Self-efficacy

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Self-efficacy is defined as a personal judgement of "how well one can execute courses of action required to deal with prospective situations." Expectations of self-efficacy determine whether an individual will be able to exhibit coping behavior and how long effort will be sustained in the face of obstacles. Individuals who have high self-efficacy will exert sufficient effort that, if well executed, leads to successful outcomes, whereas those with low self-efficacy are likely to cease effort early and fail. Psychologists have studied self-efficacy from several perspectives, noting various paths in the development of self-efficacy; the dynamics of self-efficacy, and lack thereof, in many different settings; interactions between self-efficacy and self-concept; and habits of attribution that contribute to, or detract from, self-efficacy.

Self-efficacy affects every area of human endeavor. By determining the beliefs a person holds regarding his or her power to affect situations, it strongly influences both the power a person actually has to face challenges competently and the choices a person is most likely to make. These effects are particularly apparent, and compelling, with regard to behaviors affecting health.

Judge et al. (2002) argued the concepts of locus of control, neuroticism, generalized self-efficacy (which differs from Bandura's theory of self-efficacy) and self-esteem may be markers of the same higher order concept, called core self evaluation, and demonstrated them to be related concepts.

Stajkovic (2006) argued that concepts of hope, self-efficacy, optimism, and resilience may be markers of the same higher order construct, called core confidence, and this core construct is separate and distinct from core self evaluation, but is also a powerful predictor of outcomes related to self-efficacy. Core confidence has been found to be predictive of job performance, job satisfaction, and satisfaction with life.

Theoretical Approaches

Social cognitive theory

Psychologist Albert Bandura has defined self-efficacy as one's belief in one's ability to succeed in specific situations or accomplish a task. One's sense of self-efficacy can play a major role in how one approaches goals, tasks, and challenges. The theory of self-efficacy lies at the center of Bandura's social cognitive theory, which emphasizes the role of observational learning and social experience in the development of personality. The main concept in social cognitive theory is that an individual's actions and reactions, including social behaviors and cognitive processes, in almost every situation are influenced by the actions that individual has observed in others. Because self-efficacy is developed from external experiences and self-perception and is influential in determining the outcome of many events, it is an important aspect of social cognitive theory. Self-efficacy represents the personal perception of external social factors. According to Bandura's theory, people with high self-efficacy--that is, those who believe they can perform well--are more

likely to view difficult tasks as something to be mastered rather than something to be avoided.

Social Learning Theory

Social learning theory describes the acquisition of skills that are developed exclusively or primarily within a social group. Social learning depends on how individuals either succeed or fail at dynamic interactions within groups, and promotes the development of individual emotional and practical skills as well as accurate perception of self and acceptance of others. According to this theory, people learn from one another through observation, imitation, and modeling. Self-efficacy reflects an individual's understanding of what skills he/she can offer in a group setting.

Self-concept Theory

Self-concept theory seeks to explain how people perceive and interpret their own existence from clues they receive from external sources, focusing on how these impressions are organized and how they are active throughout life. Successes and failures are closely related to the ways in which people have learned to view themselves and their relationships with others. This theory describes self-concept as learned (i.e., not present at birth); organized (in the way it is applied to the self); and dynamic (i.e., ever-changing, and not fixed at a certain age).

Attribution Theory

Attribution theory focuses on how people attribute events and how those beliefs interact with self-perception. Self-efficacy has both direct and reciprocal links with causal attributions. Attribution theory defines three major elements of cause:

Locus is the location of the perceived cause. If the locus is internal (dispositional), feelings of self-esteem and self-efficacy will be enhanced by success and diminished by failure.

Stability describes whether the cause is perceived as static or dynamic over time. It is closely related to expectations and goals, in that when people attribute their failures to stable factors such as the difficulty of a task, they will expect to fail in that task in the future.

Controllability describes whether a person feels actively in control of the cause. Failing at a task one thinks one cannot control can lead to feelings of humiliation, shame, and/or anger

How it Affects Human Function

Choices Regarding Behavior

People generally avoid tasks where self-efficacy is low, but undertake tasks where self-efficacy is high. When self-efficacy is significantly beyond actual ability, it leads to an overestimation of the ability to complete tasks. On the other hand, when self-efficacy is significantly lower than actual ability, it discourages growth and skill development. Research shows that the optimum level of self-efficacy is slightly above ability; in this situation, people are most encouraged to tackle challenging tasks and gain experience.

Motivation

High self-efficacy can affect motivation in both positive and negative ways. In general, people with high self-efficacy are more likely to make efforts to complete a task, and to persist longer in those efforts, than those with low self-efficacy. The stronger the self-efficacy or mastery expectations, the more active the efforts. However, those with low self-efficacy sometimes experience incentive to learn more about an unfamiliar subject, where someone with a high self-efficacy may not prepare as well for a task. A negative effect of low self-efficacy is that it can lead to a state of learned helplessness. Learned helplessness was studied by Martin Seligman through a shocking experiment involving animals. Through the experiment, it was discovered that the animals placed in a cage where they could escape shocks by moving to a different part of the cage did not attempt to move because they had formerly been placed in a cage in which escape from the shocks was not possible. Low self-efficacy can lead to this state in which it is believed that no amount of effort will make a difference in the success of the task at hand.

Work Performance

Self-efficacy theory has been embraced by management scholars and practitioners because of its applicability in the workplace. Overall, self-efficacy is positively and strongly related to work-related performance. This relationship, though, depends on task complexity. For more complex tasks, the relationships between self-efficacy and work performance is weaker than for easier work-related tasks. The implications of this research is that managers should provide accurate descriptions of tasks and provide clear and concise instructions and they should provide the necessary supporting elements for employees to be successful. The meta-analytic findings of Stajkovic and Luthens(1998) changed the focus on whether self-efficacy is related to performance, and focused the field on more specific questions, such as the nature and underlying mechanisms responsible for producing the positive effect of self-efficacy on performance.

Thought Patterns and Responses

Self-efficacy has several effects on thought patterns and responses:

Low self-efficacy can lead people to believe tasks to be harder than they actually are. This often results in poor task planning, as well as increased stress.
People become erratic and unpredictable when engaging in a task in which they have low self-efficacy.
People with high self-efficacy tend to take a wider view of a task in order to determine the best plan.
Obstacles often stimulate people with high self-efficacy to greater efforts, where someone with low self-efficacy will tend toward discouragement and giving up.
A person with high self-efficacy will attribute failure to external factors, where a person with low self-efficacy will blame low ability. For example, someone with high self-efficacy in regards to mathematics may attribute a poor test grade to a harder-than-usual test, illness, lack of effort, or insufficient preparation. A person with a low self-efficacy will attribute the result to poor mathematical ability.

Health Behaviors

Choices affecting health, such as smoking, physical exercise, dieting, condom use, dental hygiene, seat belt use, and breast self-examination, are dependent on self-efficacy. Self-efficacy beliefs are cognitions that determine whether health behavior change will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and failures. Self-efficacy influences how high people set their health goals (e.g., "I intend to reduce my smoking," or "I intend to quit smoking altogether"). A number of studies on the adoption of health practices have measured self-efficacy to assess its potential to initiate behavior change.

Academic Productivity

Stajkovic, Bandura, and colleagues investigated the incremental effect of self-efficacy on academic performance over one semester, after taking personality traits, GPA, and general mental ability into account. They found that self-efficacy was the most consistent and powerful predictor of academic achievement. Similarly, research on Australian science students showed that those with high self-efficacy showed better academic performance than those with low self-efficacy. Confident individuals typically took control over their own learning experiences, were more likely to participate in class, and preferred hands-on learning experiences. Those with low self-efficacy typically shied away from academic interactions.

Relationship to Locus of Control

Bandura showed that difference in self-efficacy correlates to fundamentally different world views. People with high self-efficacy generally believe that they are in control of their own lives, that their own actions and decisions shape their lives, while people with low self-efficacy may see their lives

as outside their control.

Factors Affecting Self-efficacy

Bandura identifies four factors affecting self-efficacy.

Experience, or "enactive attainment" - The experience of mastery is the most important factor determining a person's self-efficacy. Success raises self-efficacy, while failure lowers it. According to psychologist Erik Erikson: Children cannot be fooled by empty praise and condescending encouragement. They may have to accept artificial bolstering of their self-esteem in lieu of something better, but what I call their accruing ego identity gains real strength only from wholehearted and consistent recognition of real accomplishment, that is, achievement that has meaning in their culture."

Modeling, or "vicarious experience" - Modeling is experienced as, "If they can do it, I can do it as well". When we see someone succeeding, our own self-efficacy increases; where we see people failing, our self-efficacy decreases. This process is most effectual when we see ourselves as similar to the model. Although not as influential as direct experience, modeling is particularly useful for people who are particularly unsure of themselves.

Social persuasion - Social persuasion generally manifests as direct encouragement or discouragement from another person. Discouragement is generally more effective at decreasing a person's self-efficacy than encouragement is at increasing it.

Physiological factors - In stressful situations, people commonly exhibit signs of distress: shakes, aches and pains, fatigue, fear, nausea, etc. Perceptions of these responses in oneself can markedly alter self-efficacy. Getting 'butterflies in the stomach' before public speaking will be interpreted by someone with low self-efficacy as a sign of inability, thus decreasing self-efficacy further, where high self-efficacy would lead to interpreting such physiological signs as normal and unrelated to ability. It is one's belief in the implications of physiological response that alters self-efficacy, rather than the physiological response itself.

Genetic and Environmental Determinants

In a Norwegian twin study, the heritability of self-efficacy in adolescents was estimated at 75 percent. The remaining variance, 25 percent, was due to environmental influences not shared between family members. The shared family environment did not contribute to individual differences in self-efficacy.

Theoretical Models of Behavior

A theoretical model of the effect of self-efficacy on transgressive behavior was developed and verified in research with school children.

Prosociality and Moral Disengagement

Prosocial behavior (such as helping others, sharing, and being kind and cooperative) and moral disengagement (manifesting in behaviors such as making excuses for bad behavior, avoiding responsibility for consequences, and blaming the victim) are negatively correlated. Academic, social, and self-regulatory self-efficacy encourages prosocial behavior, and thus helps prevent moral disengagement.

Over-efficaciousness in Learning

In certain circumstances, lower self-efficacy can be helpful. One study examined foreign language students' beliefs about learning, goal attainment, and motivation to continue with language study. It was concluded that over-efficaciousness negatively affected student motivation, so that students who believed they were "good at languages" had less motivation to study.

Health Behavior Change

Social-cognitive models of health behavior change cast self-efficacy as predictor, mediator, or moderator. As a predictor, self-efficacy is supposed to facilitate the forming of behavioral intentions, the development of action plans, and the initiation of action. As mediator, self-efficacy can help prevent relapse to unhealthy behavior. As a moderator, self-efficacy can support the translation of intentions into action. See Health action process approach.

Possible Applications

Academic Contexts

Parents' sense of academic efficacy for their child is linked to their children's scholastic achievement. If the parents have higher perceived academic capabilities and aspirations for their child, the child itself will share those same beliefs. This promotes academic self-efficacy for the child, and in turn, leads to scholastic achievement. It also leads to prosocial behavior, and reduces vulnerability to feelings of futility and depression. There is a relationship between low self-efficacy and depression.

In a study, the majority of a group of students questioned felt they had a difficulty with listening in class situations. Instructors then helped strengthen their listening skills by making them aware about how the use of different strategies could produce better outcomes. This way, their levels of self-efficacy were improved as they continued to figure out what strategies worked for them.

STEM

Self-efficacy theory has been applied to the career area to examine why women are underrepresented in male-dominated STEM fields such as mathematics, engineering, and science. It was found that gender differences in self-efficacy expectancies importantly influence the career-related behaviors and career choices of young women. Moreover, researchers have reported that mathematics self-efficacy is more predictive of mathematics interest, choice of math-related courses, and math majors than past achievements in math or outcome expectations. Self-efficacy, then, has proven especially useful for helping undergraduate students to gain insights into their career development in STEM fields.

Also, technical self-efficacy was found to be a crucial factor for teaching computer programming to school students, as students with higher levels of technological self-efficacy achieve higher learning outcomes. The effect of technical self-efficacy was found to be even stronger than the effect of gender.

Writing

Writing studies research indicates a strong relationship linking perceived self-efficacy to motivation and performance outcomes.

Motivation

One of the factors most commonly associated with self-efficacy in writing studies is motivation. Motivation is often divided into two categories: extrinsic and intrinsic. McLeod suggests that intrinsic motivators tend to be more effective than extrinsic motivators because students then perceive the given task as inherently valuable. Additionally, McCarthy, Meier, and Rinderer explain that writers who are intrinsically motivated tend to be more self-directed, take active control of their writing, and see themselves as more capable of setting and accomplishing goals. Furthermore, writing studies research indicates that self-efficacy influences student choices, effort, persistence, perseverance, thought patterns, and emotional reactions when completing a writing assignment. Students with a high self-efficacy are more likely to attempt and persist in unfamiliar writing tasks.

Performance Outcomes

Self-efficacy has often been linked to students' writing performance outcomes. More so than any other element within the cognitive-affective domain, self-efficacy beliefs have proven to be predictive of performance outcomes in writing. In order to assess the relationship between self-efficacy and writing capabilities, several studies have constructed scales to measure students' self-efficacy beliefs. The results of these scales are then compared to student writing samples. The studies included other variables, such as writing anxiety, grade goals, depth of processing, and

expected outcomes. However, self-efficacy was the only variable that was a statistically significant predictor of writing performance.

Public Speaking

A strong negative relationship has been suggested between levels of speech anxiety and self-efficacy.

Other Contexts

At the National Kaohsiung First University of Science and Technology in Taiwan, researchers investigated the correlations between general Internet self-efficacy (GISE), Web-specific self-efficacy (WSE), and e-service usage. Researchers concluded that GISE directly affects the WSE of a consumer, which in turn shows a strong correlation with e-service usage. These findings are significant for future consumer targeting and marketing.

Furthermore, self-efficacy has been included as one of the four factors of core self-evaluation, one's fundamental appraisal of oneself, along with locus of control, neuroticism, and self-esteem. Core self-evaluation has shown to predict job satisfaction and job performance.

Researchers have also examined self-efficacy in the context of the work-life interface. Chan et al. (2016) developed and validated a measure "self-efficacy to regulate work and life" and defined it as "the belief one has in one's own ability to achieve a balance between work and non-work responsibilities, and to persist and cope with challenges posed by work and non-work demands" (p. 1758). Specifically, Chan et al. (2016) found that "self-efficacy to regulate work and life" helped to explain the relationship between work-family enrichment, work-life balance, and job satisfaction and family satisfaction. Chan et al. (2017) also found that "self-efficacy to regulate work and life" assists individuals to achieve work-life balance and work engagement despite the presence of family and work demands.

Subclassifications

While self-efficacy is sometimes measured as a whole, as with the General Self-Efficacy Scale, it is also measured in particular functional situations.

Social self-efficacy has been variably defined and measured. According to Smith and Betz, social self-efficacy is "an individual's confidence in her/his ability to engage in the social interactional tasks necessary to initiate and maintain interpersonal relationships." They measured social self-efficacy using an instrument of their own devise called the Scale of Perceived Social Self-Efficacy, which measured six domains: (1) making friends, (2) pursuing romantic relationships, (3) social

assertiveness, (4) performance in public situations, (5) groups or parties, and (6) giving or receiving help. More recently, it has been suggested that social self-efficacy can also be operationalised in terms of cognitive (confidence in knowing what to do in social situations) and behavioral (confidence in performing in social situations) social self-efficacy.

Matsushima and Shiomi measured self-efficacy by focusing on self-confidence about social skill in personal relationship, trust in friends, and trust by friends.

Researchers suggest that social self-efficacy is strongly correlated with shyness and social anxiety.

Academic self-efficacy refers to the belief that one can successfully engage in and complete course-specific academic tasks, such as accomplishing course aims, satisfactorily completing assignments, achieving a passing grade, and meeting the requirements to continue to pursue one's major course of study. Various empirical inquiries have been aimed at measuring academic self-efficacy.

Other areas of self-efficacy that have been identified for study include teacher self-efficacy and technological self-efficacy.

Clarifications and Distinctions

Self-efficacy versus Efficacy

Unlike efficacy, which is the power to produce an effect--in essence, competence--the term self-efficacy is used, by convention, to refer to the belief (accurate or not) that one has the power to produce that effect by completing a given task or activity related to that competency. Self-efficacy is the belief in one's efficacy.

Self-efficacy versus Self-esteem

Self-efficacy is the perception of one's own ability to reach a goal; self-esteem is the sense of self-worth. For example, a person who is a terrible rock climber would probably have poor self-efficacy with regard to rock climbing, but this will not affect self-esteem if the person doesn't rely on rock climbing to determine self-worth. On the other hand, one might have enormous confidence with regard to rock climbing, yet set such a high standard, and base enough of self-worth on rock-climbing skill, that self-esteem is low. Someone who has high self-efficacy in general but is poor at rock climbing might have misplaced confidence, or believe that improvement is possible.

Self-efficacy versus Confidence

According to Albert Bandura, "the construct of self-efficacy differs from the colloquial term

'confidence.' Confidence is a nonspecific term that refers to strength of belief but does not necessarily specify what the certainty is about. I can be supremely confident that I will fail at an endeavor. Perceived self-efficacy refers to belief in one's agentive capabilities, that one can produce given levels of attainment. A self-efficacy belief, therefore, includes both an affirmation of a capability level and the strength of that belief. Confidence is a catchword rather than a construct embedded in a theoretical system."

It is also understood that Self-efficacy can be the opposite of confidence. According to The Educational Psychology textbook, " There can sometimes therefore be discrepancies between a person's self-efficacy beliefs and the person's abilities. You can believe that you can write a good term paper, for example, without actually being able to do so, and vice versa: you can believe yourself incapable of writing a paper, but discover that you are in fact able to do so. In this way self-efficacy is like the everyday idea of confidence, except that it is defined more precisely." (Siefert 117).

Self-efficacy versus Self-concept

Self-efficacy comprises beliefs of personal capability to perform specific actions. Self-concept is measured more generally and includes the evaluation of such competence and the feelings of self-worth associated with the behaviors in question.