A study on the university students’ self-regulated learning strategies skills and self-efficacy perceptions in terms of different variables

Ceyhun Ozan a,*, Kerim Gundogdu b, Erdal Bay c, Hikmet Y. Celkan d

Abstract

The purpose of this study is to investigate the university students’ self-regulated learning strategy skills and self-efficacy perceptions in terms of different variables within the frame of “Curriculum Development and Instruction” course. Survey method was benefited in this descriptive study. The study group consisted of 310 university students registered to different three faculties in Atatürk University, Turkey, and taking the “Curriculum Development and Instruction” course to be associated with teaching affairs in the future. At the end of the analyses the university students’ self-efficacy perceptions and self-regulated learning strategy skills were found high and the values obtained though the statistical analyses were statistically different according to gender and faculty variables.

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Keywords: Self-regulated learning, self efficacy, university students, gender, faculty

1. Introduction

Social cognitive theory (Bandura, 1986) has provided a theoretical basis for the development of a model of self-regulated learning in which personal, contextual and behavioral factors interact in such a way as to give learners an opportunity to control their learning. Within this framework, Pintrich (2000, p. 453) defined self-regulated learning as an “active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features of the environment. These self-regulatory activities can mediate the relationships between individuals and the context, and their overall achievement (Zimmerman, 2000).

Pintrich (2000) identified four common assumptions about self-regulated learning. First, self-regulated learners do more than passively consume information that has been presented to them by others. In the process of learning, they actively create strategies, goals, and meaning. Second, self-regulated learners can to some extent, given the constraints imposed by individual differences, contexts, and biology, monitor and influence their actions. Third, self-regulated learners use goals or standards to assess the adequacy of their learning and make changes if necessary. Fourth, these learners use self-regulating processes to mediate the influence of external contexts and personal characteristics so as to enhance academic achievement and performance.

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1877-0428 © 2012 Published by Elsevier Ltd. Selection and/or peer review under responsibility of Prof. Dr. Hüseyin Uzunboylu
doi:10.1016/j.sbspro.2012.05.383
Self-regulated learners are students who are aware of their metacognitive knowledge of strategies and tasks, as well as self-knowledge. These learners are able to transfer their metacognitive knowledge to all contexts and content areas. For example, students are often confronted with new tasks that require knowledge and skills they have not yet learned. In this circumstance, they cannot rely on previous knowledge to assist them in their performance on the new task. Students who are self-regulated learners will likely use strategies to help them think about and solve new problems. They will recognize that they lack expertise and utilize learned strategies to assist them in completing challenging tasks. Further, students who know their strengths and weaknesses and self-knowledge, will adjust their learning strategies to be adaptive to further their learning and academic success (Pintrich, 2002, p. 222-223). Winne (1996) noted that students who do not receive much explicit instructions about the knowledge and skills that underlie self-regulated learning, nonetheless are developing forms of self-regulated learning and may develop forms of self-regulated learning that are suboptimal. Thus, it is plausible that there are qualitative and quantitative differences between the self-regulatory processes of effective and less effective self-regulated learners.

Bandura (1986, p. 391) defined self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance". Implicitly, self-efficacy refers to people's specific beliefs about their capability to perform certain actions or to bring about intended outcomes in a domain or to otherwise exert control over their lives (Bandura, 1986, 1993; Bockaerts, 1992; Schunk, 1990). Students whose sense of efficacy was raised set higher aspirations for themselves, showed greater strategic flexibility in the search for solutions, achieved higher intellectual performances, and were more accurate in evaluating the quality of their performances than students of equal cognitive ability who were led to believe they lacked such capabilities. Efficacy beliefs contributed to accomplishments both motivationally and through support of strategic thinking. Perceived self-efficacy for self-regulated learning also raises academic goals and aspirations, personal standards for the quality of work considered to be acceptable, and beliefs in one's capabilities for academic achievement after controlling for instructional level, prior academic performance, and relevant aptitude (Zimmerman, Bandura, Martinez-Pons., 1992; Zimmerman & Bandura, 1994).

Considering the literature related to learning strategies based on self-regulatory and self-efficacy skills, it can be said that most of the studies were done with primary and high school students (Alci & Altun, 2007; Miller, 2000; Pajares & Graham, 1999; Peklaj & Pecjak, 2002; Pintrich & De Groot, 1990; Vanderstoep, Pintrich & Fagerlin, 1996; Wolters & Pintrich, 1998; Zimmerman & Martinez-Pons, 1990). Although there are a few studies related to self-regulated learning skills, no study were observed related to university students' and prospective teachers' self-regulated learning skills in certain pedagogical courses in pre-service training period (Andrew & Vialle, 1998; Chye, Walker & Smith, 1997; Fettahloğlu, 2011; Paulsen & Feldman, 1999). In that sense the purpose of this study is to investigate the university students' self-regulated learning strategy skills and self-efficacy perceptions in terms of different variables within the frame of ‘Curriculum Development and Instruction” course.

2. Method

2.1. Study group

The participants of this study were 310 students (229 female and 81 male) in three different faculties taking “Curriculum and Instruction” course in a public university in Turkey, in 2010-2011 academic year. Of the participants, 142 students were from Education Faculty, 116 were from Health Faculty and 52 were from Agriculture Faculty.

2.2. Instrumentation

A survey design was employed in this study. Regarding this, the “Motivated Strategies for Learning Questionnaire (MSLQ)” designed by Pintrich Smith, Garcia & McKeachie (adapted into Turkish by Altun & Erden in 2006) was administered to all participants. The scale consisted of metacognitive self-regulation, time management and study environment, effort regulation, help seeking and self-efficacy dimensions. Each item was evaluated on a 7-point
Likert scale, from 1- “not at all true for me” to 7- “very true for me”. The sub-dimensions and the highest and lowest points that can be taken by a student in the scale were calculated and presented in Table 1.

Table 1. Number of items and ranges of factors in the scale

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of Items</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive self-regulation</td>
<td>11</td>
<td>11-77</td>
</tr>
<tr>
<td>Time and study environment management</td>
<td>8</td>
<td>8-56</td>
</tr>
<tr>
<td>Effort regulation</td>
<td>4</td>
<td>4-28</td>
</tr>
<tr>
<td>Help seeking</td>
<td>4</td>
<td>4-28</td>
</tr>
<tr>
<td>Self-regulation</td>
<td>35</td>
<td>35-245</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>8</td>
<td>8-56</td>
</tr>
</tbody>
</table>

Cronbach values for the factors in the scale were calculated as .85 for self-regulating factor, .77 for time and study environment management, .88 for effort regulation, .76 for help seeking and .89 for self-efficacy factors. In the current study, Cronbach values were calculated as .82 for metacognitive self-regulation; .75 for time and study environment management; .77 for effort regulation; .75 for help seeking and .90 for self-efficacy.

2.3. Data analysis

The data collected from the candidate teachers was analyzed using SPSS 15.00 for Windows pack. Firstly, arithmetical mean scores of students’ self-regulatory learning strategies and self-efficacy perceptions were determined. Then, t test for independent groups’ was done to determine the variability of the scores according to the gender variable and One way ANOVA was done to determine the differences among the mean scores according to Faculty, and graduated institution variables (p, .05).

By using the Formula of ‘Point Interval= (Highest Value-Lowest Value)/7’, following interval categorization was used for deciding on the arithmetical mean intervals related to self-regulatory learning strategies and self-efficacy perceptions of the students.


**Time and study environment management** – **Self-efficacy:** 8-14.86= Very Low, 14.87-21.71= Quite Low, 21.72-28.57= Low, 28.58-35.43= Moderate, 35.44-42.29= High, 42.30-49.14= Quite High, 49.15-56= Very High

**Effort regulation** – **Help seeking:** 4-7.43= Very Low, 7.44-10.86= Quite Low, 10.87-14.29= Low, 14.30-17.71= Moderate, 17.72-21.14= High, 21.15-24.57= Quite High, 24.58-28= Very High

**Self-regulation (General):** 35-65= Very Low, 66-95= Quite Low, 96-125= Low, 126-155= Moderate, 156-185= High, 186-215= Quite High, 216-245= Very High

3. Findings

The arithmetic mean and standard deviation scores related to the perceptions of university students on self-regulated strategies and self-efficacy are presented in Table 2.

Table 2. The arithmetic mean and standard deviation scores related to the self-regulated strategies and self-efficacy scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive self-regulation</td>
<td>310</td>
<td>47.66</td>
<td>12.95</td>
</tr>
<tr>
<td>Time and study environment management</td>
<td>310</td>
<td>35.41</td>
<td>6.34</td>
</tr>
<tr>
<td>Effort regulation</td>
<td>310</td>
<td>19.60</td>
<td>4.63</td>
</tr>
<tr>
<td>Help seeking</td>
<td>310</td>
<td>20.14</td>
<td>4.68</td>
</tr>
<tr>
<td>Self-regulation</td>
<td>310</td>
<td>122.82</td>
<td>19.14</td>
</tr>
</tbody>
</table>
As can be seen in table 2, the metacognitive self-regulation skills of the university students were found as $\bar{X}=47.66$, time and study environment skills were found as $\bar{X}=35.66$, effort regulation skills were found as $\bar{X}=19.60$, and help-seeking skills were found as $\bar{X}=20.14$. The means of the self-regulated skills and self-efficacy skills were found as 122.82 and 35.37 respectively. It could be argued that the metacognitive self-regulation and time and study environment skills and self-regulation perceptions are in medium level, while effort regulation and help seeking skills are in high level. Overall self-regulation skills could be said to below.

Independent t-test was conducted to find the differences between university students’ self-regulated learning strategies and self-efficacy perceptions in terms of gender. The results are presented in Table 3.

Table 3. The differences between the students’ self-regulated learning strategies and self-efficacy perceptions in terms of gender variable

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>S.D.</th>
<th>Male</th>
<th>S.D.</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive self-regulation</td>
<td>49.66</td>
<td>12.25</td>
<td>42.00</td>
<td>13.27</td>
<td>4.733</td>
<td>.00</td>
</tr>
<tr>
<td>Time and study environment management</td>
<td>35.61</td>
<td>6.24</td>
<td>34.85</td>
<td>6.61</td>
<td>.927</td>
<td>.36</td>
</tr>
<tr>
<td>Effort regulation</td>
<td>19.17</td>
<td>4.58</td>
<td>20.83</td>
<td>4.60</td>
<td>-2.796</td>
<td>.01</td>
</tr>
<tr>
<td>Help seeking</td>
<td>19.78</td>
<td>4.54</td>
<td>21.16</td>
<td>4.94</td>
<td>-2.304</td>
<td>.02</td>
</tr>
<tr>
<td>Self-regulation (General)</td>
<td>124.22</td>
<td>19.27</td>
<td>118.84</td>
<td>18.30</td>
<td>2.189</td>
<td>.03</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>36.11</td>
<td>8.45</td>
<td>33.26</td>
<td>8.82</td>
<td>2.583</td>
<td>.01</td>
</tr>
</tbody>
</table>

Significant differences were found between the perceptions of female and male students on the metacognitive self-regulated learning strategies ($t=4.733$, $p<.05$), effort regulation ($t=-2.796$, $p<.05$) and help seeking ($t=-2.189$, $p<.05$) sub dimensions. Significant differences were found between the perceptions of overall self-regulated learning strategies ($t=-2.189$, $p<.05$) and self-efficacy perceptions ($t=-2.583$, $p<.05$). No significant differences were found between male and female students related to the time and study environment management sub dimension ($t=.927$, $p>.05$).

The arithmetic mean and standard deviation scores related to the perceptions of university students on self-regulated strategies and self-efficacy are presented in Table 4:

Table 4. The differences between the students’ self-regulated learning strategies and self-efficacy perceptions in terms of faculty variable

<table>
<thead>
<tr>
<th></th>
<th>Fac. of Education</th>
<th>S.D.</th>
<th>Fac. of Health</th>
<th>S.D.</th>
<th>Fac. of Agriculture</th>
<th>S.D.</th>
<th>F</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive self-regulation</td>
<td>48.41</td>
<td>14.19</td>
<td>47.25</td>
<td>12.19</td>
<td>46.34</td>
<td>11.02</td>
<td>.49</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td>Time and study environment management</td>
<td>37.08</td>
<td>6.12</td>
<td>35.17</td>
<td>6.37</td>
<td>31.38</td>
<td>4.89</td>
<td>17.14</td>
<td>.00</td>
<td>1-2, 1-3, 2-3</td>
</tr>
<tr>
<td>Effort regulation</td>
<td>21.83</td>
<td>4.59</td>
<td>17.67</td>
<td>3.40</td>
<td>17.82</td>
<td>4.48</td>
<td>37.44</td>
<td>.00</td>
<td>1-2, 1-3</td>
</tr>
<tr>
<td>Help seeking</td>
<td>22.01</td>
<td>4.40</td>
<td>18.46</td>
<td>3.92</td>
<td>18.79</td>
<td>5.13</td>
<td>24.14</td>
<td>.00</td>
<td>1-2, 1-3</td>
</tr>
<tr>
<td>Self-regulation (General)</td>
<td>129.33</td>
<td>18.01</td>
<td>118.55</td>
<td>18.10</td>
<td>114.54</td>
<td>18.84</td>
<td>17.69</td>
<td>.00</td>
<td>1-2, 1-3</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>36.37</td>
<td>8.62</td>
<td>34.62</td>
<td>8.62</td>
<td>34.68</td>
<td>8.48</td>
<td>5.40</td>
<td>.01</td>
<td>1-3</td>
</tr>
</tbody>
</table>

No significant differences were found between the education faculty, health sciences faculty and agriculture faculty students related to the metacognitive self-regulation sub dimension ($F=.49$, $p>.05$). Significant differences were found between education faculty, health sciences faculty and agriculture faculty students related to the time and study environment management sub dimension ($F=17.14$, $p<.05$). Scheffe post-hoc test was conducted to find in which groups the differences were found. The results showed that the differences were found between education faculty, health sciences faculty and agriculture faculty students in favor of education faculty students. The differences were found between education faculty students, health sciences faculty and agriculture faculty students in favor of education faculty students. The differences between education faculty students, health sciences faculty and agriculture faculty students are in favor of education faculty. Meaningful differences were found in help seeking sub dimension in terms of faculty variable ($F=24.14$, $p<.05$). Differences between education faculty, health sciences and agriculture faculty students were found in favor of education faculty students. In general meaningful differences between education, health sciences and agriculture faculty students in terms of self-regulated learning strategies ($F=17.69$, $p<.05$). The differences between education, health sciences and agriculture faculty students are in favor of education faculty.
students. Meaningful differences were found in the self-efficacy perceptions of students in terms of the faculty variable (F=5.40, p<.05). The differences between education faculty and agriculture faculty students are in favor of education faculty students.

4. Results and Conclusion

The findings showed that the perceptions of the university students on the metacognitive self-regulation, time and study environment managements skills, and self-efficacy are found to be in average level, effort regulation and help seeking skills were found to be high and overall self-regulated skills were found to be low. In Fettahhoğlu’s (2011) study on science teacher candidates, the metacognitive self-regulation, time and study environment management, effort regulation and help seeking skills were found to be on average level.

Meaningful differences were found between female and male students related to the meta-cognitive self-regulation, effort regulation and help seeking sub dimensions of self-regulation and overall between self-regulation skills and self-efficacy perceptions. The metacognitive self-regulation skills, overall self-regulation skills and self-efficacy perceptions of female students were found to be higher than those of male students. The effort regulation and help seeking skills of male students were found to be higher than those of female students. The differences between female and male students were found only in time and study environment management sub dimension. Alç and Altun (2007) in their study on high school students found significant differences between metacognitive and self-regulation skills in favor of female students. Miller (2000) in his study on high school students and Peklaj and Pecjak (2002) on their study on secondary school students found that the female students had higher metacognitive self-regulation skills compared to male students. Pajares and Graham (1999) in their study on 6th grade students found no differences between female and male students in terms of self-regulation skills. Fettahhoğlu (2011) found that gender was not an important factor for self-regulation skills of science teacher candidates.

Meaningful differences were found between education, health sciences and agriculture faculty students in terms of time and study environment management, effort regulation, help seeking and overall self-regulation skills in favor of education faculty students. Meaningful differences were found between education and agriculture faculty students in terms of self-efficacy perceptions. No significant differences were found in the dimension of metacognitive self-regulation. It could be argued because that the education faculty students are more ready for teaching profession compared to health sciences and agriculture faculty students, their self-regulated skills and self-efficacy perceptions were found to be higher.

No significant differences were found between the metacognitive self-regulation, time and study environment management, effort regulation, help seeking and overall self-regulation skills and self-efficacy perceptions of university students in terms of high school variable.

Based on the findings of the study the following suggestions could be made:

1. In-service training could be offered for academics, university students to help them improve their self-regulation skills.
2. Activities which aim at improving students’ metacognitive self-regulation, time and study environment management, effort regulation and help seeking skills could be undertaken.
3. Similar studies could be conducted in different universities, faculties or in lessons.

References


