Review of Psychology,
2007, Vol. 14, No. 1, 35-42 UDC 159.9

Relations among motivational components of strategic reading in university students

SVJETLANA KOLIĆ-VEHOVEC, BARBARA RONČEVIĆ and IGOR BAJŠANSKI

The aim of this study was to explore the relationship between the motivational components of self-regulated learning, i.e. value of studying, perceived abilities and perceived effort, goal orientation (mastery, performance and work-avoidance) and perceived use of reading strategies. Two path models were proposed, one with the elaboration strategy and the other with monitoring and regulation strategies as outcome variables. The value of studying and perceived ability predicted the use of reading strategies through goal orientation and perceived effort, directly and indirectly. The results showed that the value of studying affected the use of elaboration and monitoring and regulation strategies equally, and its impact was stronger than the impact of perceived ability. Perceived ability had a stronger effect on the use of elaboration strategies than on the use of monitoring and regulation. Also, the mediational effect of mastery orientation was stronger for the use of elaboration strategies than for the use of monitoring and regulation strategies. Work-avoidance and performance goal orientations affected the perceived effort, which predicted the use of monitoring and regulation strategies, and did not predict the use of elaboration strategies.

Key words: self-regulation, goal orientation, reading strategies, value of studying, perceived ability

Self-regulation refers to the "self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals" (Zimmerman, 2000, p.14). This approach to learning emphasizes students' autonomy and control in monitoring, directing, and regulating actions towards learning goals, expanding expertise, and self-improvement. The self-perception of a person as a student and the use of different strategies for the regulation of learning are critical factors in school achievement. Self-regulated students monitor the efficacy of their learning strategies and they react in different ways, including changes in self-perception and the replacement of a current strategy with a different one.

An important type of strategic behavior, necessary for successful schooling and studying, is strategic reading. Paris, Wasik and Turner (1996) describe reading strategies as "tactics readers use to engage and comprehend text" (p. 610). Two types of reading strategies have been identified, cognitive and metacognitive. Cognitive strategies involve all those actions that assist students in constructing meaning from the text. Readers actively construct the meaning while reading by using different strategies such as identifying main ideas, integrating information across text, connecting textual information with previous knowledge and generating inferences. Metacognitive reading strategies refer to students' deliberate and conscious action to monitor their comprehension and to regulate activities according to their reading goal (Baker & Brown, 1984). It has been found that readers who use reading strategies efficiently (Kozminsky & Kozminsky, 2001) and who perceive that they use reading strategies more frequently understand the text better (Kolić-Vehovec & Bajšanski, 2006) and have a higher academic achievement (Taraban, Rynerason, & Kerr, 2000). Reading strategies are particularly important in text comprehension when familiarity with the text is low (Scardamalia & Bereiter, 1984). Studying at the college level typically requires reading and learning from challenging academic texts.

There are different explanations for the motivational basis of self-regulated learning. Atkinson's expectancy-value model (1964) proposed that expectancy and task value are the most important predictors of achievement behavior. Eccles and Wigfield (Eccles et al., 1983; Wigfield & Eccles, 1992; 2000) conceptualized expectancy as student's ability beliefs and the perception of the task difficulty. Ability beliefs are defined as individual's perception of his or her current competence in a given activity. In their empirical research, Eccles and Wigfield (see Wigfield & Eccles, 2000) found that, even when previous performance is controlled, children's beliefs about their ability and their expectancy of

Svjetlana Kolić-Vehovec, University of Rijeka, Faculty of Art and Sciences, Department of Psychology, Slavka Krautzeka bb, 51000 Rijeka, Croatia. E-mail: skolic@ffri.hr (the address for correspondence);

Barbara Rončević, Department of Psychology, University of Rijeka;

Igor Bajšanski, Department of Psychology, University of Rijeka.

success are the best predictors of subsequent grades. Task-specific ability beliefs can be compared to related constructs in the literature. Harter's concept of the self-perception of competence (Harter, 1985) is defined as students' self-evaluative judgments about their ability to accomplish certain tasks. Bandura (1986) examined the role of students' perception of competence in his self-efficacy theory. Self-efficacy is defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p. 391). This is a more specific and situational view of the perceived competence.

Eccles and Wigfield (Eccles et al., 1983; Wigfield & Eccles, 1992) define the achievement task value in terms of three components. The first is the attainment value that is related to the importance of doing well on the task. The second intrinsic value refers to the enjoyment people experience when doing a task or to their subjective interest in the content of a task. The third component is the utility value or usefulness of the task in terms of their future goals. They found that these value components are positively related to the expectancy component, so that students tend to value those activities in which they think they do well and vice-versa (Eccles & Wigfield, 1995). Bruinsma (2004) found that university students' expectancy and task value had a positive influence on their academic achievement and the use of deep information processing strategies.

The expectancy of outcome and the expectancy of self-efficacy motivate a person to achieve specific goals and enable him/her to remain active during that process (Bandura, 1986; Schunk, 1989). Students who have precise goals have an opportunity to experience self-efficacy after the accomplishment of these goals. They can also be engaged in activities leading to goal fulfillment: they are attentive during lectures, they rehearse and work hard. Self-efficacy is strengthened as students experience goal progress, which indicates that they are becoming skillful (Elliot & Dweck, 1988).

Goal orientation reflects types of standards that a person uses to judge his or her performance or success (Ames, 1992). That judgment influences other motivational beliefs, as well as actual performance. Although named differently, theorists have described two main goal orientations: learning and performance goals (Elliot & Dweck, 1988), task-involved and ego-involved goals (Nicholls, 1984), mastery and performance goals (Ames, 1992), and task-focused and ability-focused goals (Maehr & Midgley, 1991). Students who adopt a mastery goal orientation are focused on mastering the task, developing new skills, and improving competence and comprehension. Students who adopt a performance goal orientation are focused on their ability compared to other students' abilities, on obtaining better grades than other students, and on social approval of their achievements.

Some authors (Meece, Blumenfeld, & Hoyle, 1988; Nicholls, Patashnick, & Nolen, 1985) identify an additional goal orientation, work-avoidance orientation. Students who adopt this goal orientation are focused on performing tasks as soon as possible with minimal effort. Some authors identify yet another avoidance orientation, labeled performance-avoidance orientation (Elliot & Church, 1997; Middleton & Midgley, 1997). Individuals having this orientation strive to avoid unfavorable judgments of their competence. Elliot and Church (1997) found that a perceived low ability was an antecedent to performance-avoidance goals linked to the fear of failure. Middleton and Midgley (1997) suggested that the aim of performance-avoidance orientation is to avoid the demonstration of the lack of ability, whereas work-avoidance orientation is aimed at the effort reduction and stems mainly from students' perceptions that studying is a useless or uninteresting activity. Factor analysis in our previous studies with high school students (Kolić-Vehovec, Rončević, & Bajšanski, 2005; Rupčić & Kolić-Vehovec, 2004) showed that performance-approach and performance-avoidance goal orientations were not differentiated as distinct goal orientations, whereas work-avoidance goal orientation was extracted as a separate factor.

Compared to the performance and work-avoidance goal orientation mastery goal orientation leads to a more cognitive engagement, especially to the use of deeper processing strategies and self-regulated learning strategies. Both, high school (Niemivirta, 1996; Nolen & Haladyna, 1990) and university, students (Somuncuoglu & Yildirim, 1999; Valle, Cabanach, Nunez, Gonzalez-Pienda, Rodriguez, & Pineiro, 2003) adopting mastery goals report the use of elaboration and comprehension monitoring strategies more often than other students do. Graham and Golan (1991) found that these students also showed better actual performance on learning tasks than students adopting performance goal orientation. Rupčić and Kolić-Vehovec (2004) also found a positive relation between the mastery goal orientation and the school achievement among high-school students.

Although the important advantages of adopting a mastery goal orientation have been well documented, several studies have also found the benefits of performance goal orientation in college students (Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Harackiewicz, Barron, & Elliot, 1998). The authors suggest that performance goals can complement the positive effects of mastery goals, and, together, they promote the optimal motivation and have a positive effect on one's performance. When mastery goals are coupled with performance goals, students have a desire to master material and increase competence and at the same time to outperform others in the classroom.

The aim of this study was to explore the relation between the motivational components of the self-regulated learning, i.e. value of studying, perceived abilities and perceived effort, goal orientation (mastery, performance and work-avoidance) and perceived use of reading strategies as an important category of deep learning strategies in university students. Two path models were proposed, one with the

use of elaboration strategy and the other with the monitoring and regulation strategies as outcome variables. Both of these two types of strategies reflect self-regulated reading, yet they refer to different kinds of strategic behaviour. We wanted to examine whether there would be different effects of motivational variables on elaboration as a cognitive, and monitoring and regulation as a metacognitive strategie.

Both path models propose that the value of studying and the perceived ability would predict the use of reading strategies through goal orientation and effort, directly and indirectly. It was hypothesized that the value of studying and the perceived ability would affect the achievement goals which students adopt. This prediction is proposed according to the expectancy-value model of Eccles and colleagues (Eccles et al., 1983; Wigfield & Eccles, 2000), and Elliot's (1999) revision of the achievement goal theory. Simons, DeWitte and Lens (2000) found that college students perceiving the utility or the instrumentality of a given task for self-set future goals adopted mastery goals, whereas those perceiving instrumentality of a task for the assigned future goals adopted performance goals. The effect of competence perception and personally valued goals on proximal achievement goals was also proposed in the model of Miller and Brickman (2004). They predicted a direct relationship of the perceived instrumentality to the mastery and performance goals. Greene, Miller, Crowson, Duke and Akey (2004) obtained the support for this model in a study with high-school students. Since work-avoidance goal orientation is pursued by students who perceive studying as a useless or uninteresting activity (Middleton & Midgley, 1997) which is often associated with the perceived low ability (Niemivirta, 1996), a negative effect of the value of studying and perceived ability on work-avoidance orientation is also predicted in our model. Previous studies with high school students (Kolić-Vehovec, Rončević, & Bajšanski, 2005; Niemivirta, 1996) have shown that the mastery and work-avoidance goal orientations were negatively related and, therefore, it was predicted that the adoption of mastery orientation would negatively affect the adoption of a work-avoidance orientation in university students.

The models propose that the value of studying and the perceived ability predict the use of reading strategies as a category of deep learning strategies. The effect of perceived ability on deep cognitive strategy use was well documented in different age groups (Ames & Archer, 1988; Greene & Miller, 1996; Meece et al., 1988; Miller, Behrens, Greene, & Newman, 1993; Pintrich & DeGroot, 1990; Zimmerman & Martinez-Pons, 1992). It has also been documented that the subjective task value of the achievement tasks represents an important incentive for task engagement (Eccles et al., 1983; Miller, DeBecker, & Greene, 1999; Wigfield & Eccles, 2000). Research also demonstrated that students wanting to improve their mastery use deep processing strategies (e.g. Greene & Miller, 1996; Meece, Blumenfeldt & Hoyle 1988; Pintrich & Garcia, 1991). Compared to the mastery goals, performance goals have been associated with the greater use of shallow processing strategies demanding a low cognitive engagement (e.g. Greene & Miller, 1996; Meece & Holt, 1993; Meece, Blumenfeldt & Hoyle 1988; Pintrich & Garcia, 1991). However, performance goals have also been accompanied by more active, effort demanding, but superficial cognitive activities, like rote learning (Niemivirta, 1996), as opposed to the work-avoidance goals which are aimed at effort reduction (Middleton & Midgley, 1997). Therefore, our model depicts performance goal orientation as positively affecting effort, and work-avoidance orientation as negatively affecting effort, which in turn has a positive effect on reading strategy use.

METHOD

Participants

The participants were 288 undergraduate students (age range from 18 to 24 years) from the University of Rijeka, Croatia. There were 33 male and 255 female participants from all four undergraduate years and from different departments (Croatian language, English language, Psychology, Education, Mathematics, Physics).

Instruments

The Components of Self-Regulted Learning (CSRL, Niemivirta, 1996, 1998). A Croatian version of the self-report questionnaire CSRL (Rijavec & Brdar, 2002) was applied. It includes several subscales assessing goal orientation, value of studying, perceived ability and perceived effort. Participants rated each item on a 5-point Likert scale ranging from totally disagree (1) to totally agree (5).

Goal orientation was assessed by three 5-item scales:

Mastery (learning) orientation refers to the extent to which students are focused on mastering the task and developing new skills (e.g., *"I feel satisfied when I learn something new at the university"*). Internal consistency of the scale (Cronbach alpha) on our sample was .75.

Performance orientation refers to the extent to which students are focused on obtaining better grades than other students, and on the social approval of their achievements (e.g., *"I feel satisfied when I do better than other students"*). Cronbach's alpha coefficient for the scale was .76.

Work-avoidance orientation refers to the extent to which students are focused on performing tasks as soon as possible with minimal effort (e.g., *"I feel satisfied when I don't have to work hard at the university"*). Cronbach's alpha for this scale was .77.

Value of studying was assessed by a 6-item scale measuring the extent to which students believe that studying and

attending university courses is useful, interesting and important (*e.g., "In my opinion, things to be learned at university are important"*). Cronbach's alpha for this scale was .81.

Perceived ability was assessed by a 4-item scale measuring the extent to which students believe that they possess adequate abilities for accomplishing academic tasks (e.g., *"I have the ability to learn for courses at the university"*). This is the core aspect of self-efficacy. Cronbach's alpha for this scale was .63.

Perceived effort was assessed by a 4-item subscale measuring the extent to which students rely on their effort in accomplishing academic tasks (e.g., *"I try hard at the university courses"*). Cronbach's alpha for this scale was .71.

The Strategic Reading Questionnaire (SRQ, Kolić-Vehovec & Bajšanski, 2001). Perceived frequency of the strategy use during reading was assessed using the abbreviated version of SRQ. The scale consisted of two subscales, the perceived use of elaboration strategies (8 items, e.g. *"*During reading, I periodically stop and think about the important information in the text*"*), and the perceived use of monitoring and regulation strategies (5 items, e.g. *"*I reread parts of the text I have not understood well*"*). Cronbach alpha coefficients were.77, and .78, respectively. Participants were asked to rate how often have they used different reading strategies on a 5-point Likert type scale, ranging from 1 (never) to 5 (always). Scores on the SRQ have been shown to correlate positively with reading comprehension and comprehension monitoring scores in students of both, higher grades of elementary school and in high school (Kolić-Vehovec & Bajšanski, 2006).

Procedure

Data was gathered in the middle of the winter semester. Participants completed the questionnaires in a one hour session. They were each given a booklet containing instructions and questionnaires and have responded to the questionnaires anonymously.

RESULTS

Correlations between different components of self-regulated learning and the perceived use of reading strategies are shown in Table 1. The perceived uses of elaboration strategy, as well as monitoring and regulation strategy, were positively related to mastery and negatively related to work-avoidance goal orientation. Also, both of these strategies were positively, although weakly correlated to values of studying, perceived ability and perceived effort. Value of studying was moderately positively related to mastery goal orientation and negatively to work-avoidance orientation. Perceived ability had low correlations with mastery and performance orientation. Performance goal orientation had lower correlations with perceived value of studying than did other two goal orientations, and had no correlations with the use of reading strategy. Perceived effort had significant relations to all of the motivational variables and to the use of reading strategy. The highest correlations were found with the perceived value of studying and negative relation with the work-avoidance orientation.

To test the relationship between the motivational components of self-regulated learning, goal orientation and perceived use of reading strategies, path analyses were performed. Two models were tested, one for each sub-scale of SRQ as an outcome variable. Detailed description of the models can be found in the introduction. The analyses were conducted on a covariance matrix and estimates were made by the Maximum Likelihood method. The path models were tested with a LISREL analysis (Jöreskog & Sörbom, 1993). To evaluate the models, multiple fit indices were used to indicate the fit of the models to the data. In addition to chi-squares as a measure of overall fit, the SRMR, RMSEA, CFI and GFI were also used. Sivo, Fan, Witta and Willse (2006) found that optimal cut-off values for correct models may vary considerably, depending on the sample size. The optimal cut-off values for the size of our sample for SRMR was.10, for RMSEA .05, for CFI .97 and for GFI .93. Fit indices of the first model with elaboration strategies as an outcome variable were: χ^2 (7, N = 285) = 11.90, $p > .05$; SRMR = .03; RMSEA = .06; CFI = .98; GFI = .99. The values of SRMR, CFI and GFI for this model are optimal and close to optimal for RMSEA. The hypothesized model seemed to fit the data reasonably well.

Table 1

Means, standard deviations and correlations of goal orientations, motivational components of self regulated learning and perceived use of reading strategies

	M	*SD*	1	2	3	4	5	6	7
Goal orientation									
1. Mastery	19.59	3.05							
2. Performance	14.91	4.16	.11						
3. Work-avoidance	16.48	4.27	-.36**	.06					
4. Values	23.31	4.10	.51**	.14*	-.44**				
5. Perceived ability	17.13	2.15	.25**	.12*	-.02	.22**			
6. Perceived effort	12.27	3.40	.20**	.16*	-.50**	.35**	.14*		
7. Elaboration strategies	30.22	4.32	.34**	.07	-.17**	.27**	.26**	.21**	
8. Monitoring and regulation	20.39	3.08	.23**	.00	-.156*	.27**	.17*	.21**	.55**

Note. *p<.05; **p<.01.

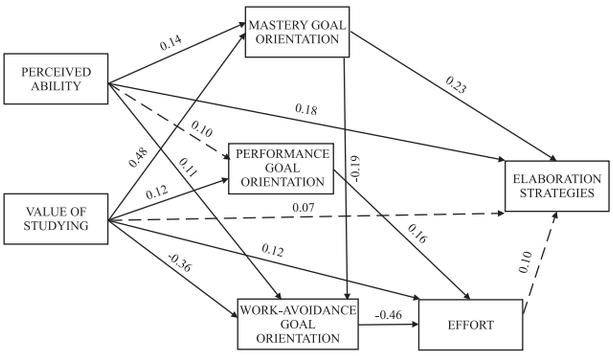

Figure 1. Path model of the relation between motivational variables and elaboration strategies (standardized path coefficients)
Note. Dashed lines indicate insignificant paths and full lines indicate significant paths at $p<.05$.

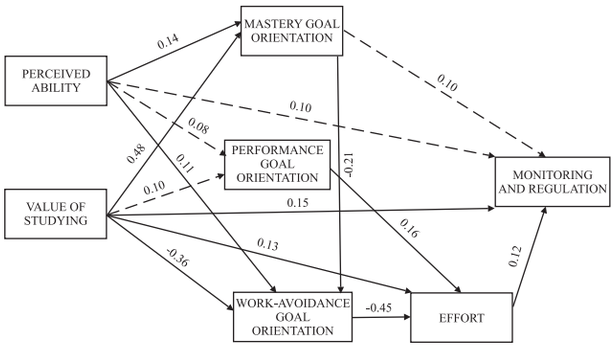

Figure 2. Path model of the relation between motivational variables and monitoring and regulation (standardized path coefficients)
Note. Dashed lines indicate insignificant paths and full lines indicate significant paths at $p<.05$.

As Figure 1 shows, the majority of hypothesized paths were confirmed by the data obtained, except for the paths from the perceived value of studying to the perceived use of elaboration strategies, from the perceived ability to the performance goal orientation, and from the perceived effort to the elaboration strategies. Value of studying had a significant direct positive effect on the mastery goal orientation (.48), performance orientation (.12), perceived effort (.12), and a significant negative effect on the work-avoidance goal orientation (-.36). Total effect of the value of studying on the perceived use of elaboration strategies through mastery, performance and work-avoidance orientation, and effort was .22. Perceived ability had a significant direct positive effect on the mastery goal orientation (.14), and on the work-avoidance orientation (.11). Perceived ability also had a significant direct effect on the perceived use of elaboration strategies (.18), and total effect, including direct and indirect effect, through goal orientations (.21). Mastery goal orientation had a total positive effect on the perceived use of elaboration strategies (.24). Performance goal orientation had a positive effect (.16) and work-avoidance goal orientation had a negative effect (-.46) on the perceived effort. However, the perceived effort had no significant effect on the perceived use of elaboration strategies.

Fit indices of the second model with monitoring and regulation as outcome variables were: χ^2 (7, N = 288) = 11.45, $p > .05$; SRMR = .03; RMSEA = .06; CFI = .98; GFI = .99. The values of SRMR, CFI and GFI for this model are optimal, and close to optimal for RMSEA. The hypothesized model seemed to fit the data reasonably well.

As Figure 2 shows, in the model with monitoring and regulation as outcome variable most of the hypothesized paths were confirmed as in the first model, except for the paths from perceived value of studying to the performance goal orientation, from the perceived ability to the performance goal orientation and use of monitoring and regulation, and from the mastery goal orientation to the monitoring and regulation strategies. The value of studying had a significant direct positive effect on the mastery goal orientation (.48), on the perceived effort (.13) and on the monitoring and regulation strategies (.15), as well as a significant negative effect on the work-avoidance goal orientation (-.36). The total effect of the value of studying on the perceived use of monitoring and regulation strategies through goal orientations and effort was .25. The perceived ability had a significant direct positive effect on the mastery goal orientation (.14), and the work-avoidance orientation (.11). Perceived ability's total effect on the perceived use of monitoring and regulation was .11. Total effect of the mastery goal orientation on monitoring and regulation was .12. Performance goal orientation had a positive effect (.16), and work-avoidance goal orientation had a negative effect (-.45) on the perceived effort. Perceived effort had a significant total effect on the perceived use of monitoring and regulation strategies (.12).

DISCUSSION

The main assumption of this study was that the value of studying and perceived ability could predict the use of reading strategies through goal orientation and perceived effort, directly and indirectly. The results showed that the value of studying had almost equally affected the use of elaboration strategies, and monitoring and regulation strategies. This impact was stronger than the impact of the perceived ability. However, the perceived ability had a stronger effect on the use of elaboration strategies than on the use of monitoring and regulation strategy. Also, the mediational effect of the mastery orientation on the use of elaboration strategies was stronger than on use of the monitoring and regulation

strategies. The effects of work-avoidance and performance goal orientations on the use of monitoring and regulation strategies through effort were weak.

The results confirmed our assumption that students' beliefs about studying and its value influence the adoption of a goal orientation. Value of studying had a strong positive effect on mastery orientation and a negative effect on work-avoidance orientation, meaning that students who perceive their studying as useful, interesting and important are more likely to adopt a mastery goal orientation, whereas students who perceive their studying as boring, unimportant and useless will probably adopt a work-avoidance goal orientation. When high school students perceive a task as instrumental because of the importance of the skills and knowledge inherent in the task, they are more likely to adopt a mastery goal (Greene et al., 2004). Meece et al. (1988) note that students might adopt a work-avoidance goal orientation as a way of expressing their negative attitudes towards schoolwork, avoiding failure, or coping with the constraints and demands of the learning situation. Value of studying had a very weak effect on the performance goal orientation. Greene et al. (2004) also did not find the effect of value of studying on the performance goal orientation in high school students. It is possible that values other than the value of studying could be important in adopting performance goal orientation such as getting a university degree (Miller & Brickman, 2004). As most studies have found that high performance goal orientation is usually accompanied by some form of mastery or work-avoidance goal orientations (Meece & Holt, 1993; Niemivirta, 1996), students with various combination of performance and other goals could value studying at university differently.

As opposed to the value of study that had substantial effects on mastery and work-avoidance orientation, students' perceived ability had weak effects on all goal orientations. Although weak, the proposed path from ability to mastery goal orientation was significant and positive. Students perceiving themselves as academically competent tend to adopt mastery goals and engage in activities that allow them to satisfy their needs for competence and mastery (Harter, 1985). However, contrary to our prediction, adoption of work-avoidance goal had a weak positive relation to the perceived ability. Such a finding could be the consequence of the high perceived ability of students in our sample and the low variability of this variable.

Whereas mastery and work-avoidance goals were mainly predicted by students' value of studying, our results showed that performance goal orientation was not consistently related to the value of studying and it is not related to the perceived ability. Some studies with high school students (Guttman, 2006; Wolters, 2004) showed that adoption of the performance goal orientation is also linked to the parents' goal orientation and perceived classroom goal structure, and such external factors could be even more important in goal adoption than are internal factors such as the value of studying and perceived ability.

As our model predicted, the perceived value of studying, as well as the performance and work-avoidance goal orientation influenced perceived effort. As Wigfield and Eccles (2000) have noted, the perceived task value is an important determinant of the decision to become engaged in a task. When students perceive their studying as unimportant and useless they adopt a work-avoidance goal orientation and are less prone to engage effort. This effect appeared to be stronger than the direct effect of positive values on engagement of the effort. Performance goals were weakly related to putting effort in studying. Elliot, McGregor and Gable (1999) obtained similar results in college students and argued that the effect of a performance goal orientation on the effort is restricted to a normative evaluative educational context. Such an educational context will also instigate the effect of performance orientation on employment of superficial cognitive activities.

Finally, our models showed different effects of motivational variables on the use of elaboration strategies and monitoring and regulation. The use of elaboration strategies was more affected by motivational variables than the use of monitoring and regulation. The perceived ability and mastery goal orientation were the most important predictors of the use of elaboration strategy. Students who perceive that they have high abilities are more prone to adopt mastery goal orientation, and will use deep processing strategies more frequently. Such a finding can be found in other studies of high school students (Greene et al., 2004; Wolters, 2004) and university students (Bruinsma, 2004). However, the perceived value of studying, and the work-avoidance orientation affected the use of monitoring and regulation strategies through effort. Students who valued the study and were interested in it were more prone to self-regulate their reading i.e., monitor the efficacy of their reading strategies and replace a current strategy with a different one. Perceived use of monitoring and regulation is influenced by the perceived effort. Strategic reading is a time-consuming and cognitively demanding activity, and it requires deliberate and active engagement. Contrary to our expectation, mastery goal orientation did not affect monitoring and regulation. This result raises the question of whether or not mastery orientation equally affects different strategic behavior leading to positive academic outcomes.

In summary, the results provide an empirical evidence for the distinct roles of different motivational components in self-regulated learning. University students' involvement in self-regulated learning is closely tied to their beliefs about the value of studying. Students believing that their academic work is interesting and important are more cognitively engaged in trying to comprehend and learn the material. This engagement is mediated by the adoption of a mastery goal orientation. Conversely, students who value studying less are more likely to adopt work-avoidance goal orientation and employ less effort. Readiness for exertion of effort affects self-regulation of reading. It would be of interest to

explore the relation between components of self-regulated learning in students in different educational settings which could have an impact on goal orientation adoption and specific strategic behavior.

REFERENCES

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*, 261-271.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, *80*, 260-267.

Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: Van Nostrand.

Baker, L., & Brown, A. L. (1984). Metacognitive skills and reading. In P. D. Pearson; R. Barr, M. L. Kamil, P. Mosenthal (Eds.), *Handbook of Reading Research*, (Vol. 1, pp. 353-394). Mahwah, NJ: Lawrence Erlbaum Associates.

Bandura, A. (1986). *Social foundation of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bruinsma, M. (2004). Motivation, cognitive processing and achievement in higher education. *Learning and Instruction*, *14*, 549-568.

Eccles, J. S., Adler, T. F., Futterman, C. A., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 75-146). San Francisco: Freeman.

Eccles, J. S., & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents' achievement task values and expectancy-related believes. *Personality and Social Psychology Bulletin*, *21*, 215-225.

Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, *34*, 169-189.

Elliot, E. S., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Educational Psychology*, *72*, 218-232.

Elliot, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*, 5-12.

Elliot, A. J., McGregor, H. A., & Gable, S. (1999). Achievement goals, study strategies, and exam performance: A mediational analysis. *Journal of Educational Psychology*, *91*, 549-563.

Graham, S., & Golan, S. (1991). Motivational influences on cognition: Task involvement, ego involvement, and depth of information processing. *Journal of Educational Psychology*, *83*, 187-194.

Greene, B. A., & Miller, R. B. (1996). Influences on course performance: Goals, perceived ability, and self-regulation. *Contemporary Educational Psychology*, *21*, 181-192.

Greene, B. A., Miller, R. B., Crowson, M., Duke, B. L., & Akey, K. L. (2004). Predicting high school students' cognitive engagement and achievement: Contributions of classroom perceptions and motivation. *Contemporary Educational Psychology*, *29*, 462-482.

Guttman, L. M. (2006). How student and parent goal orientations and classroom goal structures influence the math achievement of African Americans during the high school transition. *Contemporary Educational Psychology*, *31*, 44-63.

Harackiewicz, J. M., Barron, K. E, Carter, S. M., Lehto, A.T., & Elliot, A. J. (1997). Predictors and consequences of achievement goals in the college classroom: Maintaining interest and making the grade. *Journal of Personality & Social Psychology*, *73*, 1284-1295.

Harackiewicz, J. M., Barron, K. E., & Elliot, A. J. (1998). Rethinking achievement goals: When are they adaptive for college students and why? *Educational Psychologist*, *33*, 1-21.

Harter, S. (1985). Competence as dimension of self-evaluation: Toward a comprehensive model of self-worth. In R. Leahy (Ed.), *The development of the self* (pp. 55-121). New York: Academic Press.

Kolić-Vehovec, S., & Bajšanski, I. (2001). Konstrukcija upitnika strategijskog čitanja (The construction of Strategic Reading Questionnaire). *Psihologijske teme*, *10*, 51-62.

Kolić-Vehovec, S., & Bajšanski, I. (2006). Razvojne promjene u metakogniciji I razumijevanju pri čitanju [Developmental changes in metacognition and reading comprehension]. *Društvena istraživanja*, *15*, 1005-1027.

Kolić-Vehovec, S., Rončević, B., & Bajšanski, I. (2005, August). *Goal orientation, learning strategies, and academic achievement in high-school students: The role of perceived school and parent goal orientation.* Paper presented at 11th Biennial Conference of EARLI, Nicosia, Cyprus.

Kozminsky, E., & Kozminsky, L. (2001). How do general knowledge and reading strategies ability relate to reading comprehension of high school students at different educational levels? *Journal of Research in Reading*, *24*, 187-204.

Maehr, M. L., & Midgley, C. (1991). Enhancing student motivation: A schoolwide approach. *Educational Psychologist*, *26*, 399-427.

Meece, J. L., Blumenfeld, P. C., & Hoyle, R. (1988). Students' goal orientations and cognitive engagement in

classroom activities. *Journal of Educational Psychology*, *80*, 514-523.

Meece, J. L., & Holt, K. (1993). A pattern analysis of students' achievement goals. *Journal of Educational Psychology*, *85*, 582-590.

Middleton, M. J., & Midgley, C. (1997). Avoiding the demonstration of lack of ability: An underexplored aspect of goal theory. *Journal of Educational Psychology*, *89*, 710-718.

Miller, R. B., Behrens, J. T., Greene, B. A., & Newman, D. (1993). Goals and perceived ability: Impact on student valuing, self-regulation and persistence. *Contemporary Educational Psychology*, *18*, 2-14.

Miller, R. B., & Brickman, S. A. (2004). A model of future oriented motivation and self-regulation. *Educational Psychology Review*, *16*, 9-33.

Miller, R. B., DeBacker, T. K., & Greene, B. A. (1999). Perceived instrumentality and academics: The link to task valuing. *Journal of Instructional Psychology*, *26*, 250-260.

Nicholls, J. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*, 328-346.

Nicholls, J., Patashnick, M., & Nolen, S. B. (1985). Adolescents' theories of education. *Journal of Educational Psychology*, *77*, 683-692.

Niemivirta, M. J. (1996, September). *Motivational-cognitive components in self-regulated learning.* Paper presented at the 5th International Conference on Motivation, Landau, Germany.

Niemivirta, M. J. (1998). Individual differences in motivational and cognitive factors affecting self-regulated learning: A pattern-oriented approach. In P. Nenniger, R. S. Jäger, A. Frey, & M. Wosnitza (Eds.), *Advances in motivation* (pp. 23-42). Landau:Verlag Empirische Pädagogik.

Nolen, S.B., & Haladyna, T.M. (1990). Personal and environmental influences on students' beliefs about effective study strategies. *Contemporary Educational Psychology*, *15*, 116-130.

Paris, S. G., Wasik, B. A., & Turner, J. C. (1996). The development of strategic readers. In R. Barr, M. L. Kamil, P. B. Mosenthal & P. D. Pearson (Eds.), *Handbook of Reading Research*, (Vol. 2, pp. 609-640). Mahwah, NJ: Lawrence Erlbaum Associates.

Pintrich, P. R., & DeGroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*, 33-40.

Pintrich, P. R., & Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement: Goals and self-regulatory processes*. Greenwich, CT: JAI Press.

Rijavec, M., & Brdar, I. (2002). Coping with school failure and self-regulated learning. *European Journal of Psychology of Education*, *17*, 177-194.

Rupčić, I., & Kolić-Vehovec, S. (2004). Ciljna orijentacija, samohendikepiranje i samoefikasnost srednjoškolaca [Goal orientation, self-handicapping and self efficacy in high-school students]. *Psihologijske teme*, *13*, 105-117.

Scardamalia, M., & Bereiter, C. (1984). Development of strategies in text processing. In H. Mandl, N. L. Stern & T. Trabasso (Eds.), *Learning and comprehension of text* (pp. 379-406). Hillsdale, NJ: LEA.

Schunk, D. H. (1989). Self-efficacy and achievement behaviors. *Educational Psychological Review*, *1*, 173-208.

Simons, J., Dewitte, S., & Lens, W. (2000). Wanting to have vs. wanted to be: The effect of perceived instrumentality on goal orientation. *British Journal of Psychology*, *91*, 335-351.

Sivo, S.A., Fan, X., Witta, E.L., & Willse, J.T. (2006). The search for "optimal" cutoff properties: Fit index criteria in structural equation modeling. *The Journal of Experimental Education*, *74*, 267–288.

Somuncuoglu, Y., & Yildirim, A. (1999). Relationship between achievement goal orientations and use of learning strategies. *The Journal of Educational Research*, *92*, 267-277.

Taraban, R., Rynerason, K., & Kerr, M. (2000). College students' academic performance and self-reports of comprehension strategy use. *Reading Psychology*, *21*, 283-308.

Valle, A., Cabanach, R. G., Nunez, J. C., Gonzalez-Pienda, J., Rodriguez, S., & Pineiro, I. (2003). Multiple goals, motivation and academic learning. *British Journal of Educational Psychology*, *73*, 71-87.

Wigfield, A., & Eccles, J. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review*, *12*, 265-310.

Wigfield, A., & Eccles, J. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, *25*, 68-81.

Wolters, C. A. (2004). Advancing achievement goal theory: Using goal structures and goal orientations to predict students' motivation, cognition and achievement. *Journal of Educational Psychology*, *96*, 236-250.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekarts, P. Pintrich & M. Zeidner (Eds.), *Self-regulation: Theory, research and applications* (pp. 13-39). Orlando, FL: Academic Press.

Zimmerman, B. J., & Martinez-Pons, M. (1992). Perceptions of efficacy and strategy use in the self-regulation of learning. In D. Schunk, and J. L. Meece (Eds.), *Student Perceptions in the Classroom*, (Ch. 8., pp. 185-207). Hillsdale, NJ: Lawrence Erlbaum Associates.