

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

186,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



Self-Regulation, Self-Efficacy, and Learning Disabilities

Dale H. Schunk and Maria K. DiBenedetto

Abstract

This chapter will discuss the roles of self-regulation and self-efficacy in students with learning disabilities. The guiding conceptual framework is based in social cognitive theory. In this theory, self-efficacy is a key motivational variable and self-regulation is a means for persons to develop a sense of agency, or the belief that they can exert a large degree of control over outcomes in their lives. Following a description of the theory, research is presented showing the operation of self-regulation and self-efficacy in students with learning disabilities. Future research directions are suggested, and implications of theory and research for educational practice are discussed.

Keywords: self-regulation, self-efficacy, motivation, learning disabilities

1. Introduction

In this chapter we discuss the roles of self-regulation and self-efficacy in students with learning disabilities. As used herein, *self-regulation* refers to self-generated cognitions, affects, and behaviors that are systematically directed toward attainment of goals, and *self-efficacy* beliefs are one's perceived capabilities to learn or perform actions at designated levels. This chapter's purpose is important because many students with learning disabilities do not adequately self-regulate their academic performances and hold a low sense of self-efficacy for learning and performing well in educational contexts, both of which can negatively affect their motivation and learning [1, 2].

We initially discuss social cognitive theory as a guiding conceptual framework and situate self-regulation and self-efficacy within this framework. We discuss some research with students with learning disabilities with these constructs to show that helping students to become better self-regulators and improving their sense of self-efficacy can help improve academic motivation and learning. We conclude with implications of theory and research for educational practice. The goal is that the suggestions we make will promote research and application of the principles to help students become more successful in schooling.

2. Background

2.1 Social cognitive theory

Bandura's [3] social-cognitive theory postulates that individuals' functioning involves reciprocal interactions between personal (e.g. cognitions, feelings, skills),

behavioral (e.g. strategy use, help-seeking, actions), and environmental (e.g. classrooms, homes, work environments) factors [4]. These reciprocal influences can be illustrated using self-efficacy as a personal variable. Researchers have shown that self-efficacy beliefs influence such behaviors as choice of tasks, persistence, effort, and achievement [1]. In turn, students' behaviors can modify their self-efficacy. As students work on tasks, they observe their progress toward their learning goals. Progress indicators such as assignments completed convey to them that they are capable of performing well, which enhances self-efficacy for continued learning [1].

The hypothesized reciprocal influences between self-efficacy and environmental variables have been demonstrated in research on students with learning disabilities, many of whom hold low self-efficacy for learning [5]. Persons in their environments may react to them based on attributes typically associated with them rather than based on their behaviors. For example, a teacher may judge such students as less capable than other learners and hold lower academic expectations for them, even in areas where students with learning disabilities are performing adequately. In turn, teacher feedback can affect self-efficacy. Persuasive statements such as, "I know that you can do this," can raise self-efficacy.

Learners' behaviors and environments can influence one another. When teachers present information, they may ask students to direct their attention to a slide projected on the board. Environmental influence on behaviors occurs when students attend to the visual without much conscious deliberation. Students' behaviors can alter the instructional environment. If teachers ask questions and students give incorrect answers, teachers may reteach key points rather than continue the lesson.

Social cognitive theory stresses the idea that people strive to develop a sense of *agency* [6], or the belief that they can exert a large degree of control over important events in their lives. Self-regulation and self-efficacy are integral means for experiencing a stronger sense of agency. Students who use self-regulatory skills are apt to feel efficacious about learning and performing well, which in turn can boost their motivation, effort, persistence, and learning. Their perceptions that they are learning strengthen their agency beliefs.

2.2 Self-regulation

Zimmerman [7] conceived of self-regulation as comprising forethought, performance, and self-reflection phases. The forethought phase precedes performance. It is the time when learners set goals and decide on strategies to use to help attain the goals. Forethought also is the time when learners attend to the physical and social environments. They obtain materials they will need to perform the task and make arrangements for working with others if needed. Learners decide on when, where, and how they will work on the task.

Time management comes into play during forethought. Students decide on how much time to spend on the task and subcomponents of it. During forethought learners also motivate themselves to work on the task, such as by experiencing self-efficacy that they can be successful and reminding themselves of the value or importance of the task.

During performance, learners instruct themselves as they work on the task and monitor the outcomes of their efforts. They determine whether their strategies are working out well and whether they are making goal progress.

Periods of self-reflection may come when learners pause during learning or when the task is completed. Self-reflection is the time of self-evaluation when learners evaluate how successful they were. They decide if they need to change their strategy or establish better working conditions. They also make *attributions*, or perceived causes of their outcomes. Attributions address the "why" question—why

was I successful or not successful. Based on their attributions and evaluations, they may decide to continue with the same strategy or change it.

Research with students with learning disabilities often shows problems in all three phases [8]. They may not devote sufficient time in forethought to carefully plan their goals and strategies and they may enter the task with low self-efficacy for performing well. During performance they may not attend carefully to the task or monitor their performance to determine goal progress. They also may not adequately evaluate their performance during self-reflection and make attributions that do not motivate. For example, if they had difficulty completing the task, they may attribute it to low ability rather than insufficient effort.

2.3 Self-efficacy

Researchers have shown that self-efficacy can affect choices, effort, persistence, and achievement [1]. Compared with less-efficacious students, those with self-efficacy for learning and performing well are apt to choose to engage in learning, expend effort to succeed, persist when they encounter difficulties, and achieve at higher levels. Students with learning disabilities are more likely to hold lower self-efficacy than students without disabilities, possibly because of an internalized history of repeated academic failures [9, 10].

Bandura [6] hypothesized that self-efficacy beliefs are formed based on four sources: actual performances, vicarious experiences, forms of social persuasion, and physiological and affective indexes. Actual performances constitute the most reliable source because they provide learners with evidence of their capability to succeed. Accomplishments require learners to adapt and adjust to different circumstances, and repeated successes in doing so can enhance self-efficacy. Teachers who provide students with opportunities to learn and perform successfully likely build students' self-efficacy for future similar tasks [11].

Vicarious experiences occur through observing others [6]. In general, observing others succeed raises observers' self-efficacy whereas observed failures can lower it. But perceived similarity of model to observer is important. Observers are more swayed when they perceive themselves to be similar to models.

Forms of social persuasion can raise self-efficacy including for students with learning disabilities [12]. Teachers telling students that they can do something is apt to raise the students' self-efficacy for succeeding. However, the effects of persuasive information can be outweighed by actual performances. Learners told that they are capable will not feel efficacious if they subsequently attempt the task and perform poorly.

Physiological and affective symptoms constitute a source of self-efficacy [6]. Students who experience anxiety or sweating when taking an exam may have low self-efficacy for success, whereas those who feel calm and anticipate performing well are likely to have higher self-efficacy. Students who feel anxious can attempt to gain control over the situation, thereby increasing their sense of agency.

Agency (or *perceived control*) is an important variable stressed by social cognitive theory. A responsive environment is needed for perceived control to exert its effects [6]. Students may believe that they can control their use of learning strategies, effort, and persistence, yet still hold low self-efficacy because they believe that the learning is unimportant and not worth the investment of time. Or they may hold high self-efficacy yet make little effort to learn because they believe that in their present environment learning will not be rewarded [1]. Research supports the importance of professional development to build self-efficacy and agency for teachers who work with students with learning and reading disabilities and ADHD [13, 14].

Self-efficacy applies to teachers as well as students. *Teacher self-efficacy* is the belief that a teacher can help promote student learning [15]. Teachers with higher self-efficacy should be more likely to develop challenging activities, help students succeed, and persist with students who have difficulties. Higher teacher efficacy also is associated with creating a positive classroom climate, supporting students' ideas, and meeting the learning needs of all students [15].

It is beneficial for self-efficacy to correspond closely to students' actual skills. Students who underestimate their capabilities may be less motivated to achieve, believing that they will perform poorly. Students who overestimate their capability are likely to encounter failures, which should lower their self-efficacy. Inaccurate assessments of capabilities, which often are found among students with learning disabilities [5], can hinder the quality and quantity of academic motivation and achievement. Students with learning disabilities may not fully understand the task demands which may lead them to make overly-high self-efficacy estimates [16]. Elementary school students with learning disabilities often have lower academic self-efficacy when compared to their typically achieving peers [17].

3. Self-regulation and self-efficacy research

3.1 Students with learning disabilities

According to the U.S. Federal guidelines for identifying students with disabilities, students must meet three criteria. They must demonstrate a severe discrepancy between intellectual ability and achievement. The difficulties they experience are not the result of any known condition. They must show a need for special education services [9]. These criteria are indicative of the learning differences found between students with and without learning disabilities.

Students with learning disabilities are more likely to demonstrate poorer self-regulatory skills and report lower self-efficacy beliefs than their peers without learning disabilities, which may be a consequence of internalizing a history of repeated failures, frustrations, poor social interactions, and lower levels of performance [9, 18]. This section summarizes some self-regulation and self-efficacy research with students with learning disabilities.

Students who are diagnosed with a specific learning disorder typically perform poorly in reading, writing, and mathematics, which are subjects considered critical for school success. Students with learning disabilities tend to have lower levels of self-efficacy and lower levels of hopeful feelings [10].

Lackaye et al. [10] compared 123 Israeli adolescents with learning disabilities with an equal number of peers without learning disabilities. Students were matched by school grades, grade level, and gender. Variables such as academic self-efficacy, effort, hope, and mood were assessed. Results showed that students with learning disabilities reported lower levels of academic self-efficacy, which suggests that these students have fewer successful academic experiences than their peers. Students with learning disabilities also were found to have lower levels of effort, hope, and mood. Students who are self-efficacious are likely to engage in productive self-regulatory behaviors such as setting high goals, persisting, and expending effort when faced with challenges [1]. Conversely, students who have not had successful experiences are likely to hold lower self-efficacy about similar learning experiences [6, 8, 10]. These results highlight the challenges faced by students with learning disabilities. In addition to surveys, Lackaye and his colleagues interviewed students with learning disabilities who reported being aware of their difficulties,

felt stressed over having to study many more hours than others appeared to need to study to obtain passing grades, and were less hopeful with depressive tendencies.

Klassen and Lynch [12] examined self-efficacy from the perspective of students with learning disabilities and their teachers. Students in grades 8–9 with learning disabilities participated in focus group interviews; teachers who were specialists in teaching students with learning disabilities were individually interviewed. Students and teachers acknowledged the role of self-efficacy beliefs in achievement, specifically indicating that lower levels of self-efficacy can hinder learning and achievement. The teachers noted the “fragility of the academic beliefs of their students” (p.498), indicating they put effort into helping students with learning disabilities build and sustain self-efficacy by reducing levels of frustration.

Interventions for building academic self-regulation and self-efficacy for students with learning disabilities are essential to foster academic success. Butler [19] conducted case studies on students with learning disabilities in postsecondary education programs. Participants ranged in ages from 19 to 48 and were diagnosed with disabilities in mathematics, reading, short-term auditory memory, abstract reasoning, and ADHD. The intervention consisted of need-based tutoring of 2–3 hours per week for two semesters. Tutoring sessions, which included cognitive coaching and modeling, focused on self-regulation by helping students become more metacognitively aware of: task demands and performance criteria; strategy selection, use and modifications; self-monitoring of performance; and self-evaluations and self-judgments. Results showed that the intervention raised students’ performances, as well as their metacognition and self-efficacy beliefs.

Many students with learning disabilities struggle with reading (e.g., comprehension, spelling, writing), as well as with phonological awareness (sounds and words represent symbols) and phonemic awareness (words consist of sounds; [9]). Reading is essential for academic success and difficulties can lower learners’ motivation and achievement across academic content areas. Most students with learning disabilities have difficulties in reading comprehension [20].

Schunk and Rice [21–23] conducted self-regulation and self-efficacy studies on children with reading disabilities. These studies demonstrated that through modeling, goal setting, self-directed practice, and feedback on the value of applying strategies, students’ self-efficacy for reading comprehension and their performances could be increased. More recent studies have focused on specific self-regulated learning strategies such as self-monitoring to improve self-efficacy for students with reading disabilities [24]. Dyslexia constitutes 3–10% of reading disabilities [25]. These students face academic challenges including sustaining motivation to learn. Self-monitoring involves keeping track of whether one’s targeted behavior has occurred. It is one of the most important and heavily researched strategies for self-regulated learners with disabilities [26].

Kanani et al. [24] randomly assigned students with dyslexia to an experimental condition that involved self-monitoring training or a control condition where they received small group instruction. Students in both conditions were pre- and post-tested on self-efficacy and achievement and an additional assessment was obtained two months after the intervention. Results indicated that students who received self-monitoring training showed increased self-efficacy and higher achievement compared with students in the control group. Keeping track of one’s performance can have a powerful impact on reading achievement and self-efficacy among students with dyslexia.

Research on interventions to help increase self-regulation and self-efficacy for reading on students with reading disabilities is limited. Much of the research has focused on students with writing disabilities using the Self-Regulated Strategy Development (SRSD) program. Mason [27], for example, studied struggling

readers' comprehension of expository texts. The intervention included teaching SRSD strategies for writing and strategies to improve reading comprehension. The SRSD involved six steps including processes such as self-monitoring, self-instruction, goal setting, and self-reinforcement. The TWA strategy (Think Before Reading, While Reading, After Reading) provided students with the framework for better reading comprehension. Teaching struggling readers strategies for writing and reading expository texts can lead to better understanding. Students who are able to read informative texts and monitor their understanding are more likely to feel self-efficacious to do so. Providing specific strategies to students with reading disabilities enhances their cognitive judgments of personal capability to comprehend when reading and reduces the likelihood of feelings of diminished self-worth due to repeated failed reading attempts [28].

Tabassam and Grainger [17] examined self-efficacy differences among elementary students with ADHD, with comorbidity (ADHD and a learning disability), and students without any disabilities. Students were administered measures of self-efficacy and attributions (beliefs about perceived causes of outcomes). Students with learning disabilities had been previously shown to attribute failures to internal causes such as low ability and successes to external causes such as luck. These students experience repeated failures and high levels of frustration. They compare themselves to other classmates who do not struggle in the same way they do. This internalization of feelings contributes to attributing their performance inward, toward themselves. Findings from this study revealed that both groups of students with disabilities experienced lower self-efficacy and attributional beliefs directed toward themselves than their peers without disabilities.

3.2 Sources of self-efficacy

Students with disabilities often struggle academically and are less likely to set high goals, persist when faced with difficulties, or attribute failure to effort and poor strategy use [29]. The sources of self-efficacy can help students with disabilities feel more self-efficacious. Teachers who give students opportunities for success (enactive mastery) can build self-efficacy by assigning moderately challenging tasks that the students can succeed at with effort [12, 30]. Students with learning disabilities tend to experience anxiety and nervousness. They are also often aware of the learning challenges they face. Teachers can provide models (vicarious learning) such as peers or others who can demonstrate skills and strategies to complete the targeted task. Teachers can also take advantage of access to the Internet by using YouTube videos or other video models. Videos provide learners with opportunities to repeatedly watch the model because they can stop and restart the video as often as needed. This can provide specific information about how to approximate the desired behavior.

Social or verbal persuasion provides learners with information that can help sustain motivation [6]. Teachers can use verbal persuasion by reminding students of what needs to be done as they encourage them to perform the activity [30]. Verbal persuasion must be genuine and credible and followed by constructive feedback upon task completion. Research shows the opposite can happen as well. Students who report feeling that their teacher did not acknowledge how hard they worked or who made comments that suggest their work was not up to par may feel lower levels of self-efficacy [12].

Students with learning disabilities may experience physiological and affective reactions. A history of repeated failures and frustrations can result in high levels of anxiety, frustration, distress, and learned hopelessness. These negative feelings and thoughts can trigger additional stress and agitation [28]. Teachers can provide

students with relaxation training and refer them to counseling to help work through feelings of anxiety. Teachers and counselors can teach students strategies for coping with irrational or fear-of-failure thoughts, which can lower self-efficacy [30]. In addition, providing students with disabilities opportunities to practice and emulate tasks to be done with constructive feedback from the teacher may help reduce anxiety when the tasks are ready to be carried out for a grade [1].

3.3 Self-efficacy calibration studies

Students who can accurately estimate their skill for performing a task are considered accurate calibrators [31]. Exceptional students often overestimate their capabilities [16], which can result in exerting less effort in preparing for a task. Struggling students may miscalibrate their self-efficacy because they underestimate the task demands [16]. DiBenedetto and Zimmerman [32] found that students who were at-risk for learning science overestimated their capability to perform well on a designated test.

Crane et al. [33] examined calibration accuracy among special education students using academic (vocabulary words) and nonacademic (arranging six tiles to tell a story) tasks. Results indicated that even though students performed comparably on the academic and nonacademic tasks their self-efficacy was much higher for the nonacademic tasks. When tested on a completely new task, their calibration for completing the task worsened. They continued to report high self-efficacy beliefs even when they did not get any answers correct. These findings suggest that teaching metacognitive strategies—helping students determine when they know something and when they do not—might improve self-efficacy calibration [28].

In the Klassen and Lynch [12] study, adolescents with learning disabilities rated their self-efficacy higher than would be expected given their low performance. Each of the teachers who was interviewed indicated that the students with learning disabilities lacked an awareness of their strengths and weaknesses and that this lack of self-knowledge influenced their self-efficacy judgments. The teachers suggested that students overestimated their self-efficacy as a means of self-protection. Students with disabilities may have poor metacognitive awareness and feel they have personal limitations. These beliefs may lead them to overestimate self-efficacy to protect their self-images [28, 34].

4. Implications of theory and research for educational practice

Theory and research suggest implications for educational practice. Learners with learning disabilities may hold inaccurate self-efficacy beliefs. They may judge their learning capabilities lower than they actually are, or conversely, they may feel overly optimistic about what they can learn. Either situation can be problematic for motivation and learning.

One implication is that ways to convey information to students about their capabilities should be integrated into instructional approaches. Giving students practice with feedback provides performance information. Vicarious information can be conveyed through live or video models. Teachers can encourage students with verbal persuasion, and negative emotions that may lower self-efficacy can be addressed by showing students what they have accomplished.

Research also suggests several mechanisms whereby self-efficacy can be developed. Methods that are beneficial for self-efficacy development include having learners set realistic and short-term goals, teaching them strategies having them practice applying these, and having them monitor their learning progress. Although

students with disabilities often need skill remediation, they also need information that conveys to them that they are capable of learning and performing well.

A sense of collective self-efficacy can be developed when students work in groups. It is important that students with disabilities contribute productively to the group. Teachers should structure group tasks such that all members have responsibilities and can demonstrate learning and performance accomplishments.

5. Future research directions

Existing research documents the importance of self-regulation and self-efficacy for academic performance and achievement among learners with disabilities. Future research directions should include sociocultural influences, technology uses, and out-of-school contexts.

5.1 Sociocultural influences

As schools become increasingly diverse, it is important to study self-regulation and self-efficacy development among students from different cultures. *Culture* refers to beliefs and value systems that can influence motivation and learning [35]. In a recent research review, McNerney and King [36] found that most studies do not use culture, race or ethnicity as independent variables; rather, countries outside of the U. S. accept self-regulation processes such as self-efficacy as part of a theoretical framework and examine these processes within different learning contexts. McNerney and King discuss the challenge with finding studies that examine cultural influences on core theoretical constructs that have been primarily established in the U. S.

A cultural dimension that has been explored widely in self-efficacy research and is relevant to self-regulation is individualism and collectivism. Individualistic cultures tend to stress independence and individual initiative, whereas collectivist cultures emphasize group identity and “we” consciousness [37]. The United States and Western European countries are high in individualism, whereas Asian cultures tend to be more collectivist. Researchers comparing these cultures typically find that individuals from collectivist cultures judge self-efficacy lower than do those from more individualistic cultures including when performances are equivalent or higher. Further, the lower self-efficacy beliefs are typically better calibrated with actual performances [37]. These results suggest that collectivist cultures may promote modesty in self-efficacy judgments. They also raise the issue of whether collective self-efficacy may be a better predictor of performance in these cultures than individual self-efficacy [37].

Classrooms have students from myriad cultural backgrounds. While self-regulation and self-efficacy may be universal, the challenge for educators is to understand how students’ values, beliefs, and sociocultural experiences can affect self-regulation and self-efficacy. Researchers have not examined in depth the roles of cultural variables in self-regulation and self-efficacy among students with disabilities. More cross-cultural studies are needed examining the potential culturally-specific influences on learning, performance, and self-regulation.

5.2 Technology uses

Much research related to technology has focused on measuring students’ self-efficacy for using computers [38]. A literature review of computer-based learning environments (CBLEs) examined relationships between computer self-efficacy,

self-regulated learning processes, and performance outcomes, and found three significant outcomes [39]. The first is that there are both behavioral factors (e.g. familiarity with being in a CBLE) and psychological factors (e.g. positive attitude and curiosity about being in a CBLE) that are positively related to computer self-efficacy. Second, computer self-efficacy is positively related to self-regulated processes such as navigational strategies and metacognition. Third, computer self-efficacy is related to learning outcomes.

A new area of inquiry is game-based learning. Video gaming can be used to increase and sustain motivation and interest, and help students make connections to real-life situations [40]. Video games capture learners' attention, are fun and exciting to play, often involve cognitive flexibility and the ability to strategize, are familiar to many learners, and can be developed to target learning goals. Good instructional games can take advantage of learners' attention by allowing them to identify with avatars that represent the players or other characters (i.e. a marine biologist), which helps boost intrinsic interest in the learning.

The role that technology may play in the development of self-regulation skills and self-efficacy in various settings (e.g., CBLEs, gaming, online social media) should be investigated among students with disabilities. The motivational inducements afforded by technology may have the desirable effect of gaining and holding learners' attention on the learning situation, which should enhance their self-efficacy as they experience success. In addition, cell phones and other electronic devices may help students with disabilities self-monitor by setting alarms for due dates for assignments or reminders to be working on school assignments. But conversely, the extra features (audio, video) of technology may prove distracting and tax students' working memories, which would have the opposite effect. Added research is needed that explores variables associated with technology to determine how instructional conditions can be ideally structured for students with disabilities.

5.3 Out-of-school contexts

Most self-regulation and self-efficacy research has been done with learners in formal academic settings (e.g., classrooms). But much learning occurs outside of these settings such as in homes, during volunteer activities, and in the context of mentoring interactions. Homework—a key instructional variable—requires good self-regulatory skills to complete satisfactorily.

To test the roles of self-regulation and self-efficacy in motivation and learning among students with disabilities, more research is needed in nonacademic settings where students learn. For example, mentoring relationships can enhance mentees' self-regulation and self-efficacy [41]. Mentors are models who show how tasks are completed and what proficiency levels are required for successful completion of tasks. They demonstrate self-regulation and how to cope in challenging situations. Through the development self-regulation, mentors can foster mentees' self-efficacy and help them become independent, adaptable, and self-directed [42], but further research is needed on mentoring variables that may impact self-efficacy among students with disabilities such as the types of individuals who may make good mentors.

Another issue is that self-efficacy sources outside of school may conflict with those experienced in school. Students may develop self-efficacy beliefs in school through performance accomplishments, exposure to competent models, and teacher encouragement, but those same positive sources may not be present outside of school. An important research question is how students reconcile discrepant self-efficacy information. It may be valuable to provide instruction to parents and others outside of school who work with students with disabilities on how to inculcate self-regulatory skills and positive self-efficacy beliefs to foster motivation and learning.

IntechOpen

Author details

Dale H. Schunk^{1*} and Maria K. DiBenedetto²

1 Department of Teacher Education and Higher Education, School of Education Building, The University of North Carolina at Greensboro, Greensboro, NC, USA

2 Bryan School of Business and Economics, The University of North Carolina at Greensboro, Greensboro, NC, USA

*Address all correspondence to: dhschunk@uncg.edu

IntechOpen

© 2021 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

References

- [1] Schunk, D. H., & DiBenedetto, M. K. (2016). Self-efficacy theory in education. In K. R. Wentzel & D. Miele (Eds.), *Handbook of motivation at school* (2nd ed., pp. 34-54). New York: Routledge.
- [2] Schunk, D. H., & DiBenedetto, M. K. (2018). Expectations in the academic domain. In G. Oettingen, A. T. Sevincer, & P. M. Gollwitzer (Eds.), *The psychology of thinking about the future* (pp. 153-173). New York: Guilford Publications.
- [3] Bandura, A. (1986). *Social foundations of thought and action*. Upper Saddle River, NJ: Prentice Hall.
- [4] Usher, E. L., & Schunk, D. H. (2018). Social cognitive theoretical perspective of self-regulation. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed., pp. 19-35). New York: Routledge.
- [5] Licht, B. G., & Kistner, J. A. (1986). Motivational problems of learning-disabled children: Individual differences and their implications for treatment. In J. K. Torgesen & B. W. L. Wong (Eds.), *Psychological and educational perspectives on learning disabilities* (pp. 225-255). Orlando: Academic Press.
- [6] Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- [7] Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (13-39). San Diego, CA: Academic Press.
- [8] Schunk, D. H., & DiBenedetto, M. K. (2020). Social cognitive theory, self-efficacy, and students with disabilities: Implications for students with learning disabilities, reading disabilities, and attention-deficit/hyperactivity disorder. In A. J. Martin, R. A. Sperling, & K. J. Newton (Eds.), *Handbook of educational psychology and students with special needs* (pp. 243-261). New York: Routledge.
- [9] Heward, W. L., Alber-Morgan, S. R., & Konrad, M. (2017). *Exceptional children: An introduction to special education*. Boston: Pearson Education.
- [10] Lackaye, T., Margalit, M., Ziv, O., & Ziman, T. (2006). Comparisons of self-efficacy, mood, effort, and hope between students with learning disabilities and their non-LD-matched peers. *Learning Disabilities Research and Practice*, 21, 111-121.
- [11] Zimmerman, B. J., & DiBenedetto, M. K. (2008). Mastery learning and assessment: Students and teachers in an era of high stakes testing. *Psychology in the Schools*, 45, 206-216.
- [12] Klassen, R., & Lynch, S. L. (2007). Self-efficacy from the perspective of adolescents with LD and their specialist teachers. *Journal of Learning Disabilities*, 40, 494-507.
- [13] Bernadowski, C. (2017). From novice to expert: The perceived self-efficacy of teachers implementing Orton-Gillingham with children with dyslexia – a case study. *Journal on English Language Teaching*, 7(2), 51-58.
- [14] Latouche, A. P., & Gascoigne, M. (2017). In-service training for increasing teachers' ADHD knowledge and self-efficacy. *Journal of Attention Disorders*, doi:10.1177/1087054717707045
- [15] Klassen, R. M., Tze, V. M. C., Betts, S. M., & Gordon, K. A. (2011). Teacher efficacy 1998-2009: Signs of progress or unfulfilled promise? *Educational Psychology Review*, 23, 21-43.

- [16] Klassen. R. (2002). A question of calibration: A review of the self-efficacy beliefs of students with learning disabilities. *Learning Disability Quarterly* 25, 88-102.
- [17] Tabassam, W., & Grainger, J. (2016). Self-concept, attributional style and self-efficacy beliefs of students with learning disabilities with and without attention deficit hyperactivity disorder. *Learning Disability Quarterly*, 2, 141-151.
- [18] Major, A., Martinussen, R., & Wiener, J. (2013). Self-efficacy for self-regulated learning in adolescents with and without attention deficit hyperactivity disorder (ADHD). *Learning and Individual Differences*, 27, 149-156.
- [19] Butler, D. L. (1998). The strategic content learning approach to promoting self-regulated learning: A report of three studies. *Journal of Educational Psychology*, 90, 682-697.
- [20] Gajria, M., Jtendra, A. K. Sood, S., & Sacks, G. (2007). Improving comprehension in expository text in students with LD: A research synthesis. *Journal of Learning Disabilities*, 40, 210-225.
- [21] Schunk, D. H., & Rice, J.M. (1991). Learning goals and progress feedback during reading comprehension instruction. *Journal of Reading Behavior*, 23, 351-364.
- [22] Schunk, D. H., & Rice, J. M. (1992). Influence of reading comprehension strategy instruction on children's achievement outcomes. *Learning Disability Quarterly*, 15, 51-64.
- [23] Schunk, D. H., & Rice, J. M. (1993). Strategy fading and progress feedback: Effects on self-efficacy and comprehension among students receiving remedial reading services. *Journal of Special Education*, 27, 257-276.
- [24] Kanani, Z., Adibsereshki, N., & Haghgoo, H. A. (2017). The effect of self-monitoring training on the achievement motivation of students with dyslexia, *Journal of Research in Childhood Education*, 31, 430-439.
- [25] Snowling, M. J. (2013). Early identification and interventions for dyslexia: A contemporary view. *Journal of Research in Special Educational Needs*, 13(1), 7-14.
- [26] Mason, L. H., & Reid, R. (2018). Self-regulation: Implications for individuals with special needs. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed., pp. 473-484). New York: Routledge.
- [27] Mason, L. H. (2013). Teaching students who struggle with learning to think before, while, and after reading: Effects of self-regulated strategy development instruction. *Reading & Writing Quarterly*, 29, 124-144.
- [28] Zimmerman, B. J., Schunk, B. J., DiBenedetto, M. K. (2017). Role of self-efficacy and related beliefs in self-regulation of learning and performance. In A. Elliot, C. Dweck, & D. Yeager (Eds.), *Handbook of competence and motivation* (2nd ed., pp. 83-114). New York: Guilford Press.
- [29] Schunk, D. H., & Bursuck, W. D. (2013). Self-regulation and disability. In M. L. Wehmeyer (Ed.), *The Oxford handbook of positive psychology and difficulty* (pp265-278). New York: Oxford University Press.
- [30] Margolis, H., & McCabe, P. P. (2006). Improving self-efficacy and motivation: What to do, what to say. *Intervention in School and Clinic*, 41, 218-217.

- [31] Cleary, T. (2009). Monitoring trends and accuracy of self-efficacy beliefs during interventions: Advantages and potential applications to school-based settings. *Psychology in the Schools*, 46, 154-171.
- [32] DiBenedetto, M. K., & Zimmerman, B. J. (2010). Differences in self-regulatory processes among students studying science: A microanalytic investigation. *The International Journal of Educational and Psychological Assessment*, 5, 2-24.
- [33] Crane, N, Zusho, A., Ding, Y., & Cancelli, A. (2017). Domain-specific metacognitive calibration in children with learning disabilities. *Contemporary Educational Psychology*, 50, 72-79.
- [34] Klassen, R. M. (2006). Too much confidence? The self-efficacy of adolescents with learning disabilities. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 181-200). Greenwich, CT: Information Age Publishing.
- [35] McInerney, D. M. (2008). The motivational roles of cultural differences and cultural identity in self-regulated learning. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 369-400). New York: Lawrence Erlbaum Associates.
- [36] McInerney, D. M., & King, R. (2018). Culture and self-regulation in educational contexts. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed., pp. 485-502). New York: Routledge.
- [37] Klassen, R. M. (2004). Optimism and realism: A review of self-efficacy from a cross-cultural perspective. *International Journal of Psychology*, 39, 205-230.
- [38] Joo, Y.J., Bong, M., & Choi, H. J. (2000). Self-efficacy for self-regulated learning, academic self-efficacy, and internet self-efficacy in web-based instruction. *Educational Research Technology and Development*, 48(2), 5-17.
- [39] Moos, D. C., Azevedo, R. (2009). Learning with computer-based learning environments: A literature review of computer self-efficacy. *Review of Educational Research*, 79, 576-600.
- [40] Foster, A. (2008). Games and motivation to learn science: Personal identity, applicability, relevance and meaningfulness. *Journal of Interactive Learning Research*, 19, 597-614.
- [41] Schunk, D. H. & Mullen, C. A. (2013). Toward a conceptual model of mentoring research: Integration with self-regulated learning. *Educational Psychology Review*, 25(3), 361-389.
- [42] DiBenedetto, M. K., & White, M. C. (2013). Applying the model of development of self-regulatory competence to mentoring. In H. Bembenutty, T. Cleary, A. Kitsantas, (Eds.), *Applications of self-regulated learning across diverse disciplines* (pp. 445-472). Charlotte, NC: Information Age Publishing.