

Elementary Research Guide (Grades Pre-K – 5)

College and Career Competency: *Self-Efficacy*

Definition:

Self-efficacy refers to perceptions an individual has about his or her capabilities to perform at an expected level, achieve goals, and complete moderately challenging tasks (Noonan & Gaumer Erickson, 2018, p. 23).

Essential Components for Students:

1. Focus on your effort, progress and learning.
2. Take steps to increase confidence in your abilities.

Competency Sequence for Students:

These targets describe how students demonstrate competency knowledge at each grade cluster (Noonan & Gaumer Erickson, 2018). By the end of each grade cluster, each student:

	Self-Efficacy
Pre-K	<ul style="list-style-type: none"> • Demonstrates an understanding that making mistakes is normal. • Continues work on a challenging task by trying different ways to solve a problem.
K-2	<ul style="list-style-type: none"> • Demonstrates approaching a challenging task with recognition that ability grows with effort. • Describes mistakes as normal and opportunities to learn. • Provides examples of growth mindset self-talk statements. • Describes some basic structures of the brain and understands that a brain can “grow” and change with practice.
3-5	<ul style="list-style-type: none"> • Explains the difference between a fixed mindset and a growth mindset. • Identifies times when their efficacy was strong and times when it was lacking. • Provides examples of how effort relates to accomplishing a challenging task and incorporates concept to own life. • Describes ways to increase self-confidence/belief in ability for various challenging tasks. • Demonstrates verbal persuasion and growth mindset self-talk. • Explains how our brain changes as it is challenged with new information (basics of neuroplasticity) and applies this to growth versus fixed mindsets.

Research:

- A positive self-concept is important for school adjustment (Mantzicopoulos, 2006). Preschool age children can bring a social mindset to school that encompasses positive self-regard and self-competence beliefs (Cvencek, Greenwald, & Meltzoff, 2016; McElroy, 2015).
- Goddard (2001) surveyed 452 teachers at 47 urban elementary schools in a large Midwestern district to examine the relationship between teacher self-efficacy and differences in school achievement. He found that teacher self-efficacy based on mastery experience was a significant predictor of a school’s collective efficacy, and further that collective efficacy was strongly related to differences in student performance between schools.

- For young children who haven't yet had the social or academic experiences to form accurate self-beliefs about capability, getting honest and supportive feedback from parents and teachers that helps build a positive self-concept is important for development, achievement, and social interactions (Myers-Walls, Hinkley, & Reid, 2015).
- Developmental research indicates that before middle childhood (age 7-12), children have a limited capacity for judging their abilities accurately (Davis-Kean, Jager, & Collins, 2009). Young children tend to overvalue their competence because they receive very positive feedback for efforts that are not necessarily related to individual accomplishment (Mantzicopoulos, 2006).
- Lee and Jonson-Reid (2016) found in their study of urban students in 1st – 3rd grade that children with a highly developed sense of self-efficacy had significantly greater reading achievement. Task-specific self-efficacy, or the student's belief that it was possible to complete the task, has been found to have the largest impact on reading achievement.
- Certain teaching practices can also lower students' self-efficacy. Results from a three-year study of students in grades 2-4 suggest that certain classroom instructional practices, such as grouping students by ability, rewarding correct answers rather than effort, and having high expectations of some children and low expectations of others, can impact how capable a child believes him- or herself to be, lowering self-efficacy (Hughes & Chen, 2011).
- Researchers in France (Joët, Usher, & Bressoux, 2011) examined sources of self-efficacy in mathematics and French (equivalent to English Language Arts) in a sample of 395 third grade students. They concluded that interventions designed to raise student self-efficacy should target all four sources of self-efficacy (mastery experience, vicarious experience, social persuasion, and physiological and emotional states). Among the specific findings:
 - The 3rd grade girls perceived fewer mastery experiences in math than boys did. The girls reported receiving fewer positive social messages about their performance in math than the boys did. Girls reported lower self-efficacy in math. In French class, there was no difference between boys and girls in terms of sources of self-efficacy.
 - There were no significant differences found based on classroom context; however, students in classes with higher average self-efficacy reported feeling more capable.
 - Perceived mastery experiences were the primary source of self-efficacy in both domains, accounting for over half of the variance in academic self-efficacy. Mastery experience was predictive of achievement.
 - Social persuasions predicted math self-efficacy.
- In a study of students in grades four through eight, researchers examined which sources of self-efficacy had the greatest impact in math and reading (Butz & Usher, 2015). Specifically, they surveyed students about these four sources: interpreting past experiences and performance (mastery), messages received from others (social persuasion), what they see others do (vicarious experience), and how they feel while doing or thinking about an activity (physiological and affective state). The researchers found that mastery and social persuasion were the most frequently reported sources of self-efficacy for math and reading in these grades.
- Martin and Rimm-Kaufman (2015) examined how student self-efficacy for math and the quality of student-teacher interaction impacted emotional and social engagement in fifth grade math. Getting students to engage in math in late elementary school is important because of the cumulative nature of math learning (i.e., if students fall behind during late elementary school, they will have difficulty catching up in later grades). Also, by the time students reach late elementary school grades, they typically have a well-developed sense of self-efficacy, which can be either low or high. Students with high self-efficacy will persist and try hard when presented

with challenges, while students with low self-efficacy will dwell on past mistakes and not try as hard when presented with a challenge. Among the findings:

- Students with higher math self-efficacy reported higher levels of emotional and social engagement in math class. Classrooms with high levels of emotional support, where interactions between teachers and students were sensitive and responsive, had students reporting similar social and emotional engagement, regardless of their initial self-efficacy.
- The researchers suggest that supporting the emotional needs of students with lower levels of self-efficacy is important for their emotional and social engagement, more so than organizational or instructional supports.

Assessments:

- The *Self-Efficacy Formative Questionnaire* (Gaumer Erickson, Soukup, Noonan, & McGurn, 2016) is a 13-item instrument that measures students' proficiency in two essential components of self-efficacy: understanding that ability grows with effort and belief in their own ability to accomplish specific challenging tasks. The Self-Efficacy Formative Questionnaire results can be used by both teachers and students to assess relative strengths and areas for improvement. Students are asked to rate themselves on each item using a five-point Likert-type scale (1=not very like me and 5=very like me); results are displayed on a 100-point scale. The results are automatically graphed for students once they complete the questionnaire, enabling them to immediately reflect on their results. Results are also available to the teacher for individual students and in aggregate. The questionnaire is currently being beta-tested with middle and high school students; while it is written at an eighth-grade reading level per the Flesch-Kincaid readability score, it can be adapted for grades 1-5 as necessary. The following example items represent each of the two essential components:

- I believe hard work pays off. (Ability can grow)
- I can figure out anything if I try hard enough. (Belief in own ability)

Teachers can access the questionnaire by setting up an account through <http://researchcollaborationsurveys.org> and following the instructions to launch a survey and administer it to students. Students (and teachers) can use individual questionnaire results to identify self-efficacious behaviors that students can focus on cultivating or strengthening. A limitation of this questionnaire is that it is not content or context specific; additionally, it is not normed, and there are no reverse-scored items. It is most helpful as a student reflection and teacher planning tool.

- The Children's Self-Efficacy Scale (Bandura, 2006) is designed for youth aged 10 to 15 and includes 22 items within three domains: self-efficacy in enlisting social resources, self-efficacy for academic achievement, and self-efficacy for **self-regulated** learning. Youth identify their level of confidence by writing a number between 0 (cannot do at all) and 100 (highly certain can do). The scale is available at www.strivetogether.org/sites/default/files/images/9%20Childrens%20Self-Efficacy%20Scale.pdf. Examples of questions in each domain are listed below.
 - Get a friend to help me when I have social problems (enlisting social resources)
 - Learn general mathematics (academic achievement)
 - Get myself to study when there are other interesting things to do (**self-regulated** learning)
- The Academic Efficacy subscale from Patterns of Adaptive Learning Scales (PALS) is a reliable measure of self-efficacy in a specific class (Midgley et al., 2000). It was designed for grades 3 through 9 and includes five questions rated on a Likert scale ranging from 1 (not at all true) to 5

(very true). The scale is available at www.strivetogether.org/sites/default/files/images/3%20PALS_Student%20Academic%20Efficacy%20subscale%20from%20Patterns%20of%20Adaptive%20Learning%20Scales.pdf. The items are:

1. I'm certain I can master the skills taught in class this year.
 2. I'm certain I can figure out how to do the most difficult class work.
 3. I can do almost all the work in class if I don't give up.
 4. Even if the work is hard, I can learn it.
 5. I can do even the hardest work in this class if I try.
- The Student Self-Report of Academic Self-Efficacy (Hoover-Dempsey & Sandler, 2005) is a three-item measure with items rated from 1 (not true) to 4 (very true) available at <http://www.strivetogether.org/sites/default/files/images/7%20Student%20Self-Report%20of%20Academic%20Self-Efficacy.pdf>. It was designed for students in grades 4 to 6. The items are:
 1. I can do even the hardest homework if I try.
 2. I can learn the things taught in school.
 3. I can figure out difficult homework.

Instructional Strategies:

- The Virtual Lab School (2018) has developed a series of modules for teachers to use with preschoolers. One module is focused on how teachers can promote a sense of self. The module includes research and suggestions for what preschool teachers can do in the classroom. For example, teachers can provide honest and specific feedback, as well as opportunities for meaningful peer interactions. The module is available at this link: <https://www.virtuallabschool.org/preschool/self-culture/lesson-2>.
- Teachers can strengthen young children's self-concept by helping them individually set goals and then helping them track progress using charts in the classroom (Myers-Walls et al., 2015). Teachers can also encourage self-praise. The research and tools included in the article by Myers-Walls et al. is available in this handout <https://successforkidswithhearingloss.com/wp-content/uploads/2013/03/Encouraging-Positive-Self-Concepts-in-Children.pdf>.
- In a study of first graders enrolled in a rural school with high rates of economic disparity, researchers found that delivering the *I Know I Can: Persevering to Success* curriculum, which consisted of 12 30-minute lessons delivered weekly, had a significant and positive effect on self-efficacy, according to teachers' perceptions of students (Bardhoshi, Duncan, & Erford, 2017). The researchers note that, "Promoting and assessing self-efficacy and its facets is a cornerstone of students' academic and social/emotional development and should begin in the earliest years of the academic enterprise" (p. 14).
- In the subject area of writing, Pajares, Johnson, and Usher (2007) found that perceived mastery experience (how students interpret their own previous performance) had the largest impact on writing self-efficacy beliefs. The authors suggest that teachers can help students experience mastery in writing by making sure students are engaged in the process and by maintaining a high level of interaction with students as they self-evaluate their writing.
- The *Responsive Classroom (RC)* is a social and emotional learning (SEL) intervention designed for elementary school students in grades 2-5 that was found to decrease students' anxiety and increase academic self-efficacy (Griggs, Rimm-Kaufman, Merritt, & Patton, 2013).
 - The RC approach consists of seven principles and 10 practices based on those principles. An example of a principle is, "The social curriculum is as important as the academic curriculum" (p. 362). This principle drives the practice of holding a morning meeting,

- which is a structured class meeting where students and teachers greet one another and share news.
- “RC teachers are trained to understand and be sensitive to children’s individual needs and to create well-organized classroom environments in which children feel safe taking academic risks” (p. 369).
 - Researchers (McMahon, Wernsman, & Rose, 2009) found that classroom climate (in terms of areas such as cohesiveness, student satisfaction, level of difficulty, competitiveness, etc.) had an effect on low-income 4th and 5th grade students’ academic self-efficacy (with some differences depending on subject area). Some of the conclusions from the research are:
 - Positive and supportive classroom environments together with school belonging were related to higher language arts self-efficacy.
 - Using cooperative, interactive teaching strategies regardless of subject area can promote cohesion and belonging among students.

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