and the factors which are affected by it. By reviewing the literature, the suggested model is as follows (see Figure 1):

![Figure 1](image_url)

**Figure 1.** The hypothesised model of the mediatory role of achievement goals between class structure recognition and cognitive engagement

**Purpose of the Study**

The main purpose of this study is to analyse mediatory role of achievement goals between class structure perception and cognitive engagement of students using structural equation analysis method. Determining the direct and the indirect relationships of goal orientations and class structure with cognitive engagement of students are considered as other goals of this study.

**Research Hypothesis**

With respect to the suggested model, these hypotheses can be suggested:

1. There is a relationship between class mastery structure and mastery goal orientation.
2. There is a relationship between class performance structure and performance-approach goal orientation.
3. There is a relationship between class orientation structure and avoidance-performance goal orientation.
4. There is a relationship between mastery goal orientation and self-regulation.
5. There is a relationship between mastery goal orientation and deep processing strategies.
6. There is a relationship between performance-approach goal orientation and deep processing strategies.
7. There is a relationship between performance-approach goal orientation and surface processing strategies.
8. There is a relationship between avoidance-performance goal orientation and surface processing strategies.

**Research Method**

In this section, the subjects, the selection method, along with the used tools and the research plan of the suggested model of structural equations are discussed.
The Statistical Community, Subjects and the Sampling Method
Subjects of this study are composed of all male and female (no. 3707) first-grade students of state-run high schools in Ilam, in Western Iran in 2007-2008, who were studying in 13 boy’s high schools and 18 girls’ high schools.

The sampling method in this research is Multi-stage Cluster Random Sampling which comes in two stages. The first stage sampling is for the primary study and the second stage sampling for the main study. To select the testing sample, two high schools (one boys’ high school and one girls’ high school) were randomly selected. Then the two classes from each high school and 25 students from each class were selected. In this step, 100 questionnaires were handed in to students out of which 5 were answered incomplete and were removed from the primary sampling, and the testing sample decreased to 95 students (50 girls and 45 boys). Then, because nine variables should be analyzed in the model, according to common research correlation sampling where for each variable between 15 to 40 subjects should be considered, in this study there were 32 subjects for each variables. There were 579 students, 288 girls and 288 boys, in the main sample of the study. Sampling method was in such a way that among 18 girls' high schools 8 high schools and among 13 boys’ high schools 6 high schools were randomly selected. Then 12 classes from boys’ high schools and 12 classes from girls’ high schools were randomly separated. 24 students were randomly separated from each class, too. 12 questionnaires from all questionnaires were not answered completely (8 belonging to boys and 4 to girls). Therefore, by omitting incomplete questionnaires for the second stage, the main samples were decreased to 564 subjects (284 girls and 280 boys).

Research Tools
Most of this study’s tools were adapted from patterns of adaptive learning scales by Midgley et al (2000). This collection has been made during several years and each time new scales have been added to it. This collection includes 26 scales relating to students’ comprehension, family characteristics, teachers and neighbours. In this study 6 of them which are related to variables were used. Additionally, in this study, self-regulation, deep processing strategies and surface processing strategies by Miller et al (1996) were employed. All of these scales were analyzed through a primary study and unsuitable questions were omitted based on student's opinions. The direction of the questions of all of the scales was positive and students specified their answers by ranking questions in 4 degree Likert scale. In such a way that 4 stands for complete agreement and 1 for complete objection. To analyse scales’ reliability and validity, Cronbach alpha method and confirmatory factor analysis were used, respectively.

Perception of Classroom Mastery Structure
Classroom mastery structure introduces students’ perception of the class structure which shows that students’ goals of doing homework is to improve competence level and skill. So, the questionnaire includes 6 questions which two out of them were omitted on the account of students’ opinions in the primary study. The number of questions in this scale decreased to 4. Cronbach alpha coefficient was 0.60 for all questionnaires in this study. The factorial structure of this tool and its strength in measuring proficiency factor was analyzed using factors' validity. Fit indexes indicated proficiency questionnaires’ measuring model complete conformity with the defined factors for the data.

Perception of Classroom Performance Structure
Doing school or homework assignment is an indication of ability and qualification. This questionnaire includes 3 questions. Cronbach alpha coefficient was 0.74 for this study which proves good reliability of this questionnaire. Additionally, the factorial structure of this tool and its strength in measuring perception of classroom performance structure is investigated using factor validity method. Given indexes indicated good fitting of the obtained pattern in the affirmative factorial analysis with the collected data.

Mastery Goal Orientation
Mastery goals introduce students’ distress toward mastery over subjects and concepts, seeking challenges and learning as a goal. The questionnaire consists of 6 questions out of which one was removed according to students’ opinions in the primary study and the questions decreased to 5. Cronbach alpha coefficient was 0.77 for this questionnaire which shows good constancy of this questionnaire. The factorial structure of this tool and its power in measuring mastery goal orientation factor is inspected using factor validity method. Given indexes indicate good fitting of the pattern in the affirmative factorial analysis with the data gathered.
**Performance-Approach Goal Orientation**

Performance-approach goals indicate students’ distress toward social comparisons, doing better than others and appearing clever, this questionnaire is composed of 5 questions in which one of them is deleted on the basis of students’ opinions in the primary study and the number of questions was decreased to 4. Cronbach alpha coefficient was 0.74 for this questionnaire which demonstrates a good validity of this questionnaire. The factorial structure of this tool and its power in measuring performance-approach goal orientation factor is analysed using the factor validity method. Given indexes denote good fitting of the pattern in the affirmative factorial analysis with the collected data.

**Performance-Avoidance Goal Orientation**

Performance-avoidance goal indicates students’ attempt to avoid appearing unable. This questionnaire has 6 questions in which one of them is omitted in keeping with students’ opinions in the primary study and the number of questions was reduced to 5 ones. Cronbach alpha coefficient was 0.74 for this questionnaire which indicates good constancy of the questionnaire. The factorial structure of this tool and its power in measuring performance-avoidance goal orientation factor is inspected using the factor validity method. Given indexes are a sign of good fitting of the pattern in the affirmative factorial analysis with the collected data.

**Self-Regulation**

This scale includes planning and organizing students’ attempts, goal-choosing and reviewing one’s progress and includes 9 questions. One of the questions is deleted following the students’ opinions in the primary study and the questions were declined to 8. Cronbach alpha coefficient was 0.79 for this questionnaire which indicates good constancy of this questionnaire. The factorial structure of this tool and its power in measuring the self-regulation factor is investigated using the factor validity method. Given indexes indicate a good fitting of the obtained pattern in the affirmative factorial analysis with the collected data.

**Deep-Processing strategies**

This scale is composed of growth, development, and organization dimensions which include 6 questions. One of the questions was crossed out on the basis of students’ opinions in the primary study. Cronbach alpha coefficient was 0.68 for this study which indicates good constancy for it. Its factorial structure and its power in measuring deep-processing strategies’ factor is analysed using the factor validity method. Given indexes point at a good fitting of the obtained pattern in the affirmative factorial analysis with the collected data.

**Surface-Processing Strategies**

This scale has repetition and review directions and contains 4 questions. Cronbach alpha coefficient was 0.73 for this questionnaire which indicates its good constancy. Its factorial structure as well as its power in evaluation of surface-processing strategies factor is analysed using the factor validity method. Given indexes indicate good fitting of the pattern in the affirmative factorial analysis with the collected data.

**The Main Model of the Study**

As this study is designed to analyse the mediatory role of the achievement goals between class structure perception and cognitive engagement of students, there are attempts to investigate the relationship between the variables in a direction diagram by employing structural equation model and using a planned model according to the preceding theoretical principles and the related literature. With regard to this point for analyzing such casual model, advanced statistical model of structural equations which is used in correlation researches is administered in the present study, as well. This study is a correlation one in which structural equations model is adopted to analyse the data.

**The Statistical Model**

The modeling method of the structural equations is used in this paper. Descriptive statistical method (mean, standard deviation, as well as the minimum and maximum of the scores) and perceptive statistics (affirmative factorial analysis) are used. SPSS 16 and LISREL 8.51 software are exercised to analyse the data. It needs to be noted that the meaningfulness of the study's hypotheses are inspected in a 0.05 α level.
Results
Descriptive results will be explained and then the suggested structural equation model will be described. Finally hypotheses of the research are going to be discussed.

Descriptive Findings
Table 1 shows the mean, standard deviation, as well as the minimum and maximum of each questionnaire scores in the whole sample (no. 564 subjects).

<table>
<thead>
<tr>
<th>Indexes Variables</th>
<th>The Number of Subjects</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery structure</td>
<td>564</td>
<td>14.17</td>
<td>1.91</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Performance structure</td>
<td>564</td>
<td>10.36</td>
<td>1.78</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Avoidance structure</td>
<td>564</td>
<td>10.94</td>
<td>3.17</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Mastery goal</td>
<td>564</td>
<td>16.08</td>
<td>2.97</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Performance goal</td>
<td>564</td>
<td>12.91</td>
<td>2.44</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Avoidance goal</td>
<td>564</td>
<td>11.52</td>
<td>3.59</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Self-regulation</td>
<td>564</td>
<td>25.60</td>
<td>3.99</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>Deep processing</td>
<td>564</td>
<td>15.91</td>
<td>2.66</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Surface processing</td>
<td>564</td>
<td>12.62</td>
<td>2.48</td>
<td>4</td>
<td>16</td>
</tr>
</tbody>
</table>

Findings Related to the Hypotheses of the Suggested Structural Equation Model
In this section, findings related to the hypotheses of the suggested structural model will be shown (see Figure 2)

Results of Study’s Hypotheses
The suggested structural equation model of the mediatery role of achievement goals between class structure perception and cognitive engagement of students studying at the first grade of high school in state-run high schools of Ilam is analyzed using LISREL 8.51 software and maximum likelihood method.
Table 2. Good fitting indexes of the suggested model

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$/df</td>
<td>4.66</td>
</tr>
<tr>
<td>P value</td>
<td>0.00</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.081</td>
</tr>
<tr>
<td>GFI</td>
<td>0.76</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.73</td>
</tr>
<tr>
<td>CFI</td>
<td>0.67</td>
</tr>
</tbody>
</table>

According to this Table, $\chi^2$/df is 4.66 with a meaningful level of 0.00. Considering this point that $\chi^2$/df is sensitive to increasing samples and the correlations between variables, therefore in majority of the cases, this index is meaningful. So, for the sake of fitting the model, other indexes are used. In Table 2, it is shown that in the suggested model for all subjects RMSEA is 0.081, GFI is 0.76, AGFI is 0.73 and CFI is 0.67. These indexes show that the model is not fitting well. In order to fit the suggested model, it is necessary to omit meaningful directions. The fitting method of the corrected model in all of the subjects is discussed. Figure 3 shows the results of the fitting of the corrected model.

As it is illustrated in the graph, in the corrected model for all students, the performance-approach goal to deep-processing strategies direction is omitted because it is not meaningful in the fitting model. On the other side, because of progress in good fitting indexes and correlation between variables, LISREL 8.51 suggested adding mastery structure to self-regulation direction, self-regulation to deep-processing strategies and self-regulation to surface-processing directions and omitting mastery goals to deep-processing direction. Table 3 indicates good fitting indexes of the final model.
Table 3. Good fitting indexes of the final model

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$/df</td>
<td>3.29</td>
</tr>
<tr>
<td>P value</td>
<td>0.00</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.05</td>
</tr>
<tr>
<td>GFI</td>
<td>0.93</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.90</td>
</tr>
<tr>
<td>CFI</td>
<td>0.95</td>
</tr>
</tbody>
</table>

According to the results presented in Table 3, except for $\chi^2$/df, which is not meaningful, most of the given scales show complete fitting of the final suggested corrected model in all samples of the subjects. To clarify the meaningfulness of $\chi^2$/df good fitting index, the sensitivity to magnificence of the sample and the correlation in the model can be noted. Because in most of the cases, this index is meaningful, their fitting scales are used to analyse the fitting method of models. According to the Table, 3.29 for $\chi^2$/df proportion, 0.05 for RMSEA, and the coefficient is more than 0.90 for GFI, AGFI and CFI indicate that the gained model has conformity with the observed data. In other words, this model with acceptance of 0.05 error probability can be expanded for the present study’s community and it is preferred to research the suggested model because of the obtained fitting scales. Table 4 confirms measuring the parameters of the variables direct effect on each other.

Table 4. Parameters of the direct effect between the study’s variables in the suggested model

<table>
<thead>
<tr>
<th>parameters</th>
<th>directions</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>Standard error</th>
<th>Critical ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery structure to mastery goal</td>
<td>0.98</td>
<td>0.82</td>
<td>0.67</td>
<td>12.25</td>
<td></td>
</tr>
<tr>
<td>Performance structure to performance goal</td>
<td>0.92</td>
<td>0.73</td>
<td>0.13</td>
<td>13.22</td>
<td></td>
</tr>
<tr>
<td>Avoidance structure to avoidance goal</td>
<td>1.02</td>
<td>0.87</td>
<td>0.30</td>
<td>9.51</td>
<td></td>
</tr>
<tr>
<td>Mastery goal to self-regulation</td>
<td>1.02</td>
<td>0.87</td>
<td>0.18</td>
<td>10.37</td>
<td></td>
</tr>
<tr>
<td>Mastery goal to deep-processing</td>
<td>0.96</td>
<td>0.84</td>
<td>0.38</td>
<td>10.37</td>
<td></td>
</tr>
<tr>
<td>Performance goal to deep-processing</td>
<td>0.14</td>
<td>0.027</td>
<td>0.49</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>Performance goal to surface-processing</td>
<td>0.44</td>
<td>0.31</td>
<td>0.64</td>
<td>5.70</td>
<td></td>
</tr>
<tr>
<td>Avoidance goal to surface-processing</td>
<td>0.26</td>
<td>0.17</td>
<td>0.58</td>
<td>3.22</td>
<td></td>
</tr>
</tbody>
</table>

The first direct hypothesis: there is a relationship between class mastery structure and mastery goals orientations. According to table 4, it is observed that standardized regression weight between these variables is $\beta = 0.82$, the critical ratio equals with 12.25 and is more than 1.96. Therefore, the first hypothesis of the research is confirmed. Students’ recognition of class mastery structure has an effect on choosing mastery goals orientation.

The second direct hypothesis: there is a relationship between class performance structure and performance-approach goal orientation. The results presented in Table 4 show that coefficient of direction between the two variables is $\beta = 0.73$, the critical ratio is 13.22 which is more than 1.96. Therefore, the second hypothesis is confirmed and the class performance structure has an impact on the students’ choice of performance-approach goal orientation.

The third direct hypothesis: there is a relationship between class avoidance structure and avoidance-approach goal orientation. As it is shown in Table 4, the standardized regression weight between variables is $\beta = 0.87$, the critical ration is 9.51 and it is more than 1.96. As a result, the third hypothesis is proved and the class avoidance structure has an effect on the students’ choice of the performance-avoidance goal orientation.
The fourth direct hypothesis: there is a relationship between mastery goal orientation and self-regulation. As Table 4 shows, the direction between the two variables is \( \beta = 0.87 \), the critical ratio is 10.37 and it is more than 1.96. Consequently, the third hypothesis is proved and mastery goal orientation affects students’ use of self-regulation strategies.

The fifth direct hypothesis: there is a relationship between mastery goal orientation and deep-processing strategies. In Table 4, it can be seen that the direction coefficient between these variables is \( \beta = 0.84 \), the critical ratio is 10.37 which is more than 1.96. The fifth hypothesis is accepted. Therefore, mastery goal orientation of students influences their use of deep-processing strategies.

The sixth direct hypothesis: there is a relationship between performance-approach goal orientation and deep-processing strategies. As it is illustrated in Table 4, direction coefficient between these variables is \( \beta = 0.027 \), the critical ratio is 0.67 which is less than 1.96. For that reason, the null hypothesis is not rejected and it is concluded that there is no relationship between performance-approach goal orientation and deep-processing strategies. The sixth hypothesis is rejected.

The seventh direct hypothesis: performance-approach goal orientation has a relationship with surface-processing strategies. Coefficient direction between these variables is \( \beta = 0.31 \) and the critical ratio is 5.70 which is more than 1.96. The seventh hypothesis is accepted. It is concluded that choosing performance-approach goal orientation by students shapes surface-processing strategies.

The eighth direct hypothesis: there is a relationship between avoidance-performance goal orientation and surface-processing strategies. According to the presented results in Table 4, direction coefficient between these variables is \( \beta = 0.17 \) and the critical ratio is 3.22 which is more than 1.96. The eighth hypothesis is confirmed, as a result, and performance-avoidance goal orientation of students has an effect on their use of surface-processing strategies.

Discussion and Conclusions

The main purpose of this paper was to analyze the effects of environmental factors (class structure) and motivational ones (progress goals) on the endeavor recognition (learning strategies) in the light of using structural equation method. Therefore, according to the related literature, a suggested model was introduced. In this study, the suggested model was not fitting completely. Because the direction of performance-approach goal orientation to deep-processing strategies was not meaningful in the suggested model, so it was deleted from the model. On the other side, because of improvements in good fitting scales and correlation between variables, LSREL 8.51 suggested adding the directions of mastery goals to self-regulation, and self-regulation to deep-processing strategies. Finally, after deleting the appointed directions in the primary suggested model and adding the suggested directions, the fitting way of the corrected model is analyzed. As it is illustrated in Table 3, the corrected model is fitted in a correct way.

1. The relationship between class mastery goal structure and mastery goal orientation:

There is a meaningful relationship between mastery goal structure and mastery goal orientation of students. These findings are in agreement with Ames and Archer (1988, p.264), Roeser et al (1996), Miller and Murdock (2007, p.98) and Hajiyakhchali (2001). To clarify these findings, it can be stated that understanding class activities is more important than just memorizing in classes with mastery structure. Mistakes are seen as a part of learning process, and attempts and progress are important and challenging and different assignments are given to students. Therefore, it is predicted that students’ anxieties in affirming their liabilities in comparison with others instead of recognizing assignment would decrease in mastery goal structure. Classes which emphasize recognition, learning and attempts lead to following these goals by students and making mastery goal orientation.

2. The relationship between class performance structure and performance-approach goal orientation:

According to the results in Table 4, it is shown that there is a meaningful and direct relationship between class performance structure and performance-approach goal orientation. These findings correspond with the findings of Ames and Archer (1988, p.264), Andremen and Maehr (1994, p.295), Roeser et al (1996) and Miller and Murdock.
The findings of these studies demonstrate that performance class structures result in classifying students into weak or unintelligent and strong or intelligent. Intelligent students are noticed by teachers while unintelligent ones are ignored. Mistakes are symbols of defeat and disabilities in such class structures. In addition, as teachers frequently compare students’ performances; therefore students compete with each other and spot the point that they are recognized just from comparison of their performance with others. The main anxiety of students here is that how others evaluate their ability, consequently students’ attempts are to show ability and avoid showing disability. With regard to this point that the atmosphere of such classes emphasizes competition, showing high ability and good performance, students follow such goals and choose performance-approach goal orientation.

3. The relationship between class avoidance structure and performance-avoidance goal orientation:

Class avoidance structure has a direct and meaningful relationship with performance-avoidance goal orientation as it is shown in Table 4. These results correspond with the findings of Ames and Archer (1988, p.264), Andremen and Maheer (1994, p.295), Roeser et al (1996) as well as Miller and Murdock (2007, p.98). To illuminate these results, it must be stated that the purpose of doing assignments is to avoid incapability and disqualification, in avoidance structure. Doing assignment is important in these classes and growth, mastery, innovation plus creativity are ignored. Students struggle to do their assignment in every possible way and without any attempt or with a few attempts to get rid of teacher’s pressure, everyone feels incapable in such a situation and explains progress as a threat and if it is possible prefers escaping. As a result, the environment of such classes leads students to choose performance-avoidance goals.

4. The relationship between mastery goal orientation and self-regulation:

There is a direct and meaningful relationship between mastery goal orientation and self-regulation. These results are in agreement with those of Ames and Archer (1988, p.264), Meece, Blumenfeld and Hoyle (1988, p.521), Miller et al (1996, p.401), Middleton and Midgely (1997), Wolters (2004, p.243), Jowkar (1999, p.65), Abdinia (1998) and Hajiyakchchali (2001). To explain these findings, it can be said that self-regulation is the result of mastery goal orientation recognition. Researchers have come to this conclusion that accepting mastery goals by students results in students’ search for self-regulated strategies to gain mastery. Students, who choose mastery goal orientation, show more interest in using planning, observing, goal-choosing and seeking assistance strategies. These students believe that assignments are of significance and attractive as a result they involve in recognition and self-regulation activities.

5. The relationship between mastery goal orientation and deep-processing strategies:

There is a direct and meaningful relationship between mastery goal orientation and deep-processing strategies according to Table 4. These findings are in harmony with those of Ames (1984), Elliot and Thrash (2001), Elliot and McGregor (1999 & 2001), Vermetten et al (2001), Rink et al (2003), Simons, Dewitte and Lens (2004), Dupeyrat and Marine (2004, p.54), Wolters (2004, p.243), Coutinho and Neuman (2008, p.16), Aabedini (2007) and Mohsenpour (2004). Many studies have presented the evidence that by mastery, students focus on skills and learning because of internal reasons, and attempts for doing hard assignments are valuable for them. In addition, attempts to understand complex relationships are entangled with deep understanding processes.

6. The relationship between performance-approach goal orientation and deep-processing strategies:

There is not any meaningful relationship between performance-approach goal orientations and deep-processing strategies according to Table 4. These results correspond with those of Ames (1984), Meece et al (1988), Elliot and McGregor (1999), Vermetten et al (2001), Wolters (2004, p.243), Simons et al (2004), Dupeyrat and Marine (2004, p.54), Coutinho and Neuman (2008, p.16) and Mohsenpour (2004). Students who have performance-approach goal orientations are satisfied when they consider themselves more capable than others. These students use fewer recognition and self-regulation strategies because they show less interest in learning. On the other side, since the use of deep-learning strategies requires individual attempt and focus on ability, students prefer not using these strategies.

7. The relationship between performance-approach goal orientation and surface-processing strategies:

Students who have performance-approach goal orientation emphasize on ability and self-evaluation and they show their ability by doing better than others. As a result, success needs minimum of attempts in this orientation. Therefore, students use strategies which do not call for deep-information processes and just use surface strategies.

8. The relationship between performance-avoidance goal orientation and surface-processing strategies:

There is a direct and meaningful relationship between performance-avoidance goal orientation and surface-processing strategies based on Table 4. This finding is consistent with those of Elliot et al (1999), Eliot and McGregor (1999 & 2001), Simons et al (2004), Dupeyrat and Marine (2004, p.54), Coutinho and Neuman (2008,p.16) and Abedini (2007). Students who have performance-avoidance goal orientation would rather do their assignments in every possible way without any attempt. They avoid challenging assignments and by decreasing their own strategies try to deal with difficulties. They, in addition, use low-level learning strategies such as memorizing, repeating as well as reviewing.

Practical Suggestions

The main purpose of educational institutes is establishing learning in students, and evaluating their performance in order to understand the amount of learning. By keeping the importance of educational progress in mind, several factors are analysed which lead to progress in educational organizations which can lead to training active, independent and qualified students.

In the field of progress goals, some theoreticians including Dweck and Leggett (1988), Ames (1992), Maheer and Andreman (1993) and Roesser, Midgley and Urdan (1996) believe that the differences in the way of recognizing the class or educational environment is related to the progress goals of students. In the views of Ames (1992), Blumenfeld (1992) and Meece (1991), different structures in class can have an impact on students' recognition of the class. Some aspects of the class are among responsibilities of teachers such as planning assignments and learning activities, as well as evaluating activities and distribution of responsibilities. According to Ames (1992, p.262), using modern, challenging and various assignments and encouraging students to use effective learning strategies can help in accepting mastery goals by students. Teacher's evaluation of students' activities, just for being aware of their progress and sharing these results with students privately, and creating situations in the class which improve students' independence and responsibility can be of the factors which encourage students to accept mastery goals.

Consequently, as class structures play a leading role in students' choices of goal orientations, it is suggested that teachers create an environment in their classes which focuses on attempt, mastery and progress of students. In this way, students are inclined to choose mastery goals and to employ effective learning strategies in such environments which result in progress in students’ education.

References


