ASKING THE RIGHT QUESTION

How Confident Are You That You Could Successfully Perform These Tasks?

Mimi Bong

Self-efficacy refers to “the conviction that one can successfully execute the behavior required to produce the outcomes” (Bandura, 1977, p. 79). Since its initial conception, researchers and practitioners in education have been paying close attention to the utility of self-efficacy in explaining and predicting students’ academic functioning in school. Their efforts have been justified. It has been repeatedly demonstrated that students with a strong sense of efficacy are motivated to engage in challenging tasks (Bandura & Schunk, 1981), invest greater effort in assigned tasks (Salomon 1984; Schunk, 1983), set higher goals (Schunk & Swartz, 1993), persist longer in the face of occasional setbacks (Lent, Brown, & Larkin, 1984; Schunk, 1982), express lower levels of anxiety (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Pajares, Miller, & Johnson, 1999), use more effective learning strategies (Zimmerman, Bandura, & Martinez-Pons, 1992; Zimmerman & Kitsantas, 1999), and achieve at higher levels (Pajares et al., 1999; Pietsch, Walker, & Chapman, 2003) compared to those with low self-efficacy.
Academic self-efficacy, in particular, refers to students’ subjective conviction that they can successfully carry out given school and classroom tasks at desired levels (Schunk, 1991). Though little disagreement exists regarding this conceptual definition, considerable variations exist in the ways it is translated to form particular self-efficacy items and scales. Children and adolescents must learn and perform a variety of tasks in a variety of domains, so the sheer number of measurement instruments in the academic self-efficacy literature alone is not a problem. The problem, however, is in the nature of the questions and statements included in those instruments. Some of the purported self-efficacy scales are not consistent with Bandura’s (1997) prescriptions and assess something other than self-efficacy. Studies relying on these “pseudo” self-efficacy scales run the risk of reaching faulty conclusions. Researchers hence erroneously conclude at times that self-efficacy is not a significant predictor of student motivation or that other constructs better predict student achievement.

Reasons for such misguided practice seem to fall into one of three main categories, which are not mutually exclusive. The first is the confusion with other constructs referring to the self, the second is the lack of accurate understanding in the context-specific and generative nature of self-efficacy, and the third is the failure to ensure correspondence between self-efficacy and its prediction target. The purpose of this chapter is to examine these common sources of mistakes in assessing adolescents’ self-efficacy and the likely impact these less-than-optimal procedures might have had on relevant results. A number of theoretical and practical issues in self-efficacy item and scale construction are then discussed, followed by guidelines on how best to operationalize self-efficacy in academic settings.

COMMON SOURCES OF MISTAKES IN SELF-EFFICACY ASSESSMENT

Confusion Between Self-Efficacy and Other Self-Referent Constructs

Perhaps due to its relatively short history, self-efficacy is often inappropriately equated with other constructs referring to the self that have existed longer in the literature (see, for example, Thomas, Iventosch, & Rohwer, 1987; Wilhite, 1990). One such construct is self-esteem, which refers to one’s evaluative orientations toward the self (Damon & Hart, 1982) and represents a person’s general sense of worth and overall feelings of adequacy across different areas in life (Byrne, 1996; Pelham,
In achievement situations, self-esteem embodies students’ judgments of their own worth and feelings of self-satisfaction as a student.

Despite the unique function of self-esteem in adolescents’ mental and psychological health, drawing a parallel between self-esteem and self-efficacy cannot be justified theoretically or empirically. The most common mistake is to assess self-efficacy as a domain-specific form of self-esteem. Investigators who commit this error conceptualize self-esteem as a global index of perceived self-worth spanning across many disparate domains and self-efficacy as similar emotional reactions toward the self but in specific domains. However, self-esteem need not be detached from a functional domain, nor is there a part-whole relationship between self-efficacy and self-esteem (Bandura, 1997).

When judging self-esteem, the competencies deemed important and the standards used to evaluate them likely differ across individuals (James, 1980, as cited in Pelham, 1995). For adolescents who consider mathematics an important domain, their self-worth as students would partly depend on their mathematics competencies (but see Marsh, 1995). They may gauge these competencies against personal criteria or adopt socially accepted indicators of success such as obtained grades. Students’ feelings of self-worth also may be global in nature or tied to a specific domain. Therefore, items such as “I am happy with the way I am in math” or “Everything I do goes wrong in math” are self-esteem statements as much as are items such as “I like myself the way I am” or “I believe I am a good student” (see the Perceived Competence Scale for Children; Harter, 1982). The former represent mathematics self-esteem and the latter represent global academic self-esteem. None of these items represents self-efficacy.

Self-concept, another construct frequently confused with self-efficacy, refers to “a person’s perception of himself” formed through experiences with the environment and influenced by environmental reinforcements and significant others (Shavelson, Hubner, & Stanton, 1976). Academic self-concept refers specifically to individuals’ knowledge and perceptions about themselves in achievement situations (Byrne, 1984; Shavelson & Bolus, 1982; Wigfield & Karpathian, 1991).

In the past, self-concept was viewed as a global construct like general self-esteem. For example, the original version of the Piers-Harris Children’s Self-Concept Scale (PHCSCS) operationally defined self-concept as a composite score derived from multiple scales tapping such diverse contents as behavior, general and academic status, physical appearance and attributes, anxiety, popularity, and happiness and satisfaction (Piers & Harris, 1964; see also Byrne, 1996). Harter (1982, 1990) criticized such practice, noting that global self-concept measures cannot reveal important distinctions children might make between different activity
domains. Marsh and his colleagues also generated abundant empirical evidence that self-concepts of children and adolescents are differentiated into multiple domains even within the “academic” realm (Marsh, 1990, 1992; Marsh, Byrne, & Shavelson, 1988). Contemporary self-concept scales reflect this multidimensionality in students’ academic self-concept.

Its domain-specificity notwithstanding, self-concept still differs from self-efficacy in several important ways. Most notably, adolescents’ academic self-concept is about whether they believe they are good in certain domains based on their past experiences, whereas their academic self-efficacy is about whether they believe they can successfully perform present tasks under the given circumstances (Bong & Skaalvik, 2003; Skaalvik & Bong, 2003). Self-efficacy thus more narrowly focuses on the judgments of competence in specific performance situations over other competence-related information that may be available in one’s self-schema (Bong & Clark, 1999). Pajares (1996) suggested that self-concept includes a self-efficacy component because it consists of competence judgments coupled with evaluative reactions and feelings of self-worth (see also Schunk, 1991).

Owing likely to these differences, findings from the self-esteem and self-concept research on the predictive and explanatory utility of these constructs for important student outcomes have been less than unequivocal. Proponents of the self-esteem movement argue that increasing students’ self-esteem by praising them invariably would lead to improved school achievement, a claim still in search of empirical evidence (Dweck, 1999). The relations between academic self-concept and scholastic achievement had been similarly disappointing but became somewhat stronger once perceived competence was treated as the most critical element in one’s academic self-concept (Hansford & Hattie, 1982; Wigfield & Karpathian, 1991).

In contrast, consistent support exists for the direct and mediating effects of self-efficacy on students’ performance and persistence on diverse academic tasks (Multon, Brown, & Lent, 1991). Although perceived competence is an important ingredient in self-efficacy appraisal as well (Bong & Skaalvik, 2003; Pajares, 1996), assessing self-efficacy requires more than simply asking about one’s generalized perceptions of competence in the given domain. Asking whether one has certain abilities or whether one is good at certain tasks differs from asking whether one can execute, with those recognized capabilities, the requisite course of action to meet a variety of situational demands for achieving successful performance (Bandura, 1997).
Lack of Accurate Understanding in the Context-Specific and Generative Nature of Self-Efficacy Judgments

Self-efficacy is sometimes confused with other self-referent constructs because of a failure to understand exactly what percepts of self-efficacy entail. Among the many distinctive attributes of self-efficacy, its context-specificity and generative nature as a predictive construct appear most frequently neglected in so-called “self-efficacy scales.” The result is substantially reduced explanatory and predictive power for the constructs so assessed.

Context-specificity may be related to, but should not be confused with, domain-specificity, content-specificity, and measurement specificity. As I have noted, self-esteem and self-concept can each be domain-specific. Adolescents may form different ideas about their own personal worth and perceived competence in cognitive, social, and physical domains (Harter, 1998). Likewise, they may hold differentiated views of their capabilities across specific content areas such as English, history, and math (e.g., Byrne & Shavelson, 1986; Marsh, 1992). Although measures of these domain- and content-specific perceptions demonstrate improved explanatory utility compared to omnibus measures (Bandura, 1997), they are still inferior predictors of students’ academic functioning than are context-specific self-efficacy beliefs (Pajares & Miller, 1994; Pietsch et al., 2003).

Some investigators mistakenly believe that assessing perceived competence at skill-specific levels automatically captures judgments of self-efficacy. Quite the contrary, self-efficacy can be assessed at varying levels of specificity depending on the researchers’ explanatory and predictive goals (Bandura, 1997). Adolescents develop self-efficacy beliefs that are skill-specific, task-specific, or domain-specific. A study by Lau, Yeung, Jin, and Low (1999) showed that not all skill-specific measurements of self-perceived capabilities embody self-efficacy. The researchers assessed Hong Kong students’ perceptions of competence in listening, speaking, reading, and writing in English as their second language. As Table 13.1 presents, the skill-specific self-concept items do not directly tap the set of component skills that define proficient performance in each skill area. They focus instead on the overall feelings of competence, adequacy, and affective reactions regarding the skills. Also listed in Table 13.1 are examples of self-efficacy items that can be readily developed out of the skill definitions provided by the authors. Although the two constructs tap the same level of measurement specificity, it is not difficult to identify markedly different characteristics of the proposed self-efficacy items from the skill-specific self-concept items.
Table 13.1. Skill-Specific Self-Concept and Self-Efficacy Items

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Definition of Skills</th>
<th>Possible Self-Efficacy Items</th>
<th>Self-Concept Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening in</td>
<td>Understanding English speeches in formal and social situations and in academic and</td>
<td>I'm confident I can understand English speeches in formal situations.</td>
<td>Compared to other students I'm good at (listening/speaking/reading/writing) in</td>
</tr>
<tr>
<td>English</td>
<td>non-academic contexts</td>
<td>I'm confident I can understand English speeches in social situations.</td>
<td>English.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I believe I can understand English speeches successfully in academic contexts.</td>
<td>I'm hopeless when it comes to (listening/speaking/reading/writing) in English.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I believe I can understand English speeches successfully in non-academic contexts.</td>
<td>I have always done well in (listening/speaking/reading/writing) in English.</td>
</tr>
<tr>
<td>Speaking in</td>
<td>Activities such as delivery of a talk or having a conversation with another person</td>
<td>I believe I can successfully deliver a talk in English.</td>
<td>Work in (listening/speaking/reading/writing) in English is easy for me.</td>
</tr>
<tr>
<td>English</td>
<td>and out of class</td>
<td>I'm confident I can carry out a conversation with another person in English in class.</td>
<td>I get good marks in (listening/speaking/reading/writing) in English.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I'm confident I can carry out a conversation with another person in English outside class.</td>
<td>I learn things quickly in (listening/speaking/reading/writing) in English.</td>
</tr>
<tr>
<td>Reading in</td>
<td>Comprehension of written prose, understanding of vocabulary, and study for academic</td>
<td>I believe I can successfully comprehend written prose in English.</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>and non-academic purposes</td>
<td>I'm confident I can understand the vocabulary while reading in English.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I believe I can successfully read materials written in English for academic purposes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I believe I can successfully read materials written in English for non-academic purposes.</td>
<td></td>
</tr>
<tr>
<td>Writing in</td>
<td>Written work leading to essays, reports, and all other work in the written form as</td>
<td>I'm confident I can write essays in English.</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>required academically in their respective disciplines at the university</td>
<td>I'm confident I can write reports in English.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I believe I can successfully produce written work in English as required academically at</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>my university.</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Definitions of skills and skill-specific self-concept items are from Lau, Yeung, Jin, & Low (2000), Study 2. The skill-specific self-concept items were developed for Hong Kong students, for whom English was a second language.
First and foremost, the primary emphasis of the self-efficacy items is on the self-judged confidence regarding whether one can successfully execute the required behavior under the specified circumstances. By explicitly telling the respondents what constitutes a successful performance in each skill area, errors of prediction due to misinterpretation of the items are minimized. Second, the self-efficacy items make no reference to the emotional reactions that may arise as a result of the self-appraised proficiency. Affective responses are important psychological outcomes of perceived self-efficacy, but they are not constituents of efficacy beliefs (Bong & Clark, 1999; Bong & Skaalvik, 2003; Pajares, 1996). Third, relative superiority or inferiority of the skills compared to others is less consequential in shaping one’s self-efficacy than are perceived capabilities to meet the designated criteria for success (Bong & Clark, 1999; Bong & Skaalvik, 2003; Zimmerman, 1995).

The core in self-efficacy assessment, then, is to get to the very belief that individuals draw on when they are faced with situations that involve certain actions or performance (Pajares, 1996). People do not act in vacuum, nor do they act with only vague feelings about what they are generally like. Rather, they proceed with more or less concrete ideas about where they stand in reference to the performance goals, taking into account all known factors that might moderate their capabilities to realize desired outcomes. To accurately assess these beliefs means to envisage and reflect all necessary competencies and situational constraints in the assessment instrument. Context-specific self-efficacy measurement thus requires that important features of the tasks and situations that could wield tangible influence on performance outcomes be clearly spelled out in the items (Bandura, 1997). This helps respondents to evaluate their self-efficacy more accurately, which consequently predicts their ensuing thought patterns, emotional reactions, and performance quality with increased precision (Mischel, 1977).

Just as ignoring the context-specific nature of efficacy expectations is highly problematic, failing to reflect the generative property of such expectations can also seriously restrict the prediction afforded by the assessed beliefs. These situations occur when respondents are asked only to appraise their capabilities to perform a set of highly particularized constituent skills. Yet successful academic performance often calls for more than errorless execution of the component skills. When investigators want to predict the quality of students’ everyday writing from their writing self-efficacy, they are well advised to incorporate not only the specific component skills required in writing (e.g., use of correct punctuation, use of correct plurals, prefixes, and suffixes) but also the common tasks (e.g., get your points across in your writing) and situations (e.g., write a letter to a friend, write a 1-page summary of a book you read, write a 2-page report
for a class) that necessitate competent execution of those subskills (Shell, Colvin, & Bruning, 1995; Shell, Murphy, & Bruning, 1989). The act of writing demands an adroit combination of the basic skills as well as successful adaptation to the complexities of the given writing situation.

Bandura (1997) warns against the “fragmentation and decontextualization of capabilities” because “the whole is greater than the sum of its parts” (p. 38). As illustrated in the writing example above, efficacy expectations formed in reference to separate performance contexts are comprised of qualitatively different elements. Therefore, the sum of self-efficacy beliefs toward particular subskills in writing is not necessarily identical to the beliefs toward writing itself (Bong & Skaalvik, 2003). Unlike other belief systems, self-efficacy as a context-specific and generative judgment mirrors the varying intricacies of the performance situations.

**Failure to Ensure Correspondence Between Self-Efficacy and Prediction Target**

Another related reason that many items and scales stray from the prerequisite conditions for self-efficacy scale construction can be traced to the degree of correspondence to their prediction target. Self-efficacy is a predictive construct of behavioral change that needs to be assessed prior to the outcomes of interest (Bandura, 1977; Zimmerman, 1995). When self-efficacy scales are developed without reference to a specific prediction target or when the chosen self-efficacy assessment tasks are not compatible with the performance outcomes they are meant to predict, their forecasting power diminishes (Pajares, 1996).

In the former situation where investigators develop self-efficacy scales with no specific aim of explaining or predicting any particular outcome, there is a danger of winding up with a compilation of generic items. Beliefs of self-efficacy, when assessed with these generic items, may be able to predict relevant outcomes to a certain degree but by no means with the level of accuracy that has been the hallmark of the self-efficacy research. A related problem that often arises is the blending of the predictor and the predicted. In Yeung et al. (2000, Study 2), for example, the following three items were used to measure students’ self-efficacy in English reading: “How confident are you when you read English?” “How well do you read English?” and “How often do you read in English?” Among these three, only the first item may pass as a self-efficacy item. The other two tap students’ expectations on likely consequences of their self-efficacy to read in English.
There are also situations in which self-efficacy items are developed with the purpose of predicting some concrete target yet fail to emulate the target's content, scope, or difficulty level to a sufficient degree. Pajares and Miller (1995) demonstrated this point empirically. They assessed participants' math self-efficacy with the Mathematics Self-Efficacy Scale (MSES). Each of the three subscales in the MSES measured students' subjective confidence in their ability to solve a set of mathematics problems, complete everyday mathematics tasks, or perform successfully in mathematics-related courses. All three subscale scores as well as a composite score based on the full MSES were positively and strongly correlated both with students' mathematics problem-solving performance and with their choice of mathematics-related majors. Nonetheless, students' self-efficacy scores estimated against the 18 specific mathematics problems emerged as the strongest predictor of their performance on the same set of problems. In contrast, students' choices of mathematics-related majors were best predicted by their self-efficacy expectations in these courses.

As this study illustrates, percepts of efficacy assessed in reference to outcomes that fall in the vicinity of the prediction target would still prove useful to a certain, sometimes even satisfactory, extent. However, as the study further demonstrated, the predictive utility of self-efficacy is maximized when these beliefs are estimated in reference to the tasks and contexts that best correspond to the criterial variable (Bandura, 1997; Pajares, 1996). Therefore, if researchers aim to capitalize on the power of self-efficacy to explain and predict adolescents' academic functioning, they must assess the beliefs that match the target of prediction.

**ISSUES TO CONSIDER IN SELF-EFFICACY ITEM AND SCALE DEVELOPMENT**

The following are some of the essential issues that should be considered when one wishes to develop self-efficacy items and scales in studies of adolescents' psychological and performance-related outcomes in achievement situations. It should be noted that this list is not meant to be exhaustive. Nonetheless, care was taken to incorporate most theoretical and practical issues deemed particularly important in the study of adolescents' functioning in school.

**Levels of Specificity at Which Self-Efficacy is Assessed**

As discussed earlier, self-efficacy is superior to other self-referent constructs in predicting achievement outcomes because efficacy beliefs are judgments of capability tailored to a specific outcome. When constructing
self-efficacy assessment tools, one must determine the appropriate level of specificity at which percepts of efficacy should be tapped. This is a question that cannot be answered without careful analysis of the prediction target. If the goal is to predict students’ levels of performance on some defined academic task, researchers must analyze the types of skills, knowledge, and potential constraints on performance involved in successful accomplishment of that task before creating a self-efficacy scale. If the goal is to predict cognitive and affective outcomes rather than performance attainments, investigators must still identify the tasks with which those outcomes are most likely triggered and the contexts within which they are most relevant (see Díaz, Glass, Arnkoff, & Tanofsky-Kraff, 2001).

Measurement specificity is not a sufficient condition for context-specificity, as I showed earlier with the study of skill-specific self-concept. Still, it is a necessary condition for ensuring context-specific judgments of competence. Pajares (1996) cautioned that self-efficacy should be assessed “as specifically as is relevant and useful” to the research question (p. 564). Self-efficacy expectations need not be microscopically assessed. Nor is it useful to use students’ percepts of efficacy developed toward, for example, mathematics as a whole to predict performance on a set of fraction problems. If investigators wish to account for the performance variations among students’ skills with fractions, they must solicit efficacy judgments about the same or similar types of fraction problems under study (e.g., Shih & Alexander, 2000). As Bandura (1986) cautioned, “the optimal level of generality at which self-efficacy is assessed varies depending on what one seeks to predict and the degree of foreknowledge of the situational demands” (p. 49).

**Correspondence to the Prediction Target**

Ascertaining context-specificity requires more than specificity of measurement. It also requires that efficacy expectations be estimated against the very skills, tasks, and situations that correspond to the key outcomes the researcher tries to predict. The value of assessing matching self-efficacy as a forebear of one’s ensuing cognitive, affective, and behavioral repertoire is well described in the comments by Mischel (1977), who observed that

if we want individuals to tell us about themselves directly, we have to ask questions that they can answer. If we ask people to predict how they will behave on a future criterion ... but do not inform them of the specific criterion measure that will constitute the assessment, we cannot expect them to be accurate. (p. 249)
In addition to ensuring that self-efficacy is assessed at the same level of specificity as the outcome of interest, it is imperative to sample a representative set of behaviors, tasks, and situations from a universe of possibly infinite variations of the requisite behaviors, tasks, and situations. The job of selecting archetypal items among the available pool of component skills and tasks requires expert knowledge of the essential capacities, scopes, and difficulty levels of diverse tasks as well as of the range of possible situations and restrictions in carrying out those tasks (Bandura, 1997).

Use of specific problems and tasks that appropriately match the target performance has the added advantage of more precisely demonstrating the impact of a changed sense of self-efficacy. Schunk and his colleagues successfully documented the effects of improved self-efficacy on specific types of mathematical operations among students with academic difficulties (Bandura & Schunk, 1981; Schunk, 1982, 1983; Schunk & Hanson, 1985; Schunk, Hanson, & Cox, 1987). In these studies, researchers used the same type of mathematics problems to assess self-efficacy and achievement before and after the implementation of remedial instructional programs. At program’s end, participants displayed significant growth in their self-efficacy toward solving the problems, which resulted in significantly improved problem-solving performance. Self-efficacy assessment items that correspond to the criterial variable are the most sensitive measure of cognitive precursor to behavioral change.

**Provision of Concrete Anchors for Self-Efficacy Judgments**

One dilemma that researchers and practitioners sometimes face is whether to incorporate in a self-efficacy scale all problems and tasks that respondents will be asked to solve or perform. For instance, Schunk (1996) presented 31 pairs of fraction problems to gauge students’ self-efficacy about their fraction skills, each of which shared the same form and operations with one of the 31 problems in the skills test. There is no doubt but that the 31 pairs of problems would more accurately capture subtle as well as obvious changes in students’ efficacy expectations toward fractions. Unfortunately, some situations do not permit such a lengthy survey.

Presenting verbal descriptions of the problems in lieu of the actual problems provides a practical solution in some of those situations. Bong (2002) categorized 25 achievement test problems into 10 problem types and developed representative verbal descriptions for each type. Efficacy beliefs judged in reference to these verbal task descriptions were highly correlated with self-efficacy ratings made in reference to the actual test
problems. The self-efficacy measures also displayed comparable utility for predicting students’ mathematics test performance.

Researchers should be warned, however, that resorting to written descriptions instead of to the actual problems may have hidden cost. Pajares et al. (1999) cautioned that the manner in which questions are posed makes a difference in how people appraise and report their perceived competence. Accordingly, using verbal problem descriptions may prove effective only in some situations. Bong (2002) asked students to provide slightly different estimates of their self-efficacy depending on whether they were presented with a set of actual test problems or with only written descriptions of the problems. The nature of these judgment discrepancies also differed across domains. Students made more conservative self-efficacy estimates when verbal task descriptions instead of particularized test problems were presented in English, whereas the opposite was true in mathematics. A perceived difficulty level of the written task “Read a given passage and determine its main theme” could vary considerably by the hypothesized length, style, topic, or vocabulary used. In comparison, a description of a mathematics task such as “Compute the mean, standard deviation, and variance using a frequency table” may convey a less ambiguous message to students.

Assessment of Self-Efficacy Toward Unfamiliar Tasks

There are situations in which researchers and teachers wish to assess a student’s self-efficacy toward problems and tasks that are yet to be learned. Depending on the expected type and scope of the performance, self-efficacy for self-regulated learning, self-efficacy for academic achievement, or both could be assessed (e.g., Zimmerman et al., 1992). The self-efficacy subscale of the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich & De Groot, 1990) can be used to measure students’ expectations of academic performance in a given course. Among the nine MSLQ self-efficacy items, three solicit students’ judgments of their capabilities compared to those of their peers. Self-efficacy theorists maintain that efficacy beliefs are more heavily affected by one’s mastery experiences and absolute criteria of success (i.e., being able to succeed) rather than by social comparison and normative criteria (i.e., being better than others) (Bandura, 1977; Bong & Clark, 1999; Bong & Skaalvik, 2003; Zimmerman 1995). There could certainly be circumstances under which normative information plays a more critical role in efficacy appraisal, such as when a task is novel or ambiguous (France-Kaatrude & Smith, 1985; Marsh et al., 1991). Still, the comparative items are not recommended because they appear to emphasize social comparison more heavily than is theoretically justi-
fied. Another MSLQ item, “My study skills are excellent in this class,” is also not recommended because it asks about respondents’ evaluation of their current skill levels rather than whether they believe they can successfully employ these study skills to realize satisfactory achievement in the given domain.

In many achievement settings, students can predict the form in which the outcome of their new learning will materialize before they are introduced to all relevant skills and tasks. Academic grades are one such outcome. When researchers aim to predict students’ grades, they can ask students to rate their confidence in their ability to obtain each of the letter grades in the given subject domain at the end of the course. These self-efficacy questions present the varying levels of performance qualities in the prediction target and, at the same time, provide respondents with concrete anchors against which to estimate their competence (Bong & Skaalvik, 2003).

**Judgment Intervals in Self-Efficacy Rating Scales**

The most typical self-efficacy response format is the one proposed by Bandura (see the Guide, this volume). Respondents are provided with a 100-point rating scale ranging from either 0 or 10 to 100, divided in 10-unit intervals. To help students understand more clearly what each number represents, the following verbal descriptors typically accompany this type of scale: 0 (not sure), 40 (maybe), 70 (pretty sure), and 100 (real sure).

Whereas the original 100-point response scale was widely used in early academic self-efficacy research, Likert-type scales with slightly different ranges tend to appear more frequently in contemporary academic self-efficacy research. For example, Likert scales of 1 to 5 (Bong & Hocevar, 2002), 1 to 6 (Pajares, 1996), 1 to 7 (Chemers, Hu, & Garcia, 2001), and 1 to 8 (Pajares & Graham, 1999) have been successfully applied to the study of adolescents’ self-efficacy. However, when Pajares, Hartley, and Valiante (2001) assessed students’ writing self-efficacy using both the traditional 0-100 and the Likert-type 1-6 response scales, the 0-100 scale demonstrated better predictive utility for students’ writing GPA, especially in the presence of other motivational variables such as self-concept, apprehension, and task value in writing. Their results are consistent with Bandura’s (1997) warning that self-efficacy response scales with too few steps should be avoided because they cannot capture fine distinctions among individuals’ efficacy beliefs. Therefore, providing students with a broad enough range of potential responses such as those offered in the original 100-point response scale appears most defensible. When Likert-type scales are used, investigators must ensure that the scale contains a sufficient number of points so as not to miss subtle variations in students’ judgments.
Temporal Proximity Between Self-Efficacy and Performance Assessments

According to Bandura (1997), it is important to assess self-efficacy in close temporal proximity to the prediction target. This guideline is reasonable, given that individuals’ self-efficacy, situational demands, or both could change during the assessment interval. But such practice sometimes poses a problem, especially when the goal is to predict longer-term outcomes. Educational researchers are often interested in foretelling students’ motivation and performance at the end of the semester or school year on the basis of efficacy beliefs assessed at the beginning of the school year. In addition, though self-efficacy is relatively more malleable than are other trait-like self-perceptions, individuals can and do develop a resilient sense of efficacy toward a particular task or domain as a result of their repeated success or failure experiences (Bandura, 1997). This is particularly true among adolescents, who have been dealing with a more or less similar academic subject matter for several years.

Empirical evidence suggests that the issue of temporal proximity may be less relevant in the study of adolescents’ self-efficacy when the target of prediction is at the academic subject domain level or beyond. Bong (2002) compared the utility of students’ self-efficacy for predicting a number of performance outcomes assessed after increasingly longer intervals from the self-efficacy assessment. Efficacy judgments obtained at the beginning of the semester predicted students’ end-of-semester exam performance with the same accuracy that they predicted performance on tests that immediately followed the self-efficacy assessment. It should be noted that performance scores on these exams typically correlate strongly and hence often demonstrate similar relations with other variables. Therefore, investigators are urged to assess adolescents’ self-efficacy and performance in close temporal proximity. This is particularly important when the learning and performance conditions are expected to change and students are required to perform progressively more challenging tasks or when there exists an intervening performance or testing event that may alter students’ self-efficacy toward the tasks.

SUMMARY AND CONCLUSION

The primary reason why so many educators and researchers are keenly interested in adolescents’ self-efficacy is because of its proven effect on diverse spheres of academic functioning. Whereas past research on vari-
ous self-related perceptions tried to uncover “what is,” research on self-efficacy has instead been emphasizing “what works.” Numerous experiments with academically challenged students have demonstrated clearly the modifiable nature of self-efficacy as a consequence of successful instructional interventions. Relatively simple teaching procedures such as modeling, goal setting, and attributional feedback are able to enhance students’ success expectations in a fairly short period of time. This improved sense of self-efficacy invariably leads adolescents to function more effectively in taxing academic situations. This modifiability of judgments vividly contrasts with the frustration educators often experience when they strive to augment students’ generalized self-perceptions.

It is critical, therefore, to accurately document the malleability as well as the predictive power of efficacy beliefs on important student outcomes. This information aids researchers and practitioners in their efforts to help adolescents become more resilient learners by strengthening their self-efficacy. One major impediment to this is the confusion among investigators as to how best to assess self-efficacy toward the numerous skills, tasks, and domains that adolescents need to master in school. Some researchers hold a misguided assumption that one must always resort to established items and scales, as that has often been the standard procedure with other decontextualized constructs. But published scales are not of much help when they do not match the tasks or domains of interest. To exacerbate the situation, many variations of self-efficacy assessment exist in the study of adolescents, some of which deviate considerably from Bandura’s theoretical prescriptions.

As I have explained, the most fundamental difference between self-efficacy and other self-referent beliefs is that self-efficacy beliefs represent context-specific judgments of competence. It is less important what capabilities adolescents believe that they posses than whether they believe that, at the end of their endeavor, they can enjoy success on the given tasks under the given circumstances by successfully applying those capabilities. Research on adolescents’ self-efficacy, therefore, must start by asking the right question—“How confident are you that you can successfully perform these tasks?”

REFERENCES


