

Increasing Student Learning Through Volitional Control

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Students' engagement and persistence on academic learning tasks often require their use of volitional strategies to protect against distractions and facilitate task completion. In this article we discuss factors that both positively and negatively influence students' ability to regulate their learning activities and the supporting role that volitional strategies play in helping students to develop positive work habits for tackling academic assignments. Using the Academic Volitional Strategy Inventory (AVSI), we present teachers with approaches for helping students who need to support their learning efforts. Included are ways to use the AVSI (1) as a diagnostic tool, (2) to incorporate instruction in and modeling of volitional strategies in regular curriculum assignments, and (3) to promote student reflection and peer group interaction in facilitating self-regulatory action.

A current catch phrase in education today is “all students can learn.” With the passage of the No Child Left Behind (NCLB) legislation (U.S. Department of Education, 2002), educators are increasingly looking for ways to help move students who are failing or barely getting by to higher levels of performance. If we indeed believe that all students can learn, an important focus must address an understanding of how student work habits affect academic learning. To achieve school success students need to exert self-discipline on school tasks and be resourceful in the ways they approach those tasks. As teachers, we are in a unique position to influence our students' ability to develop and engage work habits that can lead to successful mastery of their school challenges.

As others in this issue report, positive work habits can perhaps be best understood within the context of self-regulatory behavior. Much has been written about the positive benefits that accrue for students when strategically managing their learning environments and concentration on academic tasks. Strategic students actively participate in their learning process. They

select appropriate methods for learning material and assess their retention of the material as they continue the learning process (see Zimmerman & Schunk, 2001, for review). These actions guide their adjustment of learning methods or study conditions to maximize success on the assigned tasks.

Students' cultivation of skills and confidence for meeting the challenges of academic and later life responsibilities begin with the interactions, support, and instruction that they receive in their early lives. As they move through the childhood stages of development, young children's innate curiosity about the world generally gives way to a sensitivity to the standards and reactions of others to their performance (Higgins, 1991). Children's growing senses of self (e.g., self-confidence, self-efficacy, self-control) are shaped through these experiences and coincide with their entry into formal schooling (Paris, Byrnes, & Paris, 2001). The emotions that arise concurrently with peer comparisons and others' feedback can also influence students' subsequent academic motivation for particular learning activities (Pekrun, Goetz, Titz, & Perry, 2002). In this article, we discuss ways that teachers can assist students in developing work habits to support their motivation for, and cognitive engagement with, academic learning tasks.

To begin, we review factors that affect students' self-regulatory learning activities. Next we discuss the role played by students' emotions in their motivation to engage in academic activities. Finally we consider the supporting role of volitional strategies in the development of effective work habits. Although students are often not aware of the importance of volitional strategies, teachers can facilitate this awareness and help students use such strategies to support their intentions to gain academic competence.

SELF-REGULATION OF LEARNING

Social cognitive theory stresses that the interaction among behavioral, personal, and environmental processes forms the basis for the varied approaches that students take to tackle their academic work. According to Bandura (1986), the ability to regulate these circumstances arises from a sense of personal agency—the belief that you have the skills and can reach personal goals. When it comes to achieving learning goals, academically successful students not only have a repertoire of effective strategies for learning, they also take control of their learning. Effective work habits displayed by self-regulated learners include planning, organizing, self-instructing, and self-monitoring during the course of completing their assignments. Not only are self-regulated students more likely to be academically successful, but they also perceive themselves as being competent, self-efficacious, and autonomous (Paris & Byrnes, 1989; Zimmerman, 1990). These self-regulated students value academic learning and they persist in the face of difficulties—“they know why they are studying, so

their actions and choices are self-determined and not controlled by others” (Woolfolk, 1995, p. 367).

In students’ early years, teachers can help students develop self-regulatory behaviors by structuring feedback to give the message that mistakes are learning experiences rather than a message that errors reflect personal deficiencies. Student reactions may then be better channeled in positive ways that encourage ongoing self-regulatory learning. Students in later grades can also benefit from teacher interventions through instruction, modeling, and structured learning activities that foster self-regulated behaviors. Indeed, teaching students various self-regulation strategies has been shown to be effective in helping students learn how to learn material, particularly when combined with reflection and scaffolded support by teachers (e.g., Pressley, Woloshyn, & Associates, 1995; Weinstein & Mayer, 1986).

It is important to understand that students’ self-regulation of learning, and the development of positive work habits, occurs over time, is a developmental phenomena, and begins through social interaction (Diaz, Neal, & Amaya-Williams, 1990; Pressley, 1995). From a social-cognitive developmental perspective, “human minds are the product of social relationships” (Pressley, 1995, p. 210). Diaz et al. (1990) suggested that “the quality of social interactions a child experiences might have a significant effect on the development of self-regulation” (p. 152). To facilitate student self-regulation, Diaz and colleagues offered four general strategies: (1) using praise and encouragement, (2) using conceptual questions as opposed to using directives and commands, (3) scaffolding learning so that the child takes over the task, and (4) giving direct relinquishing statements that tell the child that he or she is taking control of his or her learning.

To build students’ feelings of competence and self-efficacy for learning, Pressley (1995) suggested that it is important for teachers to give students a variety of learning experiences that offer them success and contain varying degrees of difficulty. However, it is important that the varying difficulty is “within the students’ competence so that consistent success will occur if an appropriate expenditure of effort is made by the student. Such experiences do not just happen, but will occur only if teachers or curriculum designers create them, specifically intending for students to have consistent success as they work on a variety of effortful problems” (p. 210). Additionally, Pressley offered other instructional practices for teachers to provide students with appropriate experiences that foster the development of learning-related self-regulation beliefs and behaviors, including:

- Provide students with diverse opportunities to learn that effort pays off, and diverse tasks in which they experience consistent success through expending effort;

- Have students practice new procedures they are learning to the point of proceduralization before expecting them to use them in a self-regulated fashion;
- Encourage the epistemological beliefs that (a) learning often is hard, even for capable learners, and (b) knowledge is rarely absolute, with alternative perspectives and ways of doing things more the rule than the exception; and
- Do all possible to encourage student understanding of the use of the strategies and conceptual knowledge they are acquiring.

Unfortunately, in spite of teachers' efforts to incorporate opportunities for students to develop feelings of self-efficacy for learning into daily academic tasks, self-doubts can still arise. Emotional reactions to negative performance experiences and feedback can trigger uncertainty about both present and future abilities in specific subject areas. For example, if Mark encounters a number of test questions in a row that he is unable to answer, his frustration may affect his continued focus on the rest of the test. If poor test performance results, Mark may begin to doubt his capability for mastering the material. This emotion may then influence his motivation to willingly participate in future academic tasks with similar content. Part of successful student self-regulation is the ability to manage emotional states during learning tasks. This aspect of self-regulation has received the least attention in research, yet is important if students are to develop effective work habits.

EMOTIONAL EFFECTS ON LEARNING

Pekrun (1992, 2000) has been researching the interconnections among students' emotions and motivational processes that occur during learning. His studies demonstrate that students experience a wide range of emotions as they strive to complete academic tasks. These emotions are most often related to the extent to which students believe they have control over their learning and the value they attach to their learning (Pekrun, 2000). Pekrun's research is particularly interesting because it shows that students experience emotions about their learning tasks, and, in a reciprocal fashion, these emotions influence how they approach subsequent learning tasks. For example, he has demonstrated that "activating positive emotions like enjoyment of learning and hope for success may exert positive effects on motivation to learn, the use of flexible learning strategies, task-focused attention, and resulting achievement" (p. 146).

Most teachers want their students to experience positive and pleasant emotions with the hope that these emotions will foster motivation, engagement, and learning. Toward this end, research has enhanced our under-

standing about the types of goals and classroom-structures that are most likely to facilitate students' enjoyment, interest, and learning. For example, Turner and Patrick (this volume) point out that teachers' emphasis on mastery goals has been associated with higher levels of students' intrinsic interest and positive attitudes about learning tasks. Other teaching strategies that have been shown to generate student interest include incorporation of variety, meaningfulness, and student collaboration (Blumenfeld, 1992; Meece, 1991; Paris & Turner, 1994). However, as much as teachers may try to build supportive and interesting tasks, they also have to follow curriculum guidelines and state standards that demand that particular material be taught. Certain topics may be more difficult to teach in a manner that draws students into learning. Additionally, even when teachers promote mastery goals, students will inevitably encounter difficulties and roadblocks as they struggle to learn challenging material. When difficulties are encountered, negative emotions can arise. Students may also experience negative and unpleasant emotions when they encounter conflict among multiple goals. For example, they may need to do their homework but would rather spend the time with their friends (see Xu, this volume).

Pekrun (1992, 2000) asserted that, in contrast to the effects of positive emotions, the impact of negative emotions on students' motivation and learning have less straightforward effects. Although students may disengage with learning activities when they encounter difficulties and negative emotions, negative emotions also have the potential to bring into play complex thinking and problem solving when students value high achievement (Turner & Schallert, 2001). Pekrun suggested that the motivational consequences triggered by negative emotions could lead to either strengthened motivated behavior or to the withdrawal of effortful behavior, depending on a variety of influences such as students' future goals or a desire to please their teachers and parents. The current emphasis on disentangling the impact of negative emotion on learning can potentially broaden teachers' ability to help students more effectively approach and complete their academic tasks.

Students may use a number of strategies for learning academic material. A major stumbling block to task engagement and completion is students' lack of ability to support their motivation when confronted with obstacles. Internal and external distractions can arise without warning, leaving students to wrestle with the effects of negative emotion or competing goals. Students frequently need a collection of volitional strategies to strengthen their resolve to stay task-focused when obstacles to their motivation for learning occur. Even if students have a repertoire of strategies to help them direct their learning activities, they may not have a repertoire of strategies to help them manage their motivation. Turner and colleagues (Turner, Husman, & Schallert, 2002; Turner & McCann, 2000) found that students who reported using volitional strategies to counter the shame of receiving

failure feedback on a test persisted with required course tasks and subsequently improved on following assessments. Students who reported little or no volitional strategy use were seen to give in to being so overwhelmed by their test feedback that they questioned their ability to perform any better on later assessments. The following section describes the use of volitional strategies for managing distractions that threaten students' initiation, maintenance, and completion of academic tasks.

MAINTAINING MOTIVATION: THE USE OF VOLITIONAL STRATEGIES

Many students confront difficulty with schoolwork throughout their academic years. Whereas some students seem to naturally exhibit effective work habits, others struggle to get started and keep focused. They are often distracted by a noisy class or study environment, more pleasurable activities, or assignments that cover lengthy time spans. In these instances, volitional strategies can provide the protective boost that is needed for students to keep themselves on track (Corno, 2001; Kuhl, 1984).

Several studies have shown volitional strategies to be effective in helping students stay task focused. In these studies students reported invoking images of themselves attaining good grades, reminding themselves of their original goals, providing self-rewards for finishing assignments, and considering consequences they may face related to carelessness or procrastinating on academic tasks (see Bembenuddy & Karabenick, 1998; Kuhl, 1984; Wolters, 1998). These thoughts and actions equipped students with techniques for neutralizing negative emotions or intrusions. By using volitional strategies, students are better able to maintain or enhance their motivation and engagement on academic tasks and more successfully complete their assignments (Husman, McCann, & Crowson, 2000; McCann & Garcia, 1999). (See Appendix B for discussion of effects.)

Positive work habits involve the ability of students to exert control over their own learning. Although they may know strategies for planning, organizing, learning, and guarding against distractions, numerous factors can still influence their inclination to use those strategies to initiate and maintain needed effort for task completion (as discussed in earlier sections). The key to success in learning is in students translating their self-regulatory knowledge into action. This involves effort and self-determination (Snow, Corno, & Jackson, 1996). As Zimmerman points out (2001), "learning is not something that happens to students . . . it is something that happens by students" (p. 33). The following instrument was designed to assess the extent to which students put forth effort toward supporting their motivation for learning. It can also be used as a tool by teachers to promote positive work habits in their students.

CULTIVATING POSITIVE WORK HABITS: THE ACADEMIC VOLITIONAL STRATEGY INVENTORY

The Academic Volitional Strategy Inventory (AVSI; see Appendix A) is a survey instrument for assessing students' tendencies toward volitional control in academic situations. The AVSI consists of 20 items asking about methods students use to initiate and support their focus on academic assignments.¹ The original version of the AVSI (McCann, 1999) was based on research conducted by Kuhl (1985) in which middle school students reported using a variety of methods to initiate or strengthen their focus when struggling to avoid distractions that threatened their efforts to complete academic tasks. Corno and Kanfer (1993) presented a scheme for categorizing these methods, arranging them into five distinct categories of self-regulatory actions: metacognitive control, environmental control, attentional control, emotion control, and motivation control. The strategies found in the first three categories have received considerable attention over the past several decades and have been shown to affect students' self-regulation for learning (see Zimmerman & Schunk, 2001, for review). Other studies have more recently indicated that emotion and motivation regulation strategies similarly enhance students' learning goals. They protect students against the many internal and external distractions that present diversions to their completion of academic assignments (McCann & Garcia, 1999; Turner & McCann, 2000).

The AVSI specifically addresses students' management in Corno's categories of emotion and motivation. Initial studies included college-level students, yet the items on the AVSI can be easily adapted to work with younger students. For example, Item 1 reflects the use of rewards to promote persistence on tasks. Types of rewards can be reworded to reflect the desires of students in both elementary and secondary settings. Some of the items are more specific to students in higher grades—those who have experienced feelings of disappointing others or considered how their delay on assigned tasks may affect their future careers (e.g., Item 13, "I think about the sacrifices that I have made or that my parents are making to put me through school"; Item 8, "When I don't feel like studying, or feel like quitting, I think about the kinds of jobs or careers I may end up with if I flunk out of college"). These items can be modified to reflect the concerns of younger students (e.g., "I think about having to go to summer school"; or "When I don't feel like studying, or feel like quitting, I think about being held back a grade"). Overall, the items lend themselves rather easily to use with students of all ages.

As a practical tool, the AVSI can be used by teachers to do the following:

- Diagnostically assess whether and the degree to which students use volitional actions to focus on academic tasks when distracted,

- Instruct and model the types of strategies students are known to use to counter distractions in initiating and completing academic tasks,
- Promote reflection by students on their process of working toward completing academic tasks, and
- Provide peer group interaction to recognize and support self-regulatory behaviors.

DIAGNOSTIC ASSESSMENTS

As students move through the academic grades, they frequently experience a need for more concentrated focus on schoolwork. Periodically, it may be advantageous for teachers to assess the types of strategies their students use in tackling academic assignments (see also Corno, this volume). Students who have been continually performing poorly on class assignments may show less of an inclination to work on class or homework tasks. These students may have difficulty initiating study behavior when diversions are present. As we strive to produce situations that result in meaningful learning for our students, we must remember that motivation to learn plays a central role. Academic emotions associated with learning tasks are fundamental to students' investment of effort in the tasks we set before them. As an assessment instrument, the AVSI can help teachers pinpoint students who might benefit from volitional strategy interventions. Once known, teachers can provide appropriate instruction, modeling, feedback, and learning structures to help these students neutralize negative influences.

INSTRUCTION/MODELING

Particularly with younger students, explicit instruction and modeling play a strong role in helping them develop or strengthen positive work habits. The items on the AVSI can serve as a starting point to instruct students in useful methods for initiating and completing schoolwork. With input from students, additional self-regulatory behaviors may emerge. This list of strategic actions may then form a basis for discussions and reflections on countering difficulties and techniques for success with academic tasks. For example, teachers might do the following:

- Develop charts displaying age-appropriate (or modified) AVSI strategies;
- Supplement the charts with further strategies based on difficulties and successful ways their students have countered those difficulties (both within classroom settings and when working on their own);

- Discuss with students the kinds of situations that distract them from their work;
- Discuss with students the kinds of things they do to get on task or stay on task;
- Have students select specific strategies to use in working on various assignments;
- Have students reflect on problems encountered using strategies, as well as their successes;
- Review (weekly) to add to chart.

For young students, prominently displaying charts of volitional strategies that show actions to help focus on tasks and away from distractions in the classroom or at home can be helpful. Strategies from the AVSI that may be relevant to these charts include the following:

- Promising oneself a desired reward (#1)
- Keeping in mind that they may disappoint their parents if they do poorly on an assignment (#3)
- Using statements that reinforce their confidence in their ability to complete school tasks (#5)
- Thinking about how satisfied they will feel after completing the task (#10)
- Commanding themselves to “just do” the assignment (#12)
- Thinking about ways the assignment relates to more fun or interesting things that they enjoy (#15)
- Considering how doing poorly on an assignment would impact them (e.g., more study time vs. playing with their friends or other desired activities) (#17)
- Thinking of the different resources (e.g., parents, friends, books, experiences) that they can tap into to help them complete their assignments (#18)
- Talking to themselves aloud about the assignment to stay focused when others, or other things, tend to be distracting (#20)

To make the behaviors relevant to students’ experiences, students can contribute their own methods for staying on task with academic assignments. Susie, for example, might share how she was able to get her math assignment done even though her little brother and his friends were play-

ing loudly in the other room. Students should be encouraged to offer and discuss various types of distractions they encounter and how they deal with them. Talking about their successful experiences, as well as those that didn't work for them, may contribute to success for other students who encounter similar situations. Strategies that worked can be added to the chart to expand students' knowledge of strategies to try out in developing or strengthening their work habits.

Teachers, students, or both can model how to use the strategies, simulating situations that require volitional action. Likewise, feedback by teachers and students can provide instruction to help students adjust or modify strategies to best suit their experiences (see also Randi, this volume, and Perry, Reed, & Dowler, this volume).

STUDENT REFLECTION ON ACADEMIC WORK HABITS

The diagnosis of student difficulties with volitional self-regulation is essential for teachers concerned with assisting those students in need of developing good work habits. Instruction, modeling, and feedback with students confronting problems in controlling distractions can then be tailored to help them develop positive work habits. The AVSI items can serve as suggested ways to counter various difficulties. Students' learning of methods for managing tasks, reflecting on what worked, what didn't work, and why may make the crucial difference in the continued use, or adoption, of appropriate strategies to use in countering specific difficulties. Structured time for student reflection can be meshed with regular project tasks or provided as a separate assignment. Student collaboration on academic tasks may also be structured to highlight negative tendencies and model positive strategies for overcoming obstacles. Example activities for encouraging reflection might include having students keep a journal about the process of completing an assigned task (or tasks), either as part of the assignment or as a separate assignment encompassing a set of tasks or a set period of time. Students might be asked to recount their activities related to the following:

- How and when they planned to tackle the assignment,
- The timeframe within which they planned to accomplish the assignment,
- Obstacles encountered in initiating task activity,
- Difficulties (with the material or other distractions) that may have led to frustration or tendencies to disengage from the task,
- Strategies used to stay focused, and
- Whether their strategies were successful, and why or why not.

Teachers' feedback on journal entries might suggest alternative methods for future tasks. These might include suggestions of strategies for each phase of moving through the process of task completion at the beginning of semester—encouraging them to try out approaches that they think might better work for them.

Feedback sessions for the whole class, or in small groups that culminate in whole-group discussions, can highlight the use of successful volitional strategies after each major assignment. Areas to discuss include resources used by students as well as their setbacks (e.g., with content, emotional reactions, environmental frustrations). Small group and whole-class discussions can be structured to elicit task or study difficulties as well as methods used to overcome obstacles. Through such sessions, teachers can gain important information about the work habits that are displayed by students, as well as gain critical information about students' level of understanding of the assigned material. This information can then feed into further instruction, modeling, and support for improving students' content understanding and work habit practices.

Strengthening students' motivation or mindsets for learning involves encouraging their concerted reflection on factors that inhibit cognitive engagement and the completion of their assigned work. Structuring time to reflect about how they dealt with an assignment can help combat the development of negative attributions and lowered self-efficacy if task performance falls short of students' expectations. It may also provide an avenue for deflecting potential indifference to the wealth of knowledge that their classes can offer and lowered motivation to understand, engage in, and contribute to the various academic and world experiences that surround them.

PEER GROUP INTERACTIONS

To increase students' use of volitional strategies, teachers can structure groupings of students on assignments to maximize the learning of those in need of strategic methods for initiating/completing tasks. Students who share their successes may also benefit from seeing their peers achieve success with strategies they use, confirming the effectiveness of their approach. Sometimes seeing what other students say and do resonates far beyond teachers' words and actions. Grouping students in ways that fit their needs (i.e., combinations of low, medium, and high performing students), while at the same time creating tasks that require all to participate, may aid a teacher's attempts to provide instruction in volitional strategy use to enhance students' content learning.

In-class group activities can use think-aloud assignments that have students model methods of planning, initiating, and working on tasks. Activ-

ities can be structured to incorporate goal setting for tackling assignments that include discussions about the following:

- Considerations of optimum study times and places,
- Necessary amounts of time/days to complete a particular assignment,
- Needed resources that can contribute to successfully completing the assignment (e.g., extra reading materials, visual aids, study groups), and
- Actions to be used if distractions to initiating or working on assignments arise.

Group interactions at the planning stage provide numerous advantages to students needing to develop or strengthen the ways in which they approach assignments. Group interactions may help weaker students gain knowledge about various volitional strategies that can be used as they strive toward task completion. If assignments span lengthy time periods (e.g., a term paper, a class project), teachers can structure in-class group meetings at regular intervals for students to talk about their process for initiating and working on the assignment. As group members listen to each other's experiences, they can help each other catch negative thinking, isolate problem areas, provide alternative suggestions, and serve as a support system for overcoming learning obstacles. At the conclusion of assignments, group reflection about teacher feedback may also be instructive to the processing of tactics for increasing successes on future similar tasks.

CONCLUSION

The No Child Left Behind (NCLB) legislation (U.S. Department of Education, 2002) challenges teachers to consider creative instructional techniques for guiding their students to higher levels of achievement. Although teachers may encounter students who seem to not want to learn, much research has demonstrated that a number of factors tend to underlie this apparent lack of motivation—including a complex array of personal characteristics and situational factors. The differing levels of student commitment to the goals that teachers establish, fluctuating interest and value for learning specific content material, and varying levels of knowledge about methods for maneuvering through class assignments pose significant challenges to teachers as they attempt to confront each student's unique set of learning needs.

Volitional self-regulation affects follow-through as students attempt to complete academic tasks (Corno, 2001). The demands of classroom situations and out-of-classroom learning often require students to constrain preferred inclinations and activities to meet their task requirements. De-

veloping an aptitude for volitional control can make the difference in students' mastery of the challenges that confront them as they strive to attain their academic and future goals. Because students' levels of knowledge differ, and their commitment, interest, and value for academic tasks is known to wax and wane, it is important that teachers keep in mind the underlying thoughts and emotions that can hinder these aspects of learning. By including volitional control strategies as a goal for instructional programs, teachers increase their collection of techniques for promoting effective student work habits. As teachers see successes accumulate for their students, they may be more likely to embrace the statement that "all children can learn."

APPENDIX A

THE ACADEMIC VOLITIONAL STRATEGY INVENTORY (AVSI)

1. I promise myself something I want when I complete a specific amount of studying (e.g., going to a movie, getting together with friends, a favorite CD).
2. I remind myself that I usually do fine on exams and/or other assignments when I stick to a study schedule.
3. I think about how disappointed others (family/friends) will be if I do poorly.
4. If I am having difficulty, I call a friend from the class and discuss the assignment/material with them.
5. I tell myself, "you can do this!"
6. I think about my other coursework, and that if I don't get going or continue with my studying, I'll fall behind in assignments for the rest of my courses.
7. I think about the mistakes that I have made on past assignments and exams when I've procrastinated in my studying.
8. When I don't feel like studying, or feel like quitting, I think about the kinds of jobs or career I may end up with if I flunk out of college.
9. I imagine myself moving through the assignment, or answering test questions without much difficulty.
10. I think about how great (how relieved) I'll feel when I get it finished.
11. I think about the amount of time my classmates probably study for this class, and that they'll get a better grade than me.

12. I tell myself, “get to it and concentrate, this is an important assignment/exam/paper.”
13. I think about the sacrifices that I have made or that my parents are making to put me through school.
14. I think of interesting or different ways to make studying more fun or challenging for me.
15. I think about the goals I have set for myself (how what I do now may affect my future).
16. I usually meditate or use some method of relaxation so I am better able to concentrate on my studies.
17. I think about the possible negative consequences of doing poorly in this class.
18. I think about my strengths and the resources I can draw on to help me with difficult assignments or test information.
19. I think about things that make me feel good whenever I am feeling frustrated about what I need to get done for this class.
20. I talk aloud to myself about the material I am studying to keep me from getting distracted.

Subscale Items:

Self-Efficacy Enhancement: 2, 5, 6, 10, 12, 15, 18, 19, 20

Negative-Based Incentives: 3, 7, 8, 11, 13, 17

Stress Reducing Actions: 1, 4, 9, 14, 16

*The items in this scale are generally preceded by the statement: “When I am unable to get started on my assignment or if I get distracted . . . ”

**The items are scored on a Likert-type scale using ratings from *very true of me* to *not true of me* or *I always do this* to *I never do this*. The rating values can be on a 5-point or 7-point scale, depending on how fine-grained of an analysis is desired. The analysis of students’ need for developing volitional strategies should also include a consideration of their performance on various class tasks and their usual methods for tackling the assigned work.

APPENDIX B

PSYCHOMETRIC PROPERTIES OF THE AVSI SCALE

The development process of the Academic Volitional Strategy Inventory (AVSI) resulted in a scale consisting of 20 items. Student responses were

Table 1. AVSI and MSLQ Correlations

MSLQ Subscale	<i>r</i>	<i>p</i>
• Intrinsic Goal Orientation	.31	<.001
• Extrinsic Goal Orientation	.47	<.001
• Task Value	.26	<.001
• Control of Learning	.16	<.01
• Help-Seeking	.33	<.001
• Peer Learning	.35	<.001
• Time Management	.17	<.01
• Metacognitive Strategy Use	.41	<.001
• Critical Thinking	.35	<.001
• Elaboration Strategy Use	.38	<.001
• Organizational Strategy Use	.38	<.001
• Rehearsal Strategy Use	.51	<.001

assessed using a 5-point Likert scale with anchors ranging from 1 = *not at all true of me* to 5 = *very true of me*. The scale is best used within the context of an assigned content area of material (e.g., math, reading, history), rather than as a global measure of students' inclinations toward volitional action. The reliability coefficients for the original 30-item scale (McCann, 1999; McCann & Garcia, 1999) indicated good reliability for the total scale ($\alpha = .87$). Alpha coefficients were also reported for the three subscale factors (self-efficacy enhancement $\alpha = .82$; negative-based incentives $\alpha = .73$; stress reducing actions $\alpha = .69$). Pre- and posttest results supported the stability of the scale ($r = .72$; $p < .001$). In a study using the current 20-item version of the AVSI scale (Husman et al., 2000), reliability estimates remained stable and strong during each of four administrations: Cronbach's α : test 1 = .89, test 2 = .89, test 3 = .91, and final administration 4 = .93.

Validity assessments of the correspondence with and independence from (convergent and divergent validity) other instruments currently used to indicate students' tendencies for self-regulatory behaviors and other related constructs (e.g., initiative, discipline) were carried out.² Hypothesized correspondence of the AVSI with the Action Control Scale (Kuhl, 1994), the Negative Mood Regulation Scale (Catanzaro & Mearns, 1990), Rosenberg's (1965) Self-Esteem Scale, and the Deferment of Gratification Scale (Ray & Najman, 1985) did not reach significance. The nonsignificant findings of these comparisons are believed to be the result of the global focus by the selected scales on individuals' characteristics, in contrast to the very narrow focus by the AVSI on student characteristics with respect to academic situations that particularly emphasize specific courses of study.

An additional comparison was made between the AVSI and selected subscales from the Motivated Strategies for Learning Questionnaire

(MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1991). Low to moderate correlations occurred indicating a modest positive association of student motivation and learning efforts with volitional action. Table 1 shows these correlations.

The modest correlations found between the AVSI and the MSLQ subscales indicated that volition should be viewed as a separate entity. The minimal overlap in construct measurement denotes a similar directionality in responding, which is not unexpected as both instruments indicate tendencies toward self-regulatory behavior.

Exploratory factor analyses tested the independence of the AVSI from other self-regulatory strategies. Using the learning subscales of the MSLQ, 25 of the 30 AVSI items formed independent factors, providing evidence that these items were measuring distinct volitional self-regulatory behaviors unique from the self-regulatory strategies represented in the MSLQ.

A series of hierarchical regression equations investigated the predictive validity of the AVSI for student performance. Analyses indicated that the AVSI items had no direct effect on course performance (as measured by end-of-semester grade). However, the results of a path analysis illustrated direct effects of volitional strategy use on students' use of learning strategies (Table 2), and indirect effects that strengthened the impact of four of the six motivational variables on students' use of learning strategies (Table 3). These results provide evidence to support the contention that volitional self-regulation is a mediator in the motivation-cognitive engagement-performance outcome equation of student learning experiences (Corno & Kanfer, 1993, Garcia, McCann, Turner, & Roska, 1998, Kuhl, 1985).

Table 2. Direct Effects of Volition On Use of Learning Strategies

Learning Strategy	Reg. Coeff.	R^2
Rehearsal	.41	.33
Elaboration	.27	.44
Organization	.27	.25
Critical Thinking	.24	.37
Metacognition	.33	.46
Time Management	.17	.24
Peer Learning	.32	.15
Help-Seeking	.35	.15

Note. All effects significant at the $p < .001$ level except Time Management ($p < .05$). Reg. Coeff. = standardized regression coefficients.

Table 3. Motivational Effects on Learning Strategy Variables When Accounting for Volitional Self-Regulation

Motivational Construct	Direct Effect	Indirect Effect	Total Effect
Intrinsic Goal Orientation			
• On Rehearsal	.20	.13	.33
• On Elaboration	.19	.08	.27
• On Organization	.30	.09	.39
• On Critical Thinking	.32	.08	.40
• On Metacognition	.16	.08	.24
• On Time Management	.03	.04	.07
• On Peer Learning	.14	.14	.28
• On Help Seeking	.07	.13	.20
Extrinsic Goal Orientation			
• On Rehearsal	-.02	.16	.14
• On Elaboration	-.06	.10	.04
• On Organization	.03	.11	.14
• On Critical Thinking	-.01	.10	.08
• On Metacognition	-.05	.09	.04
• On Time Management	-.09	.05	-.04
• On Peer Learning	.11	.17	.28
• On Help Seeking	.08	.15	.23
Control Beliefs			
• On Rehearsal	-.06	.03	-.03
• On Elaboration	-.01	.02	.01
• On Organization	.07	.02	.09
• On Critical Thinking	-.19	.02	-.17
• On Metacognition	-.01	.02	.01
• On Time Management	-.09	.01	-.08
• On Peer Learning	-.24	.03	-.21
• On Help Seeking	-.25	.03	-.22
Test Anxiety			
• On Rehearsal	.07	.08	.15
• On Elaboration	-.06	.05	-.01
• On Organization	-.04	.06	.02
• On Critical Thinking	-.08	.05	-.03
• On Metacognition	-.06	.05	-.01
• On Time Management	-.07	.02	-.05
• On Peer Learning	-.09	.08	-.01
• On Help Seeking	-.12	.08	-.04

Note. Unstandardized regression coefficients (*bs*) are reported.

Notes

1 Revision of the original 30-item scale resulted from cumulative analyses of scale properties that identified overlapping items and those infrequently used in goal-striving efforts.

2 Validity assessments were performed on the 30-item AVSI scale (prior to its refinement into the current 20-item scale).

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For example, when learning a song, students learn how parts of the body and olfactory organs are called in English. It is impossible not to mention the aesthetic motivation. It influences the formation of positive feelings, emotions, develops imagination. The greatest interest among learners is caused by communicative tasks related to foreign-language communication. Children better remember words, if you have to use them in speech. Dialogue in the English lesson serves as a motive for learning new words. The results show that communicative techniques are a favorite activity of students in the lesson. Despite all the variety of methods and techniques in teaching English to junior schoolchildren, some difficulties arose. Student-centered teaching methods include active learning, in which students solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm during class; cooperative learning, in which students work in teams on problems and projects under conditions that assure both positive interdependence and individual accountability; and inductive teaching and learning, in which students are first presented with challenges (questions or. With Learner-Centered Teaching students have the opportunity to implement a real task and acquire 21. century skills and key competences through the process 2. Learner-centered Students effectiveness in their self-regulated learning process also varies depending on the academic environment and students personal goal orientations. In this study, the author analyzed the interactions between these cognitive, volitional, and motivational variables in late adolescence. To achieve this goal, the author proposed a model by means of SEM (Structural Equation Modeling). The investigation was developed with 268 4th-grade secondary school students, from public and private schools, in a northwestern city in Spain. Increasing student learning through volitional control. Teachers College Record, 106(9), 1695-1714. Midgley, C., Maehr, M. L., Hicks, L., Roeser, R., Urdan, T., Anderman, E. M., & Kaplan, A. (2000). performance or volitional control which refers to processes that occur during learning or problem solving (e.g., monitoring, attention focusing); self-reflection which includes processes that take place after performance (e.g., self-evaluation, attribution) and influence fore-thought for the next regulatory cycle. Creating a learning community through the application of a varied set of activating and interactive instructional techniques: group work, whole class discussion, and individual assignments. There was a substantial significant increase in the experimental students spontaneous use of heuristic and self-regulation skills (orienting, planning, monitoring, evaluating).