Academic Motivation: Gender, Domain and Grade Differences

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Abstract

Academic motivation is a key determinant of academic performance and achievement. The purpose of this study was to determine undergraduates’ academic motivation in terms of gender, domain and grade differences. The participants of the study consisted of 750 undergraduates studying in different departments. To determine the individual differences in undergraduates’ academic motivation, data were collected using “Academic Motivation Scale”, originally developed by Vallerand et al. (1992) and Turkish bilingual equivalence, validity and reliability of which carried out by Karatas and Erden, (2011), was used. Analyses of t-test were conducted to determine the undergraduates’ academic motivation in terms of their gender, domains and grades. The results revealed that significant differences were found in undergraduates’ academic motivation according to gender, domain and grade. These findings and implications for educational researchers were discussed.

1. Introduction

One of the most important psychological concepts in education is certainly that of motivation which concerns energy, direction, persistence and equifinality—all aspects of activation and intention. The study of motivation begins with the ‘why’ question of behavior (Deci & Ryan, 1985; McClelland, 1985; Weiner, 1992). Motivation has also an important influence on a learner’s attitude and learning behaviour (Deci & Ryan, 1985; Fairchild, Jeanne Horst, Finney, & Barron, 2005; Ryan & Deci, 2000a; Vallerand et al., 1992). Moreover, motivation has been a
central and perennial issue in the field of psychology, for it is at the core of biological, cognitive, and social regulation (Ryan & Deci, 2000). The study of motivation begins with the ‘why’ question of behavior (Deci & Ryan, 1985; McClelland, 1985; Weiner, 1992). Indeed, much research has shown that motivation is related to various outcomes such as curiosity, persistence, learning, and performance (Deci and Ryan, 1985). In light of the importance of these consequences for education, one can easily understand the interest of researchers for motivation in educational settings.

It is generally agreed that motivation is beneficial for learning and achievement: Motivated students invest more time in their courses (Pintrich, 2003a; Pintrich & Schunk, 2002) and are more likely to complete their study programs, whereas unmotivated students are more prone to drop out (e.g., Vallerand & Bissonnette, 1992). The social context of a learning environment can influence the motivation students experience (Black & Deci, 2000). For instance, the way instructions are framed, can influence students’ subsequent learning process and performance (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004).

Many psychologists and educators have long considered students’ motivation as an important factor for successful school learning (Ryan & Connell, 1989). Since the early 1970’s, there has been a sustained research focus on how students’ motivation impact learning and classroom performance (Linnenbrink & Pintrich, 2002). Research in this area has pointed out that students’ motivation predict both the quality of engagement in school learning (Ames, 1992) and the degree to which students seek out or avoid challenging situations and persist in the face of difficulties (Elliott & Dweck, 1988).

Getting students involved, engaged, and motivated in learning activities is perhaps one of the most challenging tasks that parents and teachers have to deal with. Motivation is an internal state that instigates, directs, and maintains behavior. Intrinsic and extrinsic motivation lie as bedrock constructs underpinning a number of contemporary theories of motivation such as attribution theory (Weiner, 1985), expectancy-value theory (e.g., Feather, 1988; Wigfield & Eccles, 1992; Wigfield, Tonks, & Eccles, 2004), self-determination theory (Deci & Ryan, 2000a, 2000b), self-efficacy theory (Zimmerman, 2000) as well as achievement goal theory (Elliot, 1999; Meece, Anderman, & Anderman, 2006) and Future Time Perspective (FTP) (DeVolder & Lens, 1982; Simons, Vansteenkiste, & Lens, 2004) (see also Schunk, Pintrich, & Meece, 2008 for a comprehensive review).

1.1. Academic Motivation

Several studies have shown that academic motivation is a key determinant of academic performance and achievement (Green, Nelson, Martin, & Marsh, 2006; Linnenbrink & Pintrich, 2002). Thus, a greater understanding of academic motivation and its correlates can provide instructors and researchers alike with valuable information regarding how students adjust to the college setting. Much of the research regarding academic motivation focuses on its relationships with academic performance, approaches to learning, and thinking styles (Komarraju & Karau, 2005). However, several researchers have suggested that personality factors are also related to motivation and have great implications for how students learn scholastic material (Busato, Prins, Elshout, & Hamaker, 2000; Komarraju & Karau, 2005).

Academic motivation can most simply be defined as the factors that influence a person to attend school and obtain a degree. Several conceptual perspectives have been proposed in order to better understand academic motivation. While there have been many theories of motivation (Marsh, Craven, Hinkley, & Debus, 2003; Middleton & Toluk, 1999), one of the best known theories of motivation is Deci and Ryan's Self-determination theory in which the behavior can be intrinsically motivated, extrinsically motivated, or amotivated (Deci and Ryan, 1985, 1991). This theoretical approach has generated a considerable amount of research and appears rather pertinent for the field of education (see Deci and Ryan, 1985; Deci, Vallerand, Pelletier, and Ryan, 1991). Researchers have tested and supported this representation of self-determination theory as a continuum in a number of different domains (Blais, Sabourin, Boucher, & Vallerand, 1990; Goudas, Biddle, & Fox, 1994). Many motivation theories are two-factor structures that make distinctions between motivated behavior, that done with a personal intention or choice, and amotivation, behavior done unwillingly or out of compliance (Heider; Seligman as cited by Deci, Vallerand, Pelletier, & Ryan, 1991). However, SDT claims that motivated behavior can be further dissected into two motivating factors, intrinsic motivation and extrinsic motivation, and a factor that reflects a lack of motivation,
amotivation (Deci & Ryan, 1985). Since it has been formulated, SDT has been organized using a variety of different structures as it applies to academic motivation (Deci & Ryan, 2008; Komarraju, Karau, & Schmeck, 2009). Vallerand and colleagues have added further theoretical concepts to the model of Deci and Ryan (1985) by acknowledging that the attitudes, values and goals that trigger a learner to become intrinsically motivated can differ when a learner enters into college or university and voluntarily chooses a study. This is a hierarchical structure with three higher-order factors and six second-order factors (Vallerand et al., 1992). The three higher-order factors are intrinsic motivation, when behaviors are done out of pleasure or for the sake of enjoyment; extrinsic motivation, when behaviors are done to achieve a goal or reward beyond the activity itself; and amotivation, when individuals do not perceive any reward for their behavior. There are three subfactors that make up extrinsic motivation: identified (behavior entailing the person attributing personal value to the behavior), introjected (behaviors are still controlled in part by the environment, but also by internal reward/punishment contingencies, such as ego enhancement, guilt, or obligation), and external (behavior is regulated through external means such as rewards and constraints) types of regulation; and three subfactors within intrinsic motivation: intrinsic motivation to know (the fact of doing an activity for itself, and the pleasure and satisfaction derived from participation such as exploration, curiosity, learning goals, intrinsic intellectuality), intrinsic motivation toward accomplishments (fact of engaging in an activity for the pleasure and satisfaction experienced when one attempts to accomplish or create something), and intrinsic motivation to experience stimulation (the fact of engaging in an activity in order to experience stimulating sensations such as sensory pleasure, aesthetic experiences, as well as fun and excitement) (Deci, 1975; Deci and Ryan, 1985, 1991). In addition to intrinsic and extrinsic motivation, Deci and Ryan (1985) have recently posited that a third type of motivational construct is important to consider in order to fully understand human behavior. This concept is termed amotivation. Individuals are amotivated when they do not perceive contingencies between outcomes and their own actions. They are neither intrinsically nor extrinsically motivated. They perceive their behaviors as caused by forces out of their own control feel undeceived. Eventually they may stop participating in academic activities.

One of the goals of higher education is to increase motivation for life-long learning. Some theorists (e.g., Dweck, 1986; Harackievicz, Barron, & Elliot, 1998; Pintrich, 2000) have proposed that college students have multiple goals in learning; e.g., satisfying one’s need for achievement, enhancing one’s self-confidence, obtaining recognition and approval, avoiding flunking-out, obtaining knowledge and skills necessary for a job, confirming that one has studied appropriately, showing that one excels in comparison with other students, avoiding criticism from parents or negative reactions from peers, etc. Thus, it seems likely that intrinsic and extrinsic motivation, rather than being at opposite ends of a single dimension, may be much more complex in their relationships with one another and other variables such as individual differences affecting student achievement. These individual differences provide important clues about how best to design educational offerings. Students also differ in the level of motivation they display in the classroom. Some approach learning opportunities with enthusiasm and an intrinsic desire to know more while others seem bored and uninterested. There are various factors, both personal and contextual, that explain these differences (Stipek, 2002). While a number of studies have examined individual differences in learning styles, thinking styles, academic achievement, and academic success, few have focused on individual differences in academic motivation. Yet, academic motivation is a key determinant of academic performance and deserves closer attention (Linnenbrink & Pintrich, 2002).

The current research was designed to examine the types of academic motivation of undergraduates, and examine whether these types changed according to some variables such as gender, domains and grade level. Therefore, the aim of this study was to determine undergraduates’ academic motivation in terms of gender, domain and grade differences. In this research, the scores of undergraduates on the main factors such as amotivation, extrinsic motivation and intrinsic motivation were analyzed.
2. Method

2.1. Participants

In this research, the study group was composed of 750 undergraduates studying at Yıldız Technical University, Istanbul, Turkey. The participants included 364 female (%48.5) and 386 male (%52.5). The number of Applied Sciences students was 450 (%60) and those whose domain was Social Sciences were 300 (%40). The number of the students studying at the first grade was 242 (%38) and those studying at the fourth grade was 148 (%62). Cluster random sampling integrated with convenience sampling was used to obtain the sample.

2.2. Data Collecting Instrument

The Turkish adaptation form of AMS (Karatas & Erden, 2011) was the instrument used in this study. The AMS was originally created in French and referred to as l'Échelle de Motivation en Éducation (Vallerand, Blais, Brière, & Pelletier, 1989). It was later translated into English and proved to be satisfactory in conversion when tested for psychometric properties (Vallerand, et al., 1992; Vallerand et al., 1993). The internal consistency estimates ranged from .83 to .86, which were quite similar to the French version estimates ranging from .76 to .86 (Vallerand, et al., 1992). The test-retest correlation (of one month) was .79 indicating temporal stability (Vallerand, et al., 1992). The scale consists of 28 items to measure the following seven constructs: intrinsic motivation (1) towards knowledge (2) towards accomplishments (3) to experience stimulation and extrinsic motivation that is (4) identified (5) introjected (6) externally regulated, and (7) amotivation (Vallerand et al., 1992). The Turkish version of the scale is composed of 27 items to measure the seven constructs as the original scale. As a result of validity study of AMS, in contrast to the original scale, two items in the sub-factor “towards accomplishments” took place in different sub-factors, one of which was in “towards knowledge” sub-factor of intrinsic motivation and the other was in “introjected” sub-factor of extrinsic motivation. Because the main factor of the item taking place in “towards knowledge” sub-factor didn’t change, it was decided to use in the research in which the students’ scores on main factors would be analyzed. However, since the main factor of the item taking place in “introjected” sub-factor changed, it was removed from the scale. The internal consistency estimates of Turkish version of AMS ranged from .78 to .87, which were quite similar to the French version estimates ranging from .76 to .86 (Vallerand, et al., 1992) and that of English version estimates ranging from .83 to .86 (Vallerand, et al., 1993). In addition to the 27 items on the scale, the following information was added to further assess what, if any, association gender, domain, and grade with academic motivation.

2.3. Analysis of Data

In the statistical analysis of the data the SPSS for Windows 15.0 statistical software program was used. At this stage, Descriptive Statistics Methods were applied, while determining the academic motivation of undergraduates. For the analysis of the data obtained from the Academic Motivation Scale, the means, frequency and standard deviation were used to determine if there was a difference between groups. It was analyzed whether there was a significant difference in undergraduates’ academic motivation in terms of gender, domain and grade. Statistical analysis was carried out using t-test analysis for independent groups since test of normality was ensured. The statistics obtained were transferred into the tables by grouping and then interpreted.

3. Findings

In this chapter, we allow for the analyses, carried out with the aim of determining the academic motivation of undergraduates. Table 1 indicates the minimum and maximum scores, means and standard deviations for undergraduates’ academic motivation.

Table 1
Minimum and maximum scores, means and standard deviations for undergraduates’ academic motivation
As a result of the findings obtained from undergraduates regarding the factor named “Amotivation”, it was seen that the scores changed ranging from 4.00 to 28.00. The mean relating to this factor was 8.47. The scores on the factor, named “Extrinsic Motivation”, changed ranging from 14.00 to 84.00. The mean of undergraduates’ scores relating to this factor was 57.57. The scores regarding the factor, named “Intrinsic Motivation”, changed ranging from 11.00 to 77.00 and the mean of undergraduates’ scores on this factor was 47.90. Taking the mean of undergraduates scores relating to these three factors into consideration, it was seen that undergraduates’ amotivation level was quite low, and the scores of undergraduates on the factors, extrinsic motivation and intrinsic motivation, were above medium level.

Table 2
T-test results of undergraduates academic motivation scores with respect to gender

<table>
<thead>
<tr>
<th>Factor</th>
<th>Gender</th>
<th>n</th>
<th>M</th>
<th>sd</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amotivation</td>
<td>Female</td>
<td>386</td>
<td>9.08</td>
<td>5.86</td>
<td>2.98</td>
<td>748</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>364</td>
<td>7.83</td>
<td>5.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrinsic Motivation</td>
<td>Female</td>
<td>386</td>
<td>55.33</td>
<td>11.79</td>
<td>5.19</td>
<td>748</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>364</td>
<td>59.95</td>
<td>12.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic Motivation</td>
<td>Female</td>
<td>386</td>
<td>45.51</td>
<td>12.97</td>
<td>5.24</td>
<td>748</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>364</td>
<td>50.43</td>
<td>12.76</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on t-test results in Table 2, it was seen that undergraduates’ gender indicated a significant difference in each of the three factors of AMS. It was found that amotivation level of female and male undergraduates differed significantly, and this difference was in favour of female undergraduates \[t(748)=2.98 \ p<.05\]. Amotivation level of female undergraduates was higher than female undergraduates \[X_f=9.08, \ X_m=7.83\]. Besides, it can be reported that extrinsic motivation levels of female and male undergraduates were significantly different and this difference was in favour of male \[t(748)=5.19 \ p<.01\]. Extrinsic motivation level of male undergraduates was higher than that of female undergraduates \[X_f=55.33, \ X_m=59.95\]. Lastly, it was also found that intrinsic motivation levels of female and male undergraduates were significantly different and this difference was in favour of male \[t(748)=5.24 \ p<.01\]. Intrinsic motivation level of male undergraduates was higher than that of female undergraduates \[X_f=45.51, \ X_m=50.43\].

Table 3
T-test results of undergraduates academic motivation scores with respect to domain

<table>
<thead>
<tr>
<th>Factor</th>
<th>Domain</th>
<th>n</th>
<th>M</th>
<th>sd</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amotivation</td>
<td>AS</td>
<td>450</td>
<td>8.88</td>
<td>5.74</td>
<td>2.41</td>
<td>748</td>
<td>.01*</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>300</td>
<td>7.85</td>
<td>5.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrinsic Motivation</td>
<td>AS</td>
<td>450</td>
<td>56.92</td>
<td>11.81</td>
<td>1.77</td>
<td>748</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>300</td>
<td>58.55</td>
<td>13.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic Motivation</td>
<td>AS</td>
<td>450</td>
<td>46.04</td>
<td>12.93</td>
<td>4.82</td>
<td>748</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>300</td>
<td>50.68</td>
<td>12.86</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As is seen from Table 3, domain differences were found on the factors, amotivation and intrinsic motivation. It is seen that the levels of amotivation of female and male undergraduates were significantly different, and this difference was in favour of undergraduates studying in applied sciences \[t(748)=2.41 \ p<.05\]. The mean of amotivation level of social sciences undergraduates was lower than those studying in applied sciences \[X_{AS}=8.88, \ X_{AS}=7.85\].
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It is also found that the levels of intrinsic motivation of applied sciences and social sciences undergraduates were significantly different, and this difference was in favour of undergraduates studying in social sciences \( t(748)=4.82 \ p<.05 \). The mean of undergraduates’ intrinsic motivation studying in social sciences were higher than theirs studying in applied sciences \( \bar{X}_{AS}=46.04, \ \bar{X}_{SS}=50.68 \).

### Tablo 4
T-test results of undergraduates academic motivation scores with respect to grade

<table>
<thead>
<tr>
<th>Factor</th>
<th>Grade</th>
<th>n</th>
<th>M</th>
<th>sd</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amotivation</td>
<td>1. grade</td>
<td>242</td>
<td>7.66</td>
<td>5.25</td>
<td>2.54</td>
<td>388</td>
<td>.01*</td>
</tr>
<tr>
<td></td>
<td>4. grade</td>
<td>148</td>
<td>9.11</td>
<td>5.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrinsic Motivation</td>
<td>1. grade</td>
<td>242</td>
<td>59.03</td>
<td>12.71</td>
<td>2.32</td>
<td>388</td>
<td>.02*</td>
</tr>
<tr>
<td></td>
<td>4. grade</td>
<td>148</td>
<td>56.00</td>
<td>12.22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic Motivation</td>
<td>1. grade</td>
<td>242</td>
<td>50.50</td>
<td>12.45</td>
<td>3.19</td>
<td>388</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>4. grade</td>
<td>148</td>
<td>46.24</td>
<td>13.27</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As it is shown in Table 4, it was seen that undergraduates’ grades caused a significant difference in each of the three factors of AMS. It was found that amotivation level of the first and fourth grade undergraduates differed significantly, and this difference was in favour of the first grade undergraduates \( t(388)=2.54, p<.05 \). Amotivation level of the first grade undergraduates was lower than that of the fourth grade undergraduates \( \bar{X}_{1g}=7.66, \bar{X}_{4g}=9.11 \). Also, it can be reported that extrinsic motivation level of the first and fourth grade undergraduates differed significantly, and this difference was in favour of the first grade undergraduates \( t(388)=2.32, p<.05 \). Extrinsic motivation level of the first grade undergraduates was higher than that of the fourth grade undergraduates \( \bar{X}_{1g}=59.03, \bar{X}_{4g}=56.00 \). Lastly, it was also found that intrinsic motivation level of the first and fourth grade undergraduates differed significantly, and this difference was in favour of the first grade undergraduates \( t(388)=3.19, p<.05 \). Intrinsic motivation level of the first grade undergraduates was higher than that of the fourth grade undergraduates \( \bar{X}_{1g}=50.50, \bar{X}_{4g}=46.24 \).

### 4. Results

The first purpose of this study was to identify the academic motivation of undergraduates, and then find whether there is a significant difference in terms of some variables such as gender, domains and grade level. Relating to academic motivation, it was seen that undergraduates’ amotivation level was quite low, and the scores of undergraduates on the factors, extrinsic motivation and intrinsic motivation, were above medium level.

As seen the results of the analysis regarding gender differences in academic motivation, it was found that amotivation level of female and male undergraduates differed significantly, and this difference was in favour of female undergraduates. Amotivation level of female undergraduates was higher than female undergraduates. Besides, it can be reported that extrinsic motivation levels of female and male undergraduates were significantly different and this difference was in favour of male. Extrinsic motivation level of male undergraduates was higher than that of female undergraduates. It was also found that intrinsic motivation level of female and male undergraduates were significantly different and this difference was in favour of male. Intrinsic motivation level of male undergraduates was higher than that of female undergraduates. The findings relating to gender differences in this research are not in line with the previous researchs. The analysis conducted by Arıogul, 2011) showed no significant difference in academic motivation between male and female pre-service English teachers. The findings were not supported by the findings of the researches carried out by Spittle et al. (2009) and Vallerand et al. (1992) who have found female pre-service teachers scoring higher than males. The results concerning gender differences were also different from Vallerand and Bissonnette (1992), Vallerand, Pelletier, Blais, Brière, Senécal, & Vallières (1992). Unlike the findings of this study, females reported higher levels of IM to know, IM to experience stimulation, identification and introjection, but lower levels of amotivation than males (Vallerand et al., 1992; Vallerand et al., 1989).

Domain differences were found on the factors, amotivation and intrinsic motivation. It is seen that the levels of amotivation of applied sciences and social sciences undergraduates were significantly different, and this difference
was in favour of undergraduates studying in social sciences. The mean of amotivation level of social sciences undergraduates was lower than those studying in applied sciences. It is also found that the levels of intrinsic motivation of applied sciences and social sciences undergraduates were significantly different, and this difference was in favour of undergraduates studying in social sciences. The mean of undergraduates’ beliefs studying in social sciences were higher than theirs studying in applied sciences. Generally, it might be said that the reason of academic motivation level of applied sciences undergraduates was lower than that of social sciences students in this research was the variety and difficulty of the courses in applied sciences.

It was seen that undergraduates’ grades caused a significant difference in each of the three factors of AMS. It was found that amotivation level of the first and fourth grade undergraduates differed significantly, and this difference was in favour of the first grade undergraduates. Amotivation level of the first grade undergraduates was lower than that of the fourth grade undergraduates. Also, it can be reported that extrinsic motivation level of the first and fourth grade undergraduates differed significantly, and this difference was in favour of the first grade undergraduates. Extrinsic motivation level of the first grade undergraduates was higher than that of the fourth grade undergraduates. Lastly, it was also found that intrinsic motivation level of the first and fourth grade undergraduates differed significantly, and this difference was in favour of the first grade undergraduates. Intrinsic motivation level of the first grade undergraduates was higher than that of the fourth grade undergraduates. The findings of this research are in line with the previous researches. In the study of Brouse et al. (2011), both intrinsic and extrinsic motivation declined with years in college, and this finding seems to support the statement made by Ryan and Deci in 2000, that, in general, levels of intrinsic motivation decrease with a progression through one’s academic career, becoming less and less self-determined. These findings explained the arguments of other researchers cited in Vallerand et al. (1992) that “external events, imposed goals and competition have been found to decrease intrinsic motivation”.

References


