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The Role of Graduate Students' Achievement Goals in Their Critical Thinking Disposition

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Abstract

This study aimed to investigate the role of graduate students' achievement goals in their disposition towards critical thinking in Ferdowsi University of Mashhad. In a descriptive- correlation study, a sample consisting 167 graduate students was selected by using stratified random sampling method. They completed Midgley et al.'s (1998) Goal Orientations Questionnaire and Ricketts' (2003) Critical Thinking Dispositions Questionnaire. Results showed statistically significant relationship between all three components of students' achievement goals and their critical thinking disposition and 62% of variance of critical thinking disposition could be predicted by achievement goals. Besides, only the master goals could singly predict critical thinking disposition.

Keywords: Achievement Goals, Master Goals, Performance-approach Goals, Performance-avoiding Goals, Critical ThinkingDisposition,  Curriculum;

1. Introduction

1.1. Critical thinking and Achievement Goals definition

One of emphasized goals in each education system, especially higher education is to increase and improve learners' critical thinking skills. Critical thinking is not achieved without any disposition toward it. Ess (2004) believes that critical thinking needs individuals' some dispositions towards it. A critical thinker should not only tend to increase him/her critical thinking skills, but also evaluate his/her dispositions towards critical thinking frequently (Billings & Halstead, 2005). In other words, critical thinking incorporates two dimensions: skill and disposition. In the former, the cognitive processes and in the latter, attitudes and motivations in encountering various problems and thinking about them are involved (Profetto, 2003). As Gharib et al. (2009) argue, critical thinking has been emphasized and disposition toward it has been disregarded by related researchers. Mason (2008) argues that critical thinking is determined by especial skills such as ability to evaluate presented reasons reasonably. Facion & Facion (1994) say that critical thinking includes evaluation, inference, analysis and deductive and inductive reasoning. The enough dispositions towards developing and applying these skills are necessary (Jin, Bierma & Broadbear, 2004). Whitehead considers students' motivation for and attitudes towards critical thinking as main factors affecting their
critical thinking and believes that the lack of such dispositions from designing an appropriate framework for teaching and applying it (cf: Myers, 1992).

Nowadays, the complexity of educational problems (the great educational resource content volume, ineffective teaching methods and inappropriate evaluation procedures) has been resulted in increasing importance of curriculum as the only responding reference for whom responsible for educational affairs (Eight, 2005). If a curriculum is based on critical thinking skills, it will direct learners toward dispositions to critical thinking (Facion, 2000). Then, curricula should develop such dispositions and skills (British National Educational Association, 1979; cf. Parsa & Saketi, 2005).

Goals students determine for themselves can affect their orientation or disorientation towards critical thinking. If a student tends to learn new and challengeable knowledge (Midgley, Kaplan & Middleton, 2001) which necessitate deep thinking, creativity and problem solving, his/her critical thinking dispositions will increase and vice versa (Ozturk, Muslu & Dicle, 2008). The study of achievement goals as an active field of motivation studies interests many educationalists and researchers in education. Achievement goals indicate individuals' orientation towards goals for achievement and are not limited to only an especial goal considered in doing an especial task (Pintrich, AnneMarie, Conley & Kempler, 2003). Based on primary theories, Dweck (2000) divided achievement goals into 2 categories: master goals and performance goals. Master goals relate to students learning goals which have been selected and attained for satisfaction, understanding, acquiring new skills and solving problems and have positive mode. Current new theories of achievement goals emphasize three dimensional pattern involving master, performance-approach and performance-avoiding ones (Elliott, 1997; Harackiewicz, Barron, Pintrich, Elliot & Trash, 2002). In approach orientation towards achievement goals, individuals are positively motivated to try to be more effective and perform better than others, but in avoiding orientation toward achievement goals, individuals are negatively motivated to try to avoid failure and inefficiency (Elliot, Fonseca & Moller, 2006). Students with master goals value learning and understanding and students with performance goals value learning and understanding for achieving their external goals. They rarely have attitude towards complex and challengeable problems and then, critical thinking. The focus of master goals is on learning values (Grant & Dweck, 2003) and that of performance goals is on self and self-values (Dweck, 1988). Performance goals are important in the social situations in which individuals' performances are compared with others' performances (Meece, Blumenfeld & Hoyle, 1988). Performance-oriented students rarely use deep cognitive strategies, such as critical thinking (Wanga & Yi, 2008), because they are uninteresting to learn (Nicholls, 1984). Learners with master goals are interesting to use high level cognitive and meta-cognitive learning strategies which have especial motivational consequences (Ames, 1992; Dweck, 2000; Linnenbrink, 2005; Midgley, Arunkumar & Urden, 1998).

Study by Kharrazi, Ezhei, Tabatabaie and Kareshki (2008) showed that master goals are more related to adaptive cognition and feeling than performance goals. In fact, the relationship between goal orientations and feeling dimensions, as ignored ones in critical thinking (Profetto, 2003) should be considered by education systems, especially for students in higher study levels. Then, the objective of this study was to investigate the role of graduate students' achievement goals in their disposition towards critical thinking.

2. Method
2.1. Participants and procedures and Data Analysis

In a descriptive- correlation study, all graduate (M.D. and Ph.D.) students in Ferdowsi University of Mashhad, Iran during academic year of 2010-2111 were regarded as the study population. A randomized sample consisting 167 graduate students (56 boys and 111 girls) was selected by using stratified random sampling method according to their gender. They completed Midgley et al.'s (1998) Goal Orientations Questionnaire and Ricketts' (2003) Critical Thinking Dispositions Questionnaire. Data was analyzed by using Pearson's correlation coefficient, independent t-test and multiple regression analysis.

2.2. Instrumentation

Midgley et. al.'s (1998) Goal Orientations Questionnaire includes 18 items in Likerte-type 7-point scale and 3 subscales named master, performance-approach and performance-avoid goal orientations. In Midgley et al.'s (1998) study, the validity of these subscales by Cronbach alpha coefficient ranged from 0.70 to 0.84. Kharrazi, Ezhei,
Tabatabaie and Kareshki (2008) reported the validity of the subscales 0.87, 0.84 and 0.76, respectively and overall validity amounted to 0.87. Cronbach alpha coefficient amounted to 0.72 in the current study.

Ricketts’ (2003) Critical Thinking Dispositions Questionnaire includes 33 items in Likerte-type 5-point scale and 3 subscales entitled Innovativeness, Maturity and Engagement. The minimum and maximum scores in the questionnaire were 33 and 165, respectively. Cronbach alpha coefficient of these subscales were 0.75, 0.57 and 0.86, respectively and 0.81 in total.

3. Results

Table 1 shows the means, standard deviations and correlation coefficients of studied variables in all subjects by the subcomponents of goal achievements, and critical thinking dispositions. Approach and master goals (in p<0/01) and avoid goals (in p<0/01) had significantly positive correlation with critical thinking disposition. Goal achievement subscales mutually correlated in significant positive manner. The correlation between master goals and performance-approach goals (r= 0.92) and between performance-approach goals and performance-avoid goals (r= 0.21) were the highest and least, respectively. This is based on multiple goals theory described in the introduction. The relation of the components of achievement goals with critical thinking disposition shows that critical thinking disposition has the highest significantly positive correlation with master goals (r= 0.78) and the least significantly positive correlation with performance-avoid goals (r= 0.20).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Master Goals</td>
<td>32.40</td>
<td>7.05</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Approach Goals</td>
<td>25.95</td>
<td>6.88</td>
<td>0.92**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Avoid Goals</td>
<td>24.10</td>
<td>7.30</td>
<td>0.27***</td>
<td>0.21**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. Critical Thinking Disposition</td>
<td>1.16</td>
<td>11.35</td>
<td>0.78***</td>
<td>0.76***</td>
<td>0.20**</td>
<td>1</td>
</tr>
</tbody>
</table>

**p < .01    *** p < .001

Multiple regression analysis was done for estimating the predictability power of the components of the independent or predicting variable (i.e. achievement goals) in predicting the dependent variable (i.e. critical thinking disposition). This estimation amounted to R= 0.79 and the determinant coefficient equaled R²= 0.62. Then, 62% of variance of critical thinking disposition could be predicted by achievement goals. As shown in table 2, the result of analysis of variance for estimating the statistical significance of the measured correlation coefficient was significantly difference (F(3,163) = 91.81, p< 0.001). This means that achievement goals variable can predict critical thinking disposition variable in the subjects.

<table>
<thead>
<tr>
<th>Change resource</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>13457.25</td>
<td>3</td>
<td>4485.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>7964.07</td>
<td>163</td>
<td>48.85</td>
<td>91.81</td>
<td>0.000***</td>
</tr>
<tr>
<td>Total</td>
<td>21421.30</td>
<td>166</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** p < .001

Table 3 shows that the master goals could predict critical thinking disposition singly (t= 4.54, p< 0.001), but performance-approach goals (t= 1.68, p= 0.09) and performance-avoid goals (t= -0.07, p= 0.94) could not.
Table 3. The regression coefficients of the components of achievement goals in predicting critical thinking disposition in the subjects

<table>
<thead>
<tr>
<th>predictor variables</th>
<th>regression coefficient</th>
<th>SE</th>
<th>regression coefficient</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Goals</td>
<td>0.97</td>
<td>0.21</td>
<td>0.59</td>
<td>4.54</td>
<td>0.001***</td>
</tr>
<tr>
<td>Approach Goals</td>
<td>0.34</td>
<td>0.20</td>
<td>0.21</td>
<td>1.68</td>
<td>0.09</td>
</tr>
<tr>
<td>Avoid Goals</td>
<td>-0.006</td>
<td>0.07</td>
<td>-0.004</td>
<td>-0.07</td>
<td>0.94</td>
</tr>
</tbody>
</table>

*** p < .001

4. Discussion and Conclusion

The objective of this study was to investigate the role of achievement goals and its different dimensions in graduate students' disposition towards critical thinking. Results showed statistically significant relationship between all three components of students' achievement goals and their critical thinking disposition and 62% of variance of critical thinking disposition could be predicted by achievement goals. Besides, only the master goals can singly predict critical thinking disposition. This finding is accord with the findings of Dupeyrat and Marine (2005) and Fenollar, Roman & Cuestas (2007). In a large scale research, Phan (2009) found that master goals result in deep and reflective thoughts, such as critical thinking and performance-approach and performance-avoid ones affect only surface thinking. According to the results of these studies and our study, it can be said that if students select master goals, themselves or designed curricula encourage them to select such goals, they can orient toward positive critical thinking dispositions. As noted, students with master goals use deeply cognitive strategies such as critical thinking and this can motivated higher level learning strategies (Wanga and Yi Wub, 2008) resulting in their critical thinking (Dweck, 2000; Linnenbrink, 2005).

In conclusion, as master goals are motivated by internal motives, education environment, curricula, instructors and educational staff should emphasize upon internal motives for achievement and highlight the role of students' internal desires for their achievement in order to design proper settings for critical thinking. Also, instructors should be aware of importance and consequences of setting such goals and change their teaching methods to encourage students to select these goals. These may motivate students to think critically more than ever.

References


