



Self-Efficacy

The Science of Resilience

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Definition

The concept of 'self-efficacy' in psychological research was put forward by Albert Bandura (1977, 1986, 1994, 1997) to describe a person's belief in their ability to perform in certain scenarios to achieve success. Bandura claimed that how an individual perceives themselves, or how they cognitively self-evaluate, influences their confidence in being able to set and achieve goals and the ability to regulate their behaviour. Self-efficacy is a measure of the amount of confidence someone has in their ability to influence or exert control over their behaviour, actions, motivation, and social environment.

According to Bandura (1982), self-efficacy can affect people's lives in three ways. First, self-efficacy influences the choices people make, as people tend to take part in activities that they believe they will be good at and have the potential to master, and avoid activities they believe they lack skills in or will be unable to achieve. An example of this can be seen in academia with students who fail a course and then no longer feel like learning that subject is 'for them' (Swärd, 2012). Secondly, self-efficacy influences motivation, as those with a high level of self-efficacy are more likely to show greater levels of persistence and effort in their work or activities despite facing obstacles. Third, self-efficacy can influence one's thoughts and other cognitive processes, including dreams (Bandura, 1994).

In their brief editorial, Creer and Wigal (1993) theorize how Bandura's three aspects of self-efficacy apply to their work with patients who self-manage their respiratory conditions and cystic fibrosis. First, patients need to be equipped with the right training and skills to be able to manage their conditions and feel confident in taking part in such activities. Treatment plans ought to be designed in relation to the perceived ability of the patient to follow it and be open to fluidly changing as the patient becomes more confident in their treatment. Secondly, patients' self-efficacy beliefs can increase through (a) modeling the behaviour of others; (b) social persuasion, "where people tell others they believe they can succeed at performing given tasks"; (c) making decisions to alter any necessary physiological functions, such as respirators; and (d) becoming masters of their routines and necessary knowledge and skills, thereby becoming partners with the physicians. Finally, self-efficacy can be assessed by asking people to share their thoughts and to predict their ability to perform an activity successfully, as an individual's self-efficacy beliefs tend to be highly correlated with their performance (Bandura, 1986).

Individuals with a high sense of self-efficacy are more likely to firmly devote their time to overcoming a problem or mastering a task, while those with limited self-efficacy are more likely to be plagued with self-doubts and ruminate about the possibilities of what could go wrong. Bandura (1994) also states that individuals with a low sense of efficacy feel unable to exercise control, which can lead to depression and anxiety. Paths that lead to such a state can be from an unfulfilled personal aspiration, or a low sense of 'social efficacy', i.e., the belief that one is worthy and capable of forming and maintaining healthy social relationships. Those with

low social-efficacy do not feel deserving of positive, supportive social relationships, and therefore do not seek them out, leading them to social isolation and ruminating thoughts. Further, Bandura (1994) states that low self-efficacy in being unable to exercise control over ruminating thoughts “contributes to the occurrence, duration and recurrence of depressive episodes” (p. 6).

Self-efficacy affects every aspect of life that requires effort. How a person thinks about themselves and others, and the beliefs they hold regarding their ability to affect a situation, influences not only the abilities a person has in confronting adversity and overcoming challenges, but also their choices in activities and the confidence to begin and struggle through those challenges. While Bandura recognized confidence as being similar to self-efficacy, he claimed they differ in that confidence refers to “strength of belief but does not necessarily specify what the certainty is about... [whereas] self-efficacy refers to belief in one’s agentic capabilities, that one can produce given levels of attainment” (1997, p. 382). All that is to say that, while confidence does not equate self-efficacy, the former is still a key component of the latter. Citing Bandura (1997), Muris (2001) states that most people who face a problem generally know exactly what needs to be done to overcome it. However, knowing what to do is only one step to fixing the problem; people also need to be confident in their ability to decide and enact the desired behaviour.

Another conceptualization of self-efficacy that has been studied widely is ‘career decision-making self-efficacy,’ which refers to a person’s beliefs about their ability to undertake and complete tasks related to their career decision-making process (Andrews et al., 2014; Taylor & Betz, 1983). Studies in career decision-making self-efficacy examine how self-efficacy relates with a variety of factors related to careers and personality, including “certainty ... fear of commitment ... adaptive career beliefs ... conscientiousness, and extraversion” (Andrews et al., 2014). Such research has proved useful in identifying groups of individuals at different places in the career decision-making process, and has found that individuals further along in that process tend to display higher confidence (e.g., Robbins, 1985; Taylor & Popma, 1990; Andrews et al 2014)

Those with higher levels of self-esteem and confidence in their skills and are more likely to feel like they can succeed. The act of succeeding can then provide an individual with more experiences to show one is capable, thereby boosting their self-efficacy. Higher self-efficacy can in turn provide greater self-confidence and self-esteem, creating a positive cognitive and behavioural loop. In short, while self-esteem is more about how one feels in regard to their own self-worth, self-efficacy is about feeling confident and up to the challenge of completing a task. Individuals with strong self-efficacy tend to be confident in their abilities to change for the better and are therefore more likely to engage in healthy behaviors and improve their quality of life. Examples of this can be seen, where patients are more likely to take part in the medical practitioner’s recommended treatment plans (Davis et al., 2012), or return to work and leisure activities (Weng et al., 2008, 2013).

Relationship to Resilience

Many individuals and professionals have attempted to increase self-efficacy in the people they live or work with in hopes of achieving positive outcomes, including parents with their children, teachers with their students, therapists with their clients, and supervisors with their staff (Bandura, 1994; Baumeister et al., 2003; Rodríguez-Sánchez et al., 2011). Bandura's concept of self-efficacy underpins his theory of "social cognitive theory" (Bandura, 1986), which holds that an individual's actions and reactions are almost universally influenced by their social experiences, observations of others, and setting. Like the theory of resilience, self-efficacy is an internal quality that is also determined by external forces. Those with high self-efficacy are more likely to believe they can accomplish a task with the right amount of time and energy, and view difficult tasks as something to be confidently taken on and mastered rather than avoided (Bandura, 1982, 1986). Higher self-efficacy is also related to goal-setting and internal motivation (Schunk, 1990), and healthy lifestyle choices (Bandura, 1994; Davis et al., 2012).

Bandura discusses four main types of self-efficacy beliefs: (i) mastery experiences, (ii) vicarious experiences; (iii) verbal persuasion; and (iv) emotional and physiological states (Bandura, 1994, 1997). Mastery experiences refer to the experiences gained from taking on and completing challenges, as one can only become a master through practice and often failure. In doing so, an individual not only learns a skill or solves a problem, but gains confidence by learning that they are capable of taking on new challenges. The second has to do with having a role model to observe and emulate; if positive role models display a healthy level of self-efficacy, one is likely to adopt them. Vicarious experiences can come from a wide range of sources, including family members, teachers, staff or counselors. The verbal persuasion factor describes how positive and encouraging words can influence an individual's self-efficacy. Lastly, emotional and physiological states refer to the importance of recognizing the individual context, health, and mental state wherein the development and maintenance of self-efficacy takes place. This is important for consideration of not only mental health but cultural variation, as self-efficacy scores may differ across cultures depending on the measurement, as shown by Schwarzer's (1998) comparison of 14 cultures using the General Perceived Self-Efficacy scale: "students in Hong Kong and Japan obtained the lowest self-efficacy scores, whereas the Costa Ricans and the Russians obtained the highest values."

People in positive psychological states who feel confident and happy also report higher levels of efficacy, and when people feel anxious, they have lower self-efficacy (Rodríguez-Sánchez et al., 2011). When one has confidence in their abilities, they are more likely to sit down for longer periods of time at their work and feel happy rather than anxious in completing their task. It may be safe to say, then, that the factors that correlate with positive psychological states – such as higher socioeconomic status, higher education, community supports, and other resilience factors – contribute to a greater likelihood of both high self-efficacy scores and high levels of resilience.

Bandura's (2001) also posited a 'collective efficacy', that the beliefs that the degree of efficacy that groups (and the individuals in them) hold will influence how they perceive both their skills and the challenges they are faced with. Salanova et al. (2014) examined this 'collective' or 'team efficacy' (i.e., "people's shared beliefs in their collective power to produce the desired results"), and its relationship to flow states (i.e., moments of engaged and uninterrupted work with pleasurable outcomes, where 'time flies when you're having fun'). The authors use Bandura's definition of collective efficacy: "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura, 1997, p. 447).

Salanova et al.'s (2014) longitudinal study on collective efficacy had 250 university students (85% female) branch into 52 groups to complete three creative tasks. The first task involved developing a program for a week-long cultural event, with each team member individually coming up with five activities to be performed during the event. They then pooled their work to select as a group the top 10 most appropriate activities for the event, bearing in mind originality and feasibility. The second task involved the team members scheduling the activities throughout the event week, again considering originality and viability. The final task involved creating a promotional poster for the event, with originality being valued. The groups met for three sessions of three hours each to perform the two idea generation tasks and the group decision task.

Each participant was required to complete questionnaires after both task 1 and task 2 on collective self-efficacy and flow. "Collective efficacy beliefs" were measured by averaging students' own perceptions of collective efficacy and using a slightly modified version of the Generalized Self-Efficacy scale. The findings showed that the positive experience of collective flow at T1 was positively related to collective efficacy at T2, and that groups with high collective efficacy beliefs were therefore much more likely to experience flow states more often and for longer durations. They were also more likely to immediately perceive challenges and feel more competent or skilled, which positively impacted their collective flow experiences (Salanova et al., 2014).

The authors therefore agree with Bandura's (1997, p. 113) remark that "mood and efficacy beliefs are related both concurrently and predictively". Although they recognize that these findings may differ across work settings and population demographics, the authors recommend that group work tasks should be designed in academia and the workplace "to increase perceptions of shared challenges and skills", and that working on challenging tasks with those matched in skill level will foster healthy work group 'flow' states. To add to this, Rodríguez-Sánchez et al. (2011) also report that high levels of efficacy beliefs tend to have a positive impact on flow experiences in academic settings, as well as on employee well-being for job satisfaction and engagement.

A study on 'career decision-making self-efficacy' looked at its connection with perfectionism and negative thoughts (Andrews et al., 2012). Citing past studies that examine

perfectionism as multidimensional, Ashby and Rice (2002) describe the difference between adaptive or “normal” perfectionists and maladaptive or “neurotic” perfectionists, the former showing significantly lower levels of Adlerian inferiority (i.e., inferiority complex). Ashby and Rice also looked at the difference between perfectionists and non-perfectionists and determined that individuals with adaptive perfectionism have higher levels of self-efficacy scores than both maladaptive perfectionists and non-perfectionists, thereby making the argument for healthy aspects of perfectionism. “Although holding high personal standards is generally agreed to be the core of perfectionism ... high standards have not usually been measured specifically. Using a purer measure of high standards (the APS-R Standards subscale), the results indicated a significant positive relationship between standards and self-esteem” (Ashby & Rice, 2002, p. 202). The authors posit that “Holding personal standards that are too high may insulate the perfectionist from these “self-esteem costs” (Bandura, 1986).

Interventions

Yoga

Kwasky & Serowoky (2018) examined if a school-based yoga intervention could be employed to improve self-efficacy in 15 at-risk female youth (aged 11-14) in an urban school-based environment in the United States. The participants practiced yoga twice a week for eight weeks, with data being collected at baseline, at the end of the program, and one month later. Self-efficacy was measured using the Self-Efficacy Questionnaire for Children (SEQ-C) tool (Cronbach's α of 0.88). The authors found no significant improvements in total SEQ-C, though there were significant improvements in the social subscale, likely from observing peer’s movement and gaining guidance from the instructor.

The Diabetes Empowerment Program (DEP)

A culturally tailored intervention to improve self-care and SDM among African Americans; it has improved patients’ self-efficacy, self-care behaviors and diabetes control.

Assessments

Career Decision Self-Efficacy Scale–Short Form (CDSE-SF; Betz et al., 1996)

- The CDSE-SF is a 25-item measure assessing self-efficacy expectations in completing specific tasks necessary in making career decisions.”
- Items include “Make a plan of your goals for the next five years” and “Prepare a good résumé.”
- Responses range from 1 (no confidence at all) to 5 (complete confidence). Higher scores indicate a greater degree of career decision-making self-efficacy.

- The CDSE-SF total score has demonstrated coefficient alphas ranging from .93 to .95, with an internal consistency of .95 in Andrews et al.'s (2014) study.
- "Test-retest reliability of the CDSE-SF was demonstrated at .83 at a period of 6 weeks (Luzzo, 1993). The CDSE-SF has demonstrated construct validity when compared with measures of career indecision and vocational identity (Betz et al., 1996)."

General Self-Efficacy Scale (GSE; Schwarzer and Jerusalem, 1995; Appendix A)

- 10-item scale to assess respondents' confidence that they can cope with a variety of difficult demands in life (e.g., "I can always manage to solve difficult problems if I try hard enough"; "If I am in trouble, I can usually think of a solution").
- 4-point Likert scale: 1 = "Not at all true," 2 = "Hardly true," 3 = "Moderately true," and 4 = "Exactly true"
- In samples from 23 nations, Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s. The scale is unidimensional.
- Find more information here:
 - <http://userpage.fu-berlin.de/~health/engscal.htm>

Self-Efficacy Questionnaire for Children (SEQ-C; Muris, 2001)

- Designed to be used in the study of affective disorders.
- 24 items; 5-point Likert scale
- Three sub-scores: Academic self-efficacy; Social self-efficacy; Emotional self-efficacy
- Evidence based on a sample of young adolescents (N=330) from a public secondary school.
- Girls reported lower emotional self-efficacy than boys; the connection between self-efficacy and depression was stronger in girls than in boys... "may have to do with the fact that girls more frequently rely on ineffective emotion-focused coping strategies (Ptacek, Smith, & Zanas, 1992)... [e.g.,] rumination, which involves directing attention inwardly toward negative feelings and thoughts. Rumination enhances pessimistic thinking [and] undermines children's sense of self-efficacy, ultimately increasing the risk for developing depression (NolenHoeksema, 1998)."
- Internal consistency (alpha) estimates ranged from 0.85 to 0.88.
- "SEQ-C scores correlated in a theoretically meaningful way with a measure of depression. That is, the lower children's SEQ-C scores, the higher their level of depression." (Muris, 2001, p. 148)
- Find more information and the full measure here:
 - <https://www.rand.org/education-and-labor/projects/assessments/tool/2001/self-efficacy-questionnaire-for-children-seq-c.html>

The Kidney Transplantation Self-Care Self-Efficacy Scale (Weng et al., 2008)

- 12 items
- Five-point Likert: 0 (no confidence at all) to 4 (very confident)
- Patients indicate how confident they are in their ability to follow the prescribed diets, exercise and medication regimes, as well as how confident they are with respect to monitoring the early signs of rejection and infection, in addition to monitoring blood pressure and other self-monitoring tasks including emotional distress.
- Scores ranged 0–48, with a higher score indicating higher self-efficacy on self-care behaviour.
- The content validity index was 0.96 and Cronbach's α was 0.88.

Employable Skills Self-Efficacy Survey (ESSES; Ciarocco and Strohmetz, 2017)

- A resource for fostering skill development and a tool for assessing students' perceived level of attainment of employable skills.
- 51-item inventory that assesses four domains of employable skills, including communication (4 subscales; APA Goal 4), analytical inquiry (2 subscales; APA Goal 2), collaboration (2 subscales; APA Goal 5), and professional development (3 subscales; APA Goal 5).
- Can either use the full scale or specific domains

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Appendix A: General Self-Efficacy Scale

Schwarzer and Jerusalem (1995)

1	I can always manage to solve difficult problems if I try hard enough.
2	If someone opposes me, I can find the means and ways to get what I want.
3	It is easy for me to stick to my aims and accomplish my goals.
4	I am confident that I could deal efficiently with unexpected events.
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.
6	I can solve most problems if I invest the necessary effort.
7	I can remain calm when facing difficulties because I can rely on my coping abilities.
8	When I am confronted with a problem, I can usually find several solutions.
9	If I am in trouble, I can usually think of a solution.
10	I can usually handle whatever comes my way.



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