The Role of Epistemological Beliefs in Goal Orientation and Study Strategies

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Abstract: The purpose of present study was to investigate the role of epistemological beliefs in goal orientation and study strategies among BA students of psychology major of Tehran universities. 300 students were selected through random clustering sampling among psychology students who answered the Schommer's epistemological (1992) questionnaire, Elliot, Vandivil & McGregor's Goal orientation (2001) questionnaire, McGregor & Gable's study strategies questionnaire. We used descriptive & inferential statistic including Pearson's correlation and regression to investigate the findings of this research. The findings of this research revealed that the Epistemological beliefs had a direct effect on goal orientation and choosing the best study strategies.

Key-words: - Epistemological Beliefs, Goal Orientation, Study Strategy

Introduction

Epistemological beliefs
Understanding how self-beliefs relate to school adjustment and academic performance has been an important area of study. In the last two decades the topic has gain particular attention. Epistemological beliefs are an individual's conception about knowledge and the conditions for acquiring knowledge (Hofer, 2002). Educational researchers have attempted to investigate how students know, how the nature of knowledge and knowing is related to students’ learning, and how students’ epistemological beliefs inform classroom instruction in di. Erent content areas (Schommer, 1997; Solomon, duveen, & Sott, 1994).

Epistemological beliefs are challenging to measure because they are covert, unconscious, and their effects on beliefs are unclear. Current research on epistemological beliefs has primarily used three types of data collection:

- Interviews,
- Open-ended questionnaires, and
- Likert-scale questionnaires.

Goal orientation
Refers to reasons why students engage in a task (DeBacker & Crowson, 2006; Pintrich; Pintrich & Schunk 2002).

Research on achievement goal orientation has proposed three types of achievement goal constructs:

Performance-goal orientation
Performance-goal orientation is defined in terms of a focus on demonstrating normatively high competence or ability, seeking recognition of accomplishments, avoiding looking dumb, and avoiding performing poorly.

Mastery-goal orientation
In contrast, mastery-goal orientation represents a focus on learning, understanding, task mastery, and personal improvement (Ames, 1992; Dweck, 1986; Nichols, 1984; Pintrich & Schunk 2002).

Some researchers have suggested that a combination of methods within a specific context may provide a more effective means of assessment (Clarebout, et al, 2001; Hofer & Pintrich, 1997; Pajares, 1992).


**Work-avoidant goal orientation**

The third type of goal orientation is the work-avoidant goal (Meece, 1991). Unlike mastery and performance oriented goals, which represent different forms of approach motivation, the work avoidant goal is characterized by a form of avoidance motivation. Here, the main question one can raise is: What causes to pursue these different goals?

**Study Strategy**

This theoretical viewpoint of learning and study strategies is concerned with the cognitive strategies that students apply to learning contexts. The most widely employed assessment of these strategies is Weinstein’s (1987); Weinstein, Palmer, & Shulte, (2002). Past research has identified two approaches to learning:

- **Meaningful approaches** (deep approaches to learning)
- **Rote approaches** (surface approaches to learning).

- Learners’ choice of using rote memorization as a mode of learning is called surface- or rote-learning orientation (Cavallo & Schaffer, 1994).

**Methods**

**Objectives**

Investigating the role of epistemological beliefs in goal orientation and study strategies among college students was the purpose of the present study.

**Sample**

300 students were selected through random cluster sampling among BA students of psychology.

**Measures**

1- Students’ epistemological beliefs were measured by Shommer epistemological questionnaire (EQ. Shommer, 1992). This 63-item questionnaire has been widely used in previous research Schommer, 1993; Schommer-Aikins & Hutter, 2002) and taps students’ preferences to statements about knowledge and knowing. For example, “scientists can ultimately get to the truth” and “successful students learn things quickly.” Students respond on a Likert-type scale ranging from strongly disagree (1) to strongly agree (7) to statements.

2- The Achievement Goal Questionnaire (AGQ) used in this research was designed to assess four widely studied goal orientations – mastery approach, mastery avoidance, performance approach and performance avoidance (Elliot & McGregor, 2001) and two additional goals that have been less studied – work avoidance and scholarly affiliation. Mastery approach is the goal to acquire knowledge for its own sake. Mastery avoidance, termed mastery anxiety in the instrument we used, is characterized by fear of losing or not gaining knowledge. helping others, and using the academic setting as a means to build social connections. All items used a 7-point Likert scale describing how true each statement is of the participant. The results of testing the reliability and validity of this measure are as follow:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Items</th>
<th>Kronbach α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disorganized approach</td>
<td>5</td>
<td>0.87</td>
</tr>
<tr>
<td>Performance approach</td>
<td>5</td>
<td>0.81</td>
</tr>
<tr>
<td>Mastery approach</td>
<td>5</td>
<td>0.78</td>
</tr>
<tr>
<td>Avoidance Performance</td>
<td>5</td>
<td>0.74</td>
</tr>
</tbody>
</table>

3- The study strategies questionnaire (Elliot, McGregor, and gable 1999) were administered five items were used in each variable (deep, surface and disorganized strategy). Participants indicated their responses to each item on a 1 (not at all true of me) to 7 (very true of me) scale. Some of the examination
results of reliability and validity of this measure are as follow:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Items</th>
<th>Kronbach α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disorganized</td>
<td>5</td>
<td>0.83</td>
</tr>
<tr>
<td>Deep</td>
<td>5</td>
<td>0.76</td>
</tr>
<tr>
<td>Surface</td>
<td>5</td>
<td>0.73</td>
</tr>
</tbody>
</table>

1- Epistemological beliefs
A number of studies have reported that the EQ has good psychometric properties in terms of reliability and content validity. Duell and Schommer-Aikins (2001), reported a .74 test– retest and .63 to.85 inter-item correlations for items within each belief factor.

Results

Table1: Multiple regression models to explain goal orientation (disorganized processing)

<table>
<thead>
<tr>
<th>Steps of analysis</th>
<th>Predictor variable</th>
<th>B</th>
<th>R2</th>
<th>ΔR2.1</th>
<th>SEM</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>first</td>
<td>Innate-fix ability</td>
<td>.33</td>
<td>.108</td>
<td>.108</td>
<td>20.51</td>
<td>12.41</td>
<td>.05</td>
</tr>
<tr>
<td>second</td>
<td>Innate-fix ability</td>
<td>.37</td>
<td>.136</td>
<td>.03</td>
<td>18.22</td>
<td>9.07</td>
<td>.05</td>
</tr>
<tr>
<td>third</td>
<td>Innate-fix ability</td>
<td>.40</td>
<td>.16</td>
<td>.024</td>
<td>17.76</td>
<td>7.89</td>
<td>.05</td>
</tr>
</tbody>
</table>

P<.05
SEM : Standard Error mean
The results revealed that among the predictor variables innate-fix ability, one response and uncertainty were run. 16 percent of variance are of disorganized processing were explained.

Table2: Multiple regression models to explain goal orientation (deep processing)

<table>
<thead>
<tr>
<th>Steps of analysis</th>
<th>Predictor Variable</th>
<th>B</th>
<th>R2</th>
<th>ΔR2.1</th>
<th>SEM</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>first</td>
<td>Performance avoidance</td>
<td>-.39</td>
<td>.15</td>
<td>.15</td>
<td>13.21</td>
<td>16.40</td>
<td>.05</td>
</tr>
<tr>
<td>second</td>
<td>Performance avoidance</td>
<td>-.44</td>
<td>.19</td>
<td>.04</td>
<td>11.32</td>
<td>13.47</td>
<td>.05</td>
</tr>
<tr>
<td>third</td>
<td>Performance avoidance</td>
<td>-.47</td>
<td>.22</td>
<td>.03</td>
<td>14.56</td>
<td>10.09</td>
<td>.05</td>
</tr>
</tbody>
</table>

P<.05
As the result show among the predictor variables one response, Performance avoidance and Performance approach were run and 22 percent of disorganized processing were explain.

**Table 3: Multiple regression models to explain goal orientation (surface processing)**

<table>
<thead>
<tr>
<th>Steps of analysis</th>
<th>Predictor Variable</th>
<th>B</th>
<th>R²</th>
<th>ΔR².1</th>
<th>SEM</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>first</td>
<td>One response</td>
<td>.38</td>
<td>.14</td>
<td>.14</td>
<td>7.18</td>
<td>20.98</td>
<td>.05</td>
</tr>
<tr>
<td>second</td>
<td>uncertainty</td>
<td>.43</td>
<td>.18</td>
<td>.04</td>
<td>6.82</td>
<td>16.32</td>
<td>.05</td>
</tr>
<tr>
<td>third</td>
<td>Reliance On authorities</td>
<td>.45</td>
<td>.20</td>
<td>.02</td>
<td>6.72</td>
<td>11.11</td>
<td>.05</td>
</tr>
<tr>
<td>fourth</td>
<td>Performance avoidance</td>
<td>.48</td>
<td>.23</td>
<td>.03</td>
<td>6.59</td>
<td>7.59</td>
<td>.05</td>
</tr>
</tbody>
</table>

As the result show among the predictor variables one response and uncertainty and reliance on authorities and Performance avoidance were run and 23 percent of surface processing were explain.

**Discussion**

Previous studies suggested that students’ achievement goal orientations are related to their beliefs about the causes of success. (Meece, 1991). Learners with mastery goals hold the belief that effort, interest and attempts to understand determine success, depends on impressing the teacher and performing better than others. In recent years, researchers of learning and motivation have become interested in students’ self-regulation of their academic learning and performance.

The recent research performed to distinguish between performance-approach and performance-avoidance goal orientations produced mix results (Elliot, 1999; Pintrich & Schunk). For example, Wolters, Yu, and Pintrich (1996) found a positive relation between performance-approach goal orientation and the use of deeper cognitive strategies. In contrast, Kaplan and Midgley (1997) found a positive relation between performance-approach goal orientation and surface approaches to learning.

Tsai (1998) claimed that learners’ scientific epistemological beliefs may shape their metalearning and hence affect their learning approaches. Past research has identified two approaches to learning: meaningful approaches (deep approaches to learning) and rote approaches (surface approaches to learning). Learners’ choice of using rote memorization as a mode of learning is called surface- or rote-learning orientation (Cavallo & Schaffer, 1994).

Cano (2005) showed that epistemological beliefs affected academic achievement directly and indirectly through students’ learning approaches. Cano concluded that the relation between epistemological beliefs and academic achievement is mediated by approaches to learning. His study also indicated that throughout the secondary education years, epistemological beliefs and learning approaches change. Although students’ epistemological beliefs become more realistic and complex, their learning approaches become less meaningful. Collectively, the aforementioned studies show that students with sophisticated epistemological beliefs and those who adopted meaningful-learning orientation for learning were likely to perform better than were those holding naïve beliefs or using rote-learning orientation. Indeed, studies focusing on learning approaches have suggested that there is a statistically significant association between students’ learning approaches and their science achievement (e.g., BouJaoude, 1992; BouJaoude & Giuliano, 1994; BouJaoude, Salloum, & Khalick, 2004; Cavallo, 1996; Cavallo & Schaffer, 1994). For example, in one of the earlier studies investigating the relation between high school students’ learning orientations, BouJaoude reported that students’ misunderstanding of the pretest about chemistry concepts and their learning approaches...
accounted for a statistically significant proportion of the variance on their performance on the posttest. Similarly, the work of Cavallo and Schaffer with 163 10th-grade students indicated that students using meaningful-learning approaches, as measured by the Learning Approach Questionnaire, achieved more meaningful understanding of genetics than did those using rote learning approaches.

References:


Learning Educational Psychology Review, 13, 419–449.


