

## Motivational facets of self-regulated learning: self-efficacy as a predictor of resource management strategies in Iranian TEFL students

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**Abstract:** This study examined the contribution of self-efficacy and control of learning beliefs to the components of learning strategies of self-regulated learning in Iranian college students. The sample comprised 202 undergraduate EFL students. The shortened 37-item version of the Motivated Strategies for Learning Questionnaire was used to assess the constructs in this study. Pearson product-moment correlations revealed that control of learning beliefs and self-efficacy components of the MSLQ are strongly associated with each other, besides a significantly positive association with other components of self-regulated learning strategies. Stepwise multiple regression analyses showed that both self-efficacy and control of learning beliefs had significantly positive contribution to the prediction of cognitive strategy use in the Iranian collegiate learning environment. Self-efficacy was also found to be a significant predictor of resource management strategies. The results are consistent with the findings of the previous investigations on motivation and its influence on SRL strategies use in traditional classrooms.

**Key words:** Self-regulation; Self-regulated learning; Self-efficacy; Control of learning beliefs; Learning strategies; Motivational strategies; EFL

### 1. Introduction

Motivational Facets of Self-Regulated Learning: Self-efficacy as a Predictor of Resource Management Strategies in EFL Students.

The acquisition of self-regulatory skills in school and beyond is thought to be a sine qua non for successful and life-long learning and, ipso facto, self-regulated learners are successful at their academic endeavors (Pintrich and Schunk, 1996; Wolters and Pintrich, 1998). Self-efficacy, lying in the expectancy component of general expectancy-value model of motivation for self-regulated learning (Pintrich, Smith, 1993; Garcia and McKeachie, 1993), is believed to be a predictor of academic performance (e.g., Caprara, Vecchione, Alessandri, Gerbino and Barbaranelli, 2011; Zimmerman and Schunk, 2004) as social cognitive theorists think of self-regulation as dependent on students' self-efficacy (Bandura, 1991). In the same vein, Susimetsa (2006) stressed that self-efficacy plays a role in people's willingness to use self-regulatory strategies and to embark on an activity to their utmost capacities. Likewise, Schunk (2005) asserted that learners that are highly self-regulated are more likely to achieve higher academic self-efficacy than those with weaker self-regulatory skills.

### 2. Review of Literature

Self-Regulated Learning in Educational Psychology.

Broadly speaking, self-regulation refers to goal-directed behaviors in both conscious and unconscious alteration of responses by the self (Baumeister and Vohs, 2004; Schmeichel and Baumeister, 2004). Zimmerman (2000) defined self-regulation as "self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals" (p. 14). In academic settings, self-regulation is not considered as "a mental ability, such as intelligence, or an academic skill, such as reading proficiency; rather it is the self-directive process through which learners transfer their mental abilities into academic skills" (Zimmerman, 1998). Accordingly, self-regulated learning requires learners to be "met cognitively, motivationally, and behaviorally" self-active in the entire learning process (Zimmerman, 2001), and such learning largely results from "the influence of students' self-generated thoughts, feelings, strategies, and behaviors" (Schunk and Zimmerman, 1998).

Educational researchers have carried out research into students' self-efficacy in self-regulated learning. Pintrich and De Groot (1990) conducted a correlational research into the association between motivational orientation, self-regulated learning, and academic performances. The results revealed that students' self-efficacy and intrinsic value are significantly and positively correlated with their cognitive engagement and performance as more self-regulated ones reported more cognitive strategies

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and metacognitive strategies in the face of difficult educational tasks.

Zimmerman, Bandura and Martinez-Pons (1992) examined the effect of self-motivational factors in students' academic achievement. They reported that beliefs about self-efficacy for self-regulation in learning and the concomitant academic self-efficacy have an effect on students' academic goals and achievement. In other words, students that judge themselves as more capable set more challenging goals.

In a case study program, Cleary and Zimmerman (2004) presented the results of a cyclical model of academic self-regulation to highlight the primary processes and techniques used by a self-regulation coach, working with a 12-year-old Caucasian student. The training program much attended to the psychological side of the trainee and helped her take more responsibility for her learning, modify her beliefs and elevate her grades in school. Their study bore evidence that training programs will benefit more students and even educators when they are implemented concurrent with other academic interventions or social programs and when they consider all aspects of learners (affective, cognitive, motivational and cultural) and learning settings and self-regulation stages cannot be applied in a rigid way to every learning activity (Cleary and Zimmerman, 2004).

Artino and Stephens (2007) calculated the relationship between learners' motivation and their use of metacognitive and cognitive learning strategies in online courses. The results of Pearson correlations revealed that there is significant relationship between task value and self-efficacy and students' metacognitive learning strategies, critical thinking and use of elaboration. According to regression analyses, students' use of learning strategies can be significantly and positively predicted by task value and self-efficacy. The authors concluded that the research findings were in line with the literature on the relationship between motivational beliefs about an educational tasks and the use of SRL strategies in traditional classroom settings.

### 3. Self-regulated learning in SLA research

Although there is an abundance of research into SRL in general academic subjects, the number of studies into the contribution of control of learning beliefs and self-efficacy to L2 achievement is very limited (Hirata, 2010). Instructed second language acquisition is under the effect of individual differences since they have proved to correlate moderately or higher with the accumulation of language in academic settings (Dörnyei, 2005). However, in second language acquisition research, as Ellis (2009) has asserted, "the impact of ID factors" is investigated "only in terms of general measures of learners' proficiency or achievement (e.g. using standardized proficiency tests or teacher grades)." To bridge the gap, the self-regulation has recently

been the topic of second language acquisition research, if not rarely (Liu, 2008; Tseng, Dörnyei and Schmitt, 2006; Wang and Pape, 2004).

Most recently, Hirata (2010) explored the factor structures of motivation and SRL and the relationships among the identified factors. He found that self-efficacy, besides other motivational factors, was a significant predictor of SRL in general since while "instrumental mastery, performance orientation, and extrinsic value did not predict students' use of SRL" (p.i).

Liu (2008), among others, has purported that we can boost the self-regulatory capacity of EFL learners by empowering expectancy-value motivation on the account of the direct relationship between self-perceptions of one's language proficiency and achievement outcomes. In addition, Tseng, Dörnyei, and Schmitt (2006) argued for the validity of the transferability of self-regulation construct from educational psychology into the field of second language acquisition by examining self-regulatory capacity of Taiwanese university and high school students for vocabulary learning strategies.

Moreover, Wang and Pape (2004) in a case-study research probed four ESL fifth-graders' self-efficacy and their use of self-regulated learning strategies by doing interviews and cross-checking their responses to the ESL self-efficacy and ESL SRL strategy questionnaires. The results revealed an association between self-efficacy, self-regulated learning strategies and English language proficiency with self-efficacious students showing a higher level of performance. Moreover, the highly efficacious participants outnumbered less proficient participants in the reported strategies through interviews and were characterized by a wider variety of SRL strategies.

Although a few studies have considered the self-regulated learning strategies in SLA and their transferability into L2 skills as well as their association with motivational factors, no studies have yet taken into account the association between the control of learning beliefs and self-efficacy as well as their contribution to predicting learning strategy use.

In view of the gap, the present paper was aimed to investigate if self-efficacy and control of learning beliefs, lying under the expectancy component of general expectancy-value model of motivation for self-regulated learning, can predict the use of the cognitive strategies and resource management strategies in the Iranian EFL environment. Self-efficacy helps learners to take right action when they encounter barriers in learning and enables learners to readjust their entrenched beliefs en route to fulfilling their goals, and control of learning beliefs evinces students' beliefs that success or failure in their studies is dependent on them and that outcomes are contingent on one's own effort. Control of learning beliefs has been embedded in tandem with self-efficacy beliefs so as to retain the held beliefs steadfast for learners to persist and be

unyielding to ever-present barriers and obstacles in the social environment of learning.

For the purpose of this study, learning strategy includes cognitive strategies and resource management strategies. Cognitive strategy provides a measure of Rehearsal (e.g., memorizing lists of keywords), Elaboration (e.g., paraphrasing, summarizing) and Organization (e.g., outlining). More specifically, rehearsal strategies include attempts to memorize material by repeating it over and over or other types of more "shallow" processing. In contrast, elaboration strategies reflect a "deeper" approach to learning, by attempting to summarize the material, put the material into your own words, etc. Organizational strategies involve some deeper processing through the use of various tactics such as note-taking, drawing diagrams, or developing concept maps to organize the material in some manner (Pintrich et al., 1991). *Resource management strategies* include *Effort Regulation* or *volition*, (e.g., persisting in the face of a difficult or boring task), *Peer Learning* (e.g., using a study group or friends to help learn), and *Help Seeking* (e.g., seeking help from friends or teachers when needed (Pintrich et al., 1991).

All the same, little has changed in terms of the outcomes of foreign language education in the Iranian EFL context as relatively a small number of students are likely to develop a minimal level of communicative competence in the target language. To explain why foreign language education is relatively unsuccessful, we need to consider the effect of other individual factors in foreign language learners (Ellis, 2009). There are a large number of constraints that tend to work against the effectiveness of current foreign language education programs. This lack of success is partly due to curricular failures (Ghorbani, 2009).

Accordingly, this study is to fill in the niche by investigating the relationship among EFL students' motivational beliefs (viz, self-efficacy and control of learning beliefs) and their use of self-regulated learning strategies (viz, cognitive strategy use and resource management strategies) and the contribution of their self-efficacy and control of learning beliefs to the prediction of their use of learning strategies, operationalized as cognitive strategies and resource management strategies in this study.

## 4. Methodology

### 4.1. Participants

The participants were 202 female and male university students, who majored in English as Foreign Language (EFL) with specialization in translation and English Literature. Female participants comprised about 70 percent of the sample and male participants about 30 percent, from among whom 48 students were sophomores, 80 juniors and 74 seniors. They were drawn from one state-run university in Kashan (n=108) and two

universities in Qom; a private university (n=51) and a state-run university (n=43). They were all from the 19 to 25 age group.

The English level of students were not taken into account since all participating students have passed English courses 2 hours per week at high schools for four years as a requirement of Iranian high school curriculum, and passed the entrance university exams, held nationwide for admission purposes. Moreover, the English curricula at schools and universities are planned and monitored by the ministry of Education and Science, Research and Technology respectively.

### 4.2. Apparatus

A 7-point Likert-scale measure, drawn from the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich et al. (1993), was devised to appraise participants' ratings on the self-regulated-learning sub-factors because the MSLQ is deemed as a reliable, valid, efficient, and convenient measure, designed to gauge college students' motivational orientations and their various application of self-regulated learning strategies (Duncan and McKeachie, 2005). There are 81 items, anchored by 1 "not at all true of me" to 7 "very true of me", on the original questionnaire. The original measure is conceptualized into two broad categories: a *motivation* section and a *learning strategies* section (Pintrich et al., 1991).

Motivation category is further subdivided into three segments: Value, expectancy and affective components which comprise 31 items assessing students' goals and value beliefs for a course, their beliefs about their skills to succeed in a course, and their anxiety about tests in a course, respectively (Pintrich et al., 1991). Value component has three subscales labeled intrinsic goal orientation (e.g. "I prefer course material that really challenges me so I can learn new things"), extrinsic goal orientation (e.g. "Getting a good grade is the most satisfying thing for me right now") and task value (e.g. "I think I will be able to use what I learn in this course in other courses"); The expectancy component includes control of learning beliefs (e.g. "If I study in appropriate ways, then I will be able to learn the material in this course") and self-efficacy for learning and performance (e.g. "I believe I will receive an excellent grade in this class"); the affective component, which includes only Test Anxiety subscale (e.g. "When I take a test I think about how poorly I am doing compared with other students"), concerns students' worries and concerns over taking examinations (Pintrich et al., 1991).

Learning strategy incorporates 31 items regarding students' use of different Cognitive and Metacognitive Strategies, besides 19 items concerning Student Management of Different Resources (Pintrich et al., 1991). The cognitive strategy use section intends to measure students' rehearsal (e.g. "When I study for this class, I practice saying the material to myself over and over"),

elaboration (e.g. "When I study for a class, I pull together information from different sources, such as lectures, readings, and discussions") and organization (e.g. "When I study the readings for this class, I outline the material to help me organize my thoughts") (Pintrich et al., 1991).

The Metacognitive strategy section consists of a large subscale of 10 items, metacognitive self-Regulation, which assesses the use of strategies that help students control and regulate their own cognition, such as planning, monitoring, and such as setting goals for reading, monitoring comprehension as one reads, and making changes or adjustments in learning as one progresses through a task (e.g. "During class time I often miss important points because I'm thinking of other things") (Pintrich et al., 1991).

The Resource management strategy section includes Time and Study Environment (e.g. strategies for using time well, having an appropriate place to study), Effort Regulation or volition, (e.g. "I work hard to do well in this class even if I don't like what we are doing"), Peer Learning (e.g. "When studying for a class, I often try to explain the material to a classmate or a friend") and Help Seeking (e.g. "Even if I have trouble learning the material in a class, I try to do the work on my own, without help from anyone") (Pintrich et al., 1991).

For the purpose of this study, however, only eight untouched subscales were drawn from the MSLQ (Pintrich et al., 1991). The shortened measure was of two main categories: (a) the learning strategy incorporated cognitive strategies, viz, elaboration (n=6), organization (n=4) and rehearsal (n=4), and resource management strategies, viz, effort regulation (n=4), peer learning (n=3) and help seeking (n=4) and (b) the motivation segment included control of learning beliefs (n=4) and self-efficacy for learning and performance (n=8).

Validity and Reliability of the MSLQ was ensured in previous studies (Wolters, Pintrich, and Karabenick, 2003; Artino, 2005). The content validity, underpinned in the related literature, is reviewed in the Mental Measurements Yearbook (Gable, 1998). Although the sub-scales can be reworded to be used in either a specific context or a particular course without jeopardizing its reliability (Wolters and Pintrich, 1998; Wolters et al., 2003), the original English version of the subscales of the measure was piloted with 40 students to calculate the reliability of the shortened MSLQ instrument for the purpose of this study through Cronbach alpha technique. It showed a strong overall internal consistency ( $\alpha = 0.87$ ). Additionally, the Cronbach alpha was also calculated for the subscales of cognitive strategies, viz, elaboration, organization and rehearsal (.800, .796, .710, respectively), and resource management strategies, viz, effort regulation, peer learning and help seeking (.810, .542, .467, respectively) as well as for the subscales of motivation segment, viz, control of learning beliefs

and self-efficacy for learning and performance (.917 and .788). In case of peer learning and help seeking, the weak alpha coefficients can be attributed to the short length of the subscales, if not respondents. The MSLQ was arranged to be distributed by the researchers to the students in the last four weeks of their first educational semester in late November, 2011. The participants were instructed to rate themselves on the 37-item Motivated Strategies for Learning Questionnaire (MSLQ).

### 4.3. Variables

The independent variables of this study were self-efficacy for learning and performance and control of learning beliefs. The dependent variables of this study were learning strategies components of self-regulated learning, viz, cognitive and resource management strategies.

### 4.4. Procedure

The data gathered through questionnaires were subjected SPSS 20 for data analysis. The relationship between the motivational factors and self-regulated learning behaviors was investigated through Pearson product-moment technique. Multiple regression analysis using the stepwise method was conducted to determine if students' motivational beliefs can predict self-regulated learning. Stepwise regression was selected because of the assumed strong correlation between the subscales of the MSLQ and a reasonable and useful regression model. Administering the instrument was scheduled to be at the end of the semester to diminish any probable negative effect due to the lack of relation between general use of cognitive strategy and achievement at the beginning of semester.

## 5. Results

### 5.1. Preliminary analyses

As multiple regression technique uses only non-missing data, the participants who have complete data for all the variables were included. As shown in Table 1, the total mean value for help-seeking and effort regulation strategies were 17.81 and 17.21, respectively, while peer learning yielded a mean score of 11.18. Moreover, the mean score for elaboration was 26.66, for rehearsal 16.93 and for organization 18.94. As hypothesized in the study, self-efficacy showed a significant part in explaining the variance in the individual dimensions of self-regulated learning.

The correlation matrix (Table 2) shows the correlations between variables. As it can be seen, the strongest association was found between control of learning beliefs and self-efficacy (.52)

**Table 1:** Total mean and standard deviations for self-regulated learning subcategories

Total	Rehearsal	Elaboration	Organization	Help-Seeking	Peer Learning	Effort Regulation	Control of Learning Beliefs	Self-efficacy
M	16.9307	26.6683	18.9406	17.8168	11.1832	17.2129	18.6485	38.4010
SD	5.32105	7.73658	5.92460	4.44884	4.80165	4.92321	5.91736	10.84456

Moreover, Table 2 depicts that higher levels of self-efficacy for learning and performance correlated with higher levels of elaboration strategy use (.471), organization strategy use (.389) and help seeking (.388). Self-efficacy was associated with rehearsal strategy use and peer learning (.293 and .216, respectively) at lower level, albeit positively.

The strength of correlation between control of learning beliefs and organization strategy use was

considered high at moderate level in comparison with the use of other self-regulatory strategies (.45). Pearson correlation coefficient analysis revealed that control beliefs only have a small-strength positive relationship with peer learning and effort regulation (.12 and .14, respectively). Even though the strength of correlation was small, it was significant.

**Table 2:** Correlation between students' self-reported motivational beliefs and self-reported use of learning strategies

Variables	1	2	3	4	5	6	7	8
Control of learning beliefs	--							
Rehearsal.	.273	--						
Elaboration	.386**	.373**	--					
Organization	.456**	.433**	.543**	--				
Self-efficacy	.521**	.293**	.471**	.389**	--			
Effort regulation	.142*	.201**	.295**	.218**	.363**	--		
Peer learning	.125	.254**	.258**	.276**	.216**	.230**	--	
Help seeking	.334**	.304**	.325**	.346**	.388**	.315**	.422**	--

\*  $p < .05$

\*\*  $p < .01$

Motivational beliefs, viz, control of learning beliefs and self-efficacy, were associated fairly high at moderate level with help-seeking (.33, and .31, respectively). Higher levels of control of learning beliefs and self-efficacy for learning and performance revealed to be related to higher levels of use of all learning strategies except peer learning to a lesser degree and at low level (.12 and .21, respectively). In a nutshell, effort regulation and peer learning correlated much higher with self-efficacy (.363 and .216, respectively) than control of learning beliefs (.142 and .125).

**5.2. Regression analyses**

Table 3 outlines the results of the stepwise multiple regression analysis with  $\beta$  coefficients,

**Table 3:** Summary of regression analyses predicting students' self-reported use of srl strategies

Variables	Elaboration		Organization		Rehearsal		Peer learning		Help-seeking		Effort regulation	
	B	$\beta$	B	$\beta$	B	$\beta$	B	$\beta$	B	$\beta$	B	$\beta$
1.Control of learning beliefs	.25	.19**	.34	.35***	.14	.16*	-	.01+	.13	.18*	-	-.06+
2.Self-efficacy	.26	.37***	.11	.21**	.10	.21**	.09	.22**	.12	.29***	.16	.36***
R	.22		.21		.09		.05		.15		.13	
Adj R <sup>2</sup>	.24		.23		.9		.4		.17		.13	

+ $p < .10$ . \* $p < .01$ . \*\* $p < .001$ . \*\*\* $p < .0001$ .

Fourthly, self-efficacy explained approximately 4 percent of the variance. However, self-efficacy was the only statistically significant individual predictor of peer learning ( $\beta = .22$ ), while control of learning beliefs only approached significance ( $\beta = .01$ ). Both

determining the magnitude of contribution by significant predictors. Accordingly, self-efficacy and control of learning beliefs had statistically significant positive contribution ( $\beta = .37$  and  $\beta = .19$ , respectively) in explaining the variance in students' reported elaboration strategies, explaining about 24 percent of variance. Secondly, the organization strategies was significantly and positively predicted by control of learning beliefs and self-efficacy ( $\beta = .35$  and  $\beta = .21$ , respectively), explaining about 23% of the variance. Thirdly, both self-efficacy and control of learning beliefs served significantly positively in predicating rehearsal strategies ( $\beta = .21$  and .16, respectively), explaining about 9 % of the variance.

self-efficacy and control of learning beliefs were significantly positive predictors of students' self-reported help-seeking strategies ( $\beta = .29$  and .18, respectively), explaining about 17 % of the variance. Lastly, the sixth analysis reflected those of the fourth,

indicating that self-efficacy was the only statistically significant individual predictor of effort regulation ( $\beta = .36$ ), explaining about 13 % of the variance, with control of learning beliefs only approached significance ( $\beta = .06$ ).

## 6. Discussion

The results of data analyses revealed the positive relationships between motivational beliefs and self-regulatory strategies use besides the significant correlation between control of learning beliefs and self-efficacy. Thus, students' self-regulated learning proved to be closely geared to their self-efficacy beliefs about their academic capability and their control of learning beliefs. It suggests that students' levels of expectation about their abilities and the extent to which they bring control in their academic endeavors are closely related.

Furthermore, according to the results of Pearson correlations, self-efficacy and control of learning beliefs were significantly related to students' use of elaboration, organization, rehearsal strategies. It suggests that students are fairly cognitively engaged through the use of rehearsal, elaboration, and organizational cognitive strategies since the learners' self-reported self-efficacy beliefs for learning and performance and their control of learning beliefs revealed to be associated significantly positively with their reported use of cognitive strategies.

The stepwise multiple regression analyses showed control of learning beliefs to be the stronger predictor of organization strategies, when self-efficacy controlled. After controlling for control of learning beliefs, self-efficacy was the stronger predictor of elaboration, rehearsal and very potent predictor of effort regulation, peer learning, and help seeking respectively. This implies that the more subjects tended to see themselves as self-efficacious, the more they tended to use learning strategies and vice versa. As such, self-efficacy explained more cognitive and especially resource management strategies in comparison to control of learning beliefs except for organization strategies of which control belief was a stronger predictor, which is consistent with a previous research findings (Zimmerman, 1989).

Moreover, the result is consistent with the findings by Bouffard-Bouchard et al., (1991), which showed that self-efficacy significantly positively influenced the occurrence of such aspects of self-regulation as monitoring working time and solving conceptual problems. Moreover, the results of the study subscribe to a myriad of studies that document the positive effects of peer help and peer tutoring (Pintrich et al., 1991; Wolters, 2010). Additionally, although help-seeking is deemed as damage to one's own pride and is put to individual's lack of knowledge in some cultures (Wolters, 2010), Iranian EFL learners scored approximately high on help-seeking vis-à-vis other resource management strategies. However, it should be mentioned that

these records of strategy use may vary across classroom tasks and context variables.

In brief, findings from the present study suggest that student's motivation to learn is associated with his/her use of self-regulated learning strategies in academic settings, which is in line with those of a multitude of research studies (Pintrich and De Groot, 1990; Zimmerman, Bandura and Martinez-Pons, 1992; Zimmerman et al., 1992; Zimmerman and Martinez-Pons, 1990).

## 7. Conclusion

The results provided valid empirical evidence for the importance of motivational beliefs in investigating self-regulated learning strategies in an EFL context as "SRL depends on motivation and control" (Paris and Paris, 2001). Moreover, the finding prompts the educators and practitioners to reflect more upon learners' responsibility and involving them in decision making (Davis and Gray, 2007) as long as self-regulation is constructivist and asunder from transmission of knowledge, rote learning, teaching-centered program, and spoon-feeding learner. In a nutshell, the results adduce for motivational beliefs in actualizing learning strategies in an EFL context to encourage learners to invest more in their motivational dimensions for reaping bumper learning. Thus, for elevating self-regulated learning of learners offering guidance and raising awareness as to harness all the available assets are advised to educators.

The EFL context can exploit this instrument for continual self-appraisal of learning and teaching en route to pinpointing the areas of strengths and weaknesses for attaining better results in learning and expand it to other research studies and skills to elevate educational progress. Self-regulated learning needs to be introduced in curriculum development to appreciate more the new development in learning and teaching research studies of self-regulation as moving towards constructivism seeks learners to be independent self-regulative and this is much sooner accomplished in an invigorating milieu which spurs and supports and provides sufficient latitude for learners to experience and implement their skills and strategies to self-regulate their learning.

## References

- Artino, A. R. (2005). Review of the motivated strategies for learning questionnaire. Retrieved from <http://www.eric.ed.gov>
- Artino, A. R., and Stephens, J. M. (2007). Motivation and self-regulation in online courses: A comparative analysis of undergraduate and graduate students. Paper presented at the annual meeting of the Association for Educational Communications and Technology, Anaheim, CA.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human*

- Decision Processes, 50, 248–287. Doi: 10.1016/0749-5978(91)90022-L
- Baumeister, R. F., and Vohs, K. D. (2007). Self-regulation, ego-depletion, and motivation. *Social and Personality Psychology Compass*, 1(1), 115–128.
- Bouffard-Bouchard, T., Parent, S., and Larivee, S. (1991). Influence of self-efficacy on self-regulation and performance among junior and senior high-school age students. *International Journal of Behavioral Development*, 14, 153-164. Doi:10.1177/016502549101400203
- Campbell, D.T., and Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait/multimethod matrix. *Psychological bulletin*, 56, 81-105. Doi:10.1037/h0046016
- Caprara, G. V., Vecchione, M., Alessandri, G., Gerbino, M., and Barbaranelli, C. (2011). The contribution of personality traits and self-efficacy beliefs to academic achievement: A longitudinal study. *British Journal of Educational Psychology*, 81, 78–96. Doi: [10.1348/2044-8279.002004](https://doi.org/10.1348/2044-8279.002004)
- Cleary, T. J., and Zimmerman, B. J. (2004). Self-regulation empowerment program: A school-based program to enhance self-regulated and Self-motivated cycles of student learning. *Psychology in the Schools*, 41(5), 537-550. Doi: 10.1002/pits.10177
- Davis, S., and Gray, E. S. (2007). Going beyond test taking: Building self-regulated students and teachers. *Journal of Curriculum and Instruction*, 1(1), 31-47. Doi: 10.3776/joci.2007.v1n1p31-47
- Dornyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. New Jersey, NJ: Lawrence Erlbaum Associates, Inc.
- Duckworth, K., Akerman, R., MacGregor A., Salter, E., and Vorhaus, J. (2009). *Self-regulated learning: A literature review*. London: Centre for Research on the Wider Benefits of Learning.
- Duncan, T. G., and McKeachie, W. J. (2005). The making of the motivated strategies for learning questionnaire. *Educational Psychologist*, 40(2), 117-128.
- Ellis, R. (2009). Retrospect and prospects. In Ellis, R., Loewen, S., Elder, C., Erlam, J., Philip, J., and Reinders, H. *Implicit and explicit knowledge in second language learning, testing and teaching* (pp. 335-353). Bristol: Multilingual Matters.
- Gable, R. K. (1998). Review of motivated strategies for learning questionnaire. In J. Impara and B. S. Plake (Eds.), *The thirteenth mental measurements yearbook* (pp. 681–682). Lincoln: The University of Nebraska Press.
- Ghorbani, M.R. (2009). *ELT in Iranian high schools in Iran, Malaysia and Japan: Reflections on how tests influence use of prescribed textbooks*. *Reflections on English Language Teaching*, 8(2), 131–139
- Hirata, A. (2010). *An exploratory study of motivation and self-regulated learning in second language acquisition: Kanji learning as a task focused approach*. Unpublished master's thesis. Massey University, Manawatu, New Zealand.
- Lindner, R.W., and Harris, B. (1992). Self-regulation learning and academic achievement in college students. A paper presented at the American educational research association annual meeting, San Francisco, CA. Retrieved from <http://www.eric.ed.gov/pdf>
- McCoach, D.B., and Siegle, D. (2003). Factors that differentiate underachieving gifted students from high achieving gifted students. *Gifted Child Quarterly*, 47(2), 144-154. Doi: 10.1177/001698620304700205
- Paris, S. G., and Paris, A. H. (2001). Classroom application of research on self-regulated learning. *Educational Psychologist*, 36, 89-101. Doi: 10.1207/S15326985EP3602\_4
- Pintrich, P. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, 16, 385–407.
- Pintrich, P. R., Smith, D. A. F., Garcia, T., and McKeachie, W. J. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). *Educational and Psychological Measurement*, 53, 810–814. Doi: 10.1177/0013164493053003024
- Pintrich, P., and De Groot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-40. Doi: 10.1037/0022-0663.82.1.33
- Pintrich, P., and Schunk, D. (1996). *Motivation in education: theory, research, and application*. Englewood Cliffs, NJ: Merrill/Prentice Hall
- Ryan, R.M., and Deci, E.L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality*, 74(6), 1557-1585. Doi: 10.1111/j.1467-6494.2006.00420.x
- Schmeichel, B. J., and Baumeister, R. F. (2004). Self-regulatory strength. In R. F. Baumeister and K. D. Vohs (Eds.), *Handbook of self-regulation* (pp. 84–98). New York: Guilford Press.
- Schunk, D. H. (2005). Commentary on self-regulation in school contexts. *Learning and Instruction*, 15, 173-177.
- Schunk, D. H., and Zimmerman, B. J. (1998). *Self-regulated learning: From teaching to self-reflective practice*. New York: The Guilford Press.

- Susimesta, M. (2006). Motivated and self-regulated learning of adult learners in a collective online environment (Unpublished doctoral dissertation). Research Center for Professional and Vocational Education, University of Tampere, Finland.
- Tseng, W. T., Dörnyei, Z., and Schmitt, N. (2006). A new approach to assessing strategic learning: the case of self-regulation in vocabulary acquisition. *Applied Linguistics*, 1, 78- 102. Doi: 10.1093/applin/ami046
- Wang, C., and Pape, S. J. (2004). Self-efficacy beliefs and self-regulated learning strategies in learning English as a Second Language: Four Case Studies. *The CATESOL Journal*, 17(1), 76-90.
- Wolters C.A., and Pintrich P. R. (1998). Contextual differences in student motivation and self-regulated learning in mathematics, English, and social studies classrooms. *Instructional Science*, 26, 27-47. Doi: 10.1023/A:1003035929216
- Wolters, C.A. (2010). Self-regulated Learning and the 21 Century Competencies.
- Wolters. A.C., Pintrich, P., Karabenick, A. S (2003). Assessing academic self-regulated learning. Paper presented at the Conference on Indicators of Positive Development: Definitions, Measures, and Prospective Validity. Washington, DC.
- Young, M.R. (2005). The motivational effects of the classroom environment in facilitating self-regulated learning. *Journal of Marketing Education*, 27, 24-40.
- Zimmerman B. J., and Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, 82(1), 51-59. Doi: 0022-0663/90/\$00.75
- Zimmerman B. J., Bandura A., and Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal*, 29(3), 663-676. Doi.org/10.3102/00028312029003663
- Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81(3), 329-39.
- Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, 25(1), 3-7.
- Zimmerman, B. J. (1995). Self-regulation involves more than metacognition: A social cognitive perspective. *Educational Psychologist*, 30(4), 217-221.
- Zimmerman, B. J. (1998). Developing self-fulfilling cycles of academic regulation: An analysis of exemplary instructional models. In D. H. Schunk and B. J. Zimmerman, *Self-regulated learning: From teaching to self-reflective practice* (pp 1-20). New York: Guilford Press.
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R., Pintrich and M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). San Diego, CA: Elsevier Academic Press.
- Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. J. Zimmerman and D.H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (2<sup>nd</sup> ed.) (pp. 1-37). Mahwah, NJ: Lawrence Erlbaum Associates.
- Zimmerman, B. J., and Schunk, D. H. (2004). Self-regulating intellectual processes and outcomes: A social cognitive perspective. In D. Y. Dai and R. J. Sternberg (Eds.), *Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development* (pp. 143-174). Mahwah, NJ: Lawrence Erlbaum.