

The Science of Resilience









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### Definition

Goal setting is the conscious, purposeful, decision to orient one's behaviour in the pursuit of attaining a skill or outcome. Goal setting has to do with the issue of motivation, and goal-setting theory approaches it from a first level perspective (Latham & Locke, 1991). The theory of goal-setting states that the simplest, most direct explanation for why some individuals perform better than others is because they differ in their performance goals. When people commit to setting and achieving their goals, they tend to perform better (Locke & Latham, 2002).

Some of the earliest writing on goal-setting comes from Aristotle's work on 'final causality', or the idea that humans are driven towards an end, and therefore having a purpose can stimulate action. More modern conceptualizations include Latham and Locke's (1991) goalsetting theory, which was based on McClelland et al.'s (1953) theory of achievement motivation, and Ryan's (1970) premise that conscious goals influence action (Latham & Locke, 2002; Latham & Locke, 2019). Goal-setting theory states that a goal is the aim or object of an action within a specific time frame, such as the intent to attain a certain standard of proficiency in something by a specific date. Latham and Locke were concerned about the relationship between conscious performance goals and the level of task performance, rather than on motivation to take specific actions. They also focused on conscious motivation, but later recognized that the subconscious can also affect action in some cases (Locke, 2015). While goalsetting focuses on the importance and necessity of achieving outcomes and improving performance through setting specific, conscious goals, Locke and Latham (2019) more recently have recognized the influence that more indirect, or abstract attention can play on goal-setting. This shift in conceptualization was based on research that showed self-development benefits from simply writing about goals, including benefits in areas not specifically to the set goal (e.g., Morisano et al., 2010).

While problem-solving is an often a necessary component in goal attainment, and tends to be likened to computational, mechanistic processes, Latham and Locke states that goal setting, and the goal-setting theory, has its origins in biology (Locke, 2015). Unlike inanimate objects that lack the ability to set, pursue, and attain goals, living organisms are either consciously or unconsciously goal-directed in their actions. Among humans, there is the need for reason, or conceptual thought, long-range thinking, and volitional goal choices (Locke & Latham, 2019). [See our write-up on Problem-solving].

Locke and Latham's first investigation into goal difficulty and performance showed that the most difficult goals tended to produce the highest levels of effort and performance (Locke & Latham, 1990, 2002). Performance levels tended to decrease or even out only when the study participants' commitment to a highly difficult goal declined, or they reached the limits of their abilities. The researchers also examined the comparison between providing positive

feedback (i.e., urging one to do their best) and setting specific, difficult goals, and found that the latter approach consistently lead to higher performance. The authors concluded that urging an individual to do their best is less effective, as this approach lacks any external reference, thereby allowing the goal outcomes to instead be defined internally, which provides an opportunity for a wide range of acceptable performance outcomes. In contrast, specific goals lack this ambiguity. While goal specificity does not necessarily lead to higher performance, due to the varying difficulty of specific goals, it does decrease the variation in performance by reducing the ambiguity of what it means to have attained a goal (Locke & Latham, 2002).

Locke and Latham (2002) discuss how goal-setting theory has been viewed as working in contrast to social cognitive theories, such as Vroom's (1964) valence—instrumentality—expectancy theory, which states that motivation (the force to act) has to do with a combination of "valence (anticipated satisfaction), instrumentality (the belief that performance will lead to rewards), and expectancy (the belief that effort will lead to the performance needed to attain the rewards)" (p. 706). According to Vroom's theory, expectancy is positively and linearly related to performance, and because difficult goals are harder to attain, the expectancy of goal success would relate to negative performance. Instead, the authors state that the two are in line, as both theories recognize the importance of conscious goals and self-efficacy. Having higher self-efficacy relates to the ability to set higher, more difficult goals, which (as mentioned) has in turn been found to lead to increased performance in a variety of tasks (Locke & Latham, 2006; Phillips & Gully, 1997).

Locke and Latham (2019) write that goal-setting theory is also superior to the control theory of motivation, which contends that human behaviour is never caused by a response to outside stimulation, and is instead inspired and acted upon by what an individual desires most at any given time, e.g., power, love, survival, freedom, or other basic needs. According to control theory, if students are unmotivated to work, it is due to viewing the work as irrelevant to their basic needs. Teachers correct and direct behaviour toward goals, shaping students' desires through the use of extrinsic rewards and promotion of intrinsic reward, with good grades being granted by teachers when the correct goal is pursued and attained to satisfy the students' basic need for power (Glasser, 1992). Instead, Locke and Latham (2019) state that this original, mechanical, control theory model is not applicable to human beings, and that given the nature of biological life (discussed earlier), goal-directed choice and action are at the core of human motivation.

While control theory focuses on motivation being denoted by a negative feedback control system focused on error correction, goal-setting theory has more to do with "feedforward self-regulation", made possible through self-efficacy, which Bandura, Locke, and Latham argue is the most central and pervasive mechanism of human agency (Bandura & Locke, 2003). Self-efficacy refers to in individual's belief in their ability to succeed at a particular task or in a specific situation (Bandura, 1977). Regardless of rewards or other motivating factors, Bandura and Locke state that setting difficult goals is rooted in the belief that the individual has

the power to achieve the desired outcome in the first place, and without it there would be no incentive to set goals, act on them, and persevere through adversity toward them. An individual's self-efficacy levels has an influence on how they set and pursue goals, with higher levels of self-efficacy strengthening the likelihood of goal attainment. Tinto (2017) writes that self-efficacy is also not fixed, and can change based on individuals' experiences, citing the example of students tending to develop stronger self-belief and confidence through accomplishing goals and tasks throughout the school year. This growth in confidence will then contribute to them setting loftier goals. On the other hand, failure to meet previous goals can lead to lower levels of self-efficacy and the likelihood of setting less difficult and more achievable goals in the future, which can then lead to less positive outcomes (Locke, 2006; Locke & Latham, 2019). [See our write-up on Self-Efficacy].

Bandura and Locke (2003) state that self-efficacious beliefs contribute to self-regulation through cognitive, decisional, motivational, and affective processes, and contributes to whether an individual thinks or speaks in self-debilitating or self-enhancing ways. Self-efficacy also contributed to the quality of individuals' emotional well-being, to their vulnerability to stress and depression, to the key decisions they make, and to how well they can motivate themselves and persevere through adversity (Bandura, 1997; Bandura & Locke, 2003). All of these aspects of self-regulation (e.g., emotional control and key decision making) are important in the goal setting and attainment process. Another main difference between control theory and goal-setting theory is the former's focus on discrepancy reduction between an individual's desired goal and their level of performance, and the latter's emphasis on discrepancy production (Bandura & Locke, 2003; Locke & Latham 2019). Bandura and Locke state that discrepancy reduction is associated with motivational self-challenge, but is not the primary source of motivation, as otherwise people would choose the easy route and stop setting goals altogether once they obtain them. Instead, given self-efficacy, people tend to set even higher goals after achieving their goals, thereby producing more discrepancy.

On the topic of motivation, the proponents of goal-setting theory (Locke & Latham, 2019; Locke & Schattke, 2019) also state that contrary to popular belief, intrinsic motivation does not include or equate to achievement motivation. Intrinsic motivation means enjoying taking part in an activity for the pure sake of enjoyment, regardless of how well one performs or what one gets out of it. This could be playing or listening to music, taking a walk, or playing basketball for fun. While intrinsic motivation can go together with goal-setting theory, the two are not the same. As mentioned earlier, goal-setting theory is based on the achievement motivation theory of (McClelland et al., 1953), which emphasizes the endeavour to achieve a standard of excellence; not just doing, but doing well. When paired with intrinsic motivation, a basketball player like Michael Jordan can love the game, and all the struggles, exercise, trash talk, injuries and failures that come with it, while keeping in mind their singular goal of winning the championship and/or MVP title, and being recognized as excellent. The two can and often are independent of one another, as seen in people enjoying hobby sports for fun and being indifferent to becoming the best or even better, or in professions where individuals excel at the

jobs they hate while continuing to strive toward excellence at it, due often to the extrinsic reward for money, or other psychological factors, such as the drive to win or prove oneself (Locke & Latham, 2019). To provide another all-star athlete example for the opposite end of this dichotomy, Andre Agassi stated in his autobiography that although he set goals and strove for excellence, he has always hated tennis: "I play tennis for a living even though I hate tennis, hate it with a dark and secret passion and always have" (Agassi, 2009).

Locke and Latham's research determined a number of mediators through which goal setting operates, and moderators that identify limits or contingencies. Goal mediators include attention or choice, effort, persistence, and the possession of relevant strategies for goal attainment. Goals either motivate people to use existing methods for goal attainment or search for new strategies. The research also showed that self-set goals and self-efficacy could mediate the effects of other motivators on performance, such as feedback, personality, assigned goals, job design and incentives, and leadership (Locke & Latham, 2019). The main moderators of goal-performance effects are goal commitment (including self-efficacy and a sense of importance), feedback (or knowledge of progress), task complexity, ability (or task knowledge or skill), and situational factors (Locke, 2015; Locke & Latham, 2019). Situational factors will be discussed more in the section on resilience.

Perseverance or persistence is also a necessary quality in goal setting and attainment, with a similar relation to self-efficacy. Tinto (2017) states that persistence is akin to motivation and is "the quality that allows someone to continue in pursuit of a goal even when challenges arise" (p. 2). [See our write-up on Motivation & Perseverance] When students see themselves as being successful in an academic pursuit, they are more likely to engage and persevere despite the numerous challenges they encounter (Dweck et al., 2014). This resilient persistence tends to be enhanced in individuals after experiencing and overcoming adversity, as are the abilities to set more accurate learning goals, use more effective strategies, and break down large tasks and long term goals into smaller, more concise, incremental goals (Dweck et al., 2014; Mantie, 2019).

Ultimately, goal setting is a focus on personal development, whether it be establishing objectives to improve certain skill sets or better manage behaviours. Locke and Latham assert that the more specific and difficult the goal the better, especially when the goal includes a means of evaluating performance and the individual is accepting of results-based feedback to foster further commitment to goal-setting (Locke & Latham, 2006; Lunenburg, 2011). Stephen Covey (2004) calls goal-setting a "personal mission statement" of what one wants to accomplish and where one wants to end up, which is important as others are constantly setting goals. As such, individuals need to recognize their interdependent connection to others and the goals of others, so that their own goals are not overtaken by another's set goals, dreams, and aspirations. Having a set destination or goal in mind with steps for achieving success is helpful in determining this process.

## Relationship to Resilience

The socioecological concept of resilience turns the attention from an individual's ability to bounce back from adversity to the surrounding factors that enhance and strengthen this possibility. The notion of goal setting and goal-setting theory is similar, in that goal setting and goal-directed action tends to be conceptualized as an individual pursuit, when in reality there are a number of contributing factors at play. In Locke and Latham's (2002, 2006, 2019) goal-setting theory, the authors discuss the role situational factors play as moderators of goal performance. While an individual's own self-efficacy levels play a crucial role in goal-performance effects, various situational or environmental factors also moderate the relationship between the goal and related performance, including the degree of support a person receives, whether in the form of currency, access to facilities, or social supports (Locke & Latham, 2019). As the authors also state that the best effects arise from goals that are set with high degrees of difficulty, the assistance of others and society plays a crucial role in positive outcomes for goal-setting and -attainment.

Research has shown that setting challenging goals contributes to numerous benefits and positive life outcomes. Locke and Latham (2019) write that one study by Schmidt (2013) found that through conducting a utility analysis (i.e., the process of determining economic or practical value), a goal-setting intervention contributed to an average increase in employee output of \$9,200 a year based on an average salary of \$50,000. The author cited past evidence of an average 9% increase in output. Besides the workplace, goal setting has been proven to be beneficial in the areas of athletics, psychotherapy, negotiation, creativity, leadership, and health care (Locke & Latham, 2019). Writing about goals has also been shown to beneficial, as shown by Morisano et al. (2010) in the intervention section.

While setting difficult goals has an important effect on positive outcomes, the achievement of those challenging goals has also been linked to greater internal and external benefits than the achievement of easier goals, including increased self-esteem and pride, academic credentials, better jobs, improved working conditions, and higher pay (Locke & Latham, 2019). Since the 1970s, over 400 correlational and experimental studies have shown evidence for the validity of the goal-setting approach across a variety of tasks (Latham & Locke, 2007; Morisano et al., 2010). An important aspect of these set goals is the emphasis on their specificity and clarity. Citing Locke & Latham (2002) and several other studies, Morisano et al. (2010) state that goal-setting research has shown that individuals with clear goals tend to display greater self-regulation in the ability to direct their attention and effort toward goal-relevant activities and away from distractions. They also appear to have increased energy and enthusiasm for pursuing and accomplishing tasks, especially when the goal is more important or difficult. Goal clarity tends to be associated with greater perseverance, and lower likelihood of being affected by the negative qualities of frustration, anxiety, and disappointment. Clearly defined goals also seem to be associated with an increase in individuals' abilities to explore and

apply more efficient future goal-achieving strategies, and if self-efficacy is improved through goal-setting the individual is also more likely to develop higher expectations of success (Locke & Latham, 2002; Morisano et al., 2010).

Optimism, one of the protective factors in resilience, also plays an important role in goal setting. Medlin and Green (2009) found in their study that formal, structured goal setting processes had a positive impact on employee engagement, that this increased employee engagement lead to improved workplace optimism, and that this increased level of optimism in turn lead to increased levels of individual employee performance. Puca (2004) further describes this phenomenon as beneficial phases of 'active' rather than 'passive' optimism, the former of which is grounded in reality and responds to the demands of the situation. Optimism is also linked to expectancies, which Bandura (1997) states are major determinants of goal-setting, effort expenditure, and perseverance. Puca (2004) found that post-decisional optimism was associated with greater confidence in goal achievement than pre-decisional optimism, but not higher goal-setting. Once the goal was set, the post-decisional individuals increased their self-belief and confidence in achieving the goal.

This finding is important for the concept of resilience in relation to individuals overcoming adversity, as often such individuals with low confidence and self-esteem will need a nudge to be able to commit to setting a goal, especially a difficult goal, and once the goal is set its attainment is more likely. Adolescents especially require praise for goal setting, progress, and attainment, but how praise is given is important. Maclellan (2005) states that neither criticism nor praise should be directed at the individual (e.g., praising them for being smart, born gifted, having natural talent) as they may internalize these as an aspect of themselves or their personality, and become unnecessarily distraught when mistakes do occur. Instead, praise ought to be directed at the action (e.g., their hard work, effort, strategy, progress, ability to learn from mistakes, etc.).

In terms of the business world, Locke & Latham (2019) state that all organizations require goals, as without them they would not have a purpose and would fail to achieve anything. The authors state that based on their past research, Google has adopted goal setting as a critical aspect of their leadership strategy, including with making goals transparent to every department to reduce unethical behaviour. The authors also cite how General Electric's managers have adopted the goal-setting practice of making 'stretch goals' alongside their assigned minimum goals. Stretch goals are likely impossible to achieve, just within the realm of possibility, with the goal-within-the-goal being to stimulate creative thinking and persistence. Failure to achieve these goals is not met with punishment, as the emphasis is on idea creation and self-development, and a lack of punishment reduces the temptation to cheat or exaggerate. Likely, this would also not only increase group camaraderie, as difficult goals tend to require more assistance and diverse ideas, but would also increase perceived collective efficacy in group functioning (Bandura & Locke, 2013).

Management and PR teams will often issue statements or hold meetings reminding their employees of the greater mission of the company to reinforce the collective vision and keep people focused. Whether that mission is truth, gratitude, or profits, the collective goal is fostered through a web of supports to be strengthened in the individual. This collective web of supports, here described in terms of goal-setting and strengthening, is the basis for the socioecological understanding of resilience (Ungar, 2012). Parents can do similar goal-setting 'action plans' or 'mission statements' with their children, whether through informal reminders to practice gratitude and kindness, or more formal habit-forming worksheets or bulletin bord projects. These could be for specific, measurable goals, or more abstract value goals. For example, a goal of fostering 'gratitude' could be followed by pinning the word 'gratitude' or a related reminder on the wall, or asking one another what they were grateful for today at the dinner table, or having a 'gratitude jar' that family members could drop more personal notes into (see Appendix A for more examples of at home goal-setting activities). Parents can also adopt or take part in coaching programs to improve their ability to solve problems in relation to achieving their own self-identified goals, or in being supportive of the goal-setting and attainment process of their children, such as through occupational performance coaching (Graham et al., 2009). As such, parents and guardians are key components in the process of strengthening resilience in at-risk adolescents and individuals who have experienced adversity (Ungar, 2004).

Having a goal is similar to the concept of having a purpose. Pan (2011) writes that meaning-in-life (one aspect of the global level of meaning) refers to the belief that one's life is significant and has purpose, with goal-setting being one dimension of this protective factor [see our write-up on Meaning-Making]. As mentioned earlier, goal-setting ought to be difficult and specific, and one difficult concept for many individuals is figuring out their purpose and deciding what to do with their lives. A whole industry of self-help books has been discussed on the topic of facilitating individuals to find and follow their calling, whether it be through religion, career pursuits, raising a family, etc. One viewpoint is to not ask what one can get out of life, but what they can offer to the world. If this is one's intrinsic motivation, or mission statement, keeping this in mind can help with keeping one on track in living with that purpose, regardless of what they are doing at the time in the pursuit of temporary extrinsic rewards. A sense of purpose has been identified as an important contributor in strengthening the resilience of individuals who have experienced adversity (Ungar et al., 2005).

Masten and Narayan (2012) assert that following experiences of trauma and adversity, establishing routines is one of the most important approaches one can take in strengthening resilience. Routines replace chaos with structure, a sense of uncertainty with that of security, and are usually intertwined with goal-setting processes [see our write-up on Structure and Routine]. For example, a routine of regularly attending school is intertwined with immediate goals of learning a new subject, language, or instrument, or of meeting new friends on the playground, with more long-term goals of graduating and finding a career. Regarding sustaining morale and increasing the motivation of stakeholder involvement (e.g., staff or parental

guardians), the interventions that focus on the setting or creation of these goals ought to be presented in a positive rather than negative framework—i.e., framed in a way that measures progress toward the goals, shifting to a strength-based approach and away from a focus on deficits—that includes offering rewards at various levels of positive goal progress.

One form of such progress monitoring towards set goals is scaffolding, which involves the individual and/or their supports (e.g., teacher, counselor, parent or guardian) breaking the goal down into smaller and smaller achievable tasks and goals, like steps of a staircase, with encouragement, praise and/or rewards being offered along the way (Spagnola & Fiese, 2007). Importantly, the goal-setting process ought to involve negotiation between the individual and their supports as to what the scaffolding design will look like in order to maintain the individual's sense of agency and autonomy. While structure and support are key components of strengthening resilience, so too is an individual's sense of being able to have ownership over setting and progressing toward their goals. The goal for the supporting individual is to offer guidance and helpful check-ins, but not be too prescriptive in trying to shape the individual's behaviour. Making one's own decisions in the goal setting and attainment process has been shown to improve emotional wellbeing and life satisfaction (Siebert, Kunz, & Rolf, 2020).

Designing one's own goals, or agreeing to them, is also important as they may align with the individual's personality type and what is considered important to them. More assertive individuals may prefer a sense of competition with an extrinsic rival, while others are more intrinsically motivated to learn or experience something. What the goal is, the purpose of striving toward it, and the rewards offered along the way may influence an individual's goal setting and goal attainment behaviour. For example, a recent study on this topic showed that while adults (n = 34) were more focused on goal-attainment, four-year-old children (n=32) were more interested in exploration (Blanco & Sloutsky, 2020). After figuring out which avatars offered rewards in a video game, adults were more likely to continue selecting those avatars, while the children who figured this same outcome out were more likely to continue selecting other avatars. The authors describe this as an exploration-exploitation scenario, with young children being more interested in exploring the world and gathering information, and adults being more likely to use that information to obtain rewards.

The above is worth mentioning, as sometimes setting goals and strategies that are not internally motivating to a child, or an individual who has experienced adversity or trauma, is necessary, such as in the case of individuals going through the uncomfortable process of rehabilitation work (Pritchard-Wiart et al., 2019). Also, although children are less interested in pursuing non-intrinsically motivating goals, Pritchard-Wiart et al. (2019) state that their ability to do so increases over time, with older children being more capable of intrinsically-focused goal-setting, although they may require external supports to maintain motivation. As mentioned earlier in the discussion of goal-setting theory, such external supports can provide assistance, guidance, and encouragement toward the setting of difficult, specific goals. While goals ought to be specific, and can be aided through such progress tracking and accountability

techniques as scaffolding, they ought to also be flexible to accommodate an individual's shifting self-efficacy in revaluating goals, and their growing ability to participate in the goal-setting process (Pritchard-Wiart et al., 2019).

### Interventions

#### Academic

In a recent doctoral thesis, Mantie (2019) examined how a goal-setting intervention designed by the author, Reflective Musicianship Goal Setting (RMGS), influenced grade six concert band students' resilience, persistence, engagement, and musical self-efficacy. Students from an Ontario independent school (n = 86) were taught RMGS strategies, and distributed the following tools in order: reflective mind mapping (to foster engagement), reflective musicianship goal charts (to foster perseverance and resilience), and reflective goal setting rubrics (to foster musical self-efficacy). Only 26 students completed the entire mind-mapping process. The Cronbach alpha coefficients for Mantie's RMGS measure ranged from .83 to 93. While no quantitative changes were found in outcome measures, qualitative data showed that students' persistence, resilience, engagement, and musical self-efficacy were influenced when using the goal setting tools. The author notes the influence of time restraints on quantitative outcomes, as although it was beyond the scope of the research, the intervention was developed "to influence students to continue to engage with RMGS, with the intention of seeing them continue to engage in concert band classes beyond the requirement to do so" (Mantie, 2019, p. 48).

Another academic program that works on improving students goal setting abilities is the Student Success Skills (SSS) program (Brigman & Webb, 2007). The SSS program components focus on improving three skill sets: (a) cognitive and metacognitive skills, including goal setting, progress monitoring, and memory; (b) interpersonal social skills, including social problem solving, listening, and teamwork; and (c) self-management skills, including for anger, attention, and motivation. Brigman & Webb's (2007) intervention study took place over a four-year period and involved students from two school districts in grades 5 to 9 (n = 1,123) participating in large and small group components. The large group component consisted of five, 45-minute lessons spaced a week apart with a focus on five key areas, including goal-setting and progress monitoring. The small group components also focused on these five areas, with an additional emphasis on social problem solving. Each week, students had the opportunity to share success stories and strategies regarding two goal setting tools taught within these program components, the Look Good/Feeling Good module, and the Seven Keys to Mastering Any Course module. Brigman & Webb's (2007) article includes a brief summary of the research findings of five studies from this intervention project, and state that the post-test scores for the intervention group were significantly higher than the control group in mathematics and reading scores, independent of ethnicity. The authors state that "the SSS program focuses on critical

skills and strategies aimed at helping students become more effective socially and academically by learning to set goals, monitor progress and solve problems" (p. 289).

Morisano et al. (2010) showed that when students spent more time writing about their goals, they were more likely to improve their grades, regardless of whether the goals were to improve those specific grades. Morisano and colleagues base their research in the fact that only 35% of full-time university students in the United States earn their degrees in the anticipated four years, and 25% of students never finish. These rates negatively affect university budgets and opinions, and negatively affect the non-completer students, who tend to earn less and experience longer terms of unemployment than graduates. In their 2010 study, Morisano et al. tested whether clearly articulated goals lead to improved academic performance in 85 students experiencing academic difficulties (70.6% female, ages 18-23, average age 20.49) from McGill University in Canada. Researchers provided questionnaires to be completed online and had access to participants' GPA scores and retention rates.

Participants were split into two groups, with the goal group (n = 45) taking part in an online intensive goal-setting, 'Self Authoring' program (Peterson & Mar, 2004), consisting of eight steps for setting specific personal goals, and detailed strategies for achieving them.¹ The idea is for students to imagine a road map for identifying their goals (Dobronyi et al., 2019). The control group (n = 40) participated in three online tasks: a series of questionnaires measuring psychological traits, a free-writing exercise about positive experiences, and a career-interest measure. All participants completed a concluding questionnaire 16 weeks following the intervention. Results showed that compared to the control group, students who completed the goal-setting exercise displayed increased GPA scores, were more likely to maintain full course loads, and reduced their self-reported negative affect. Worth noting, Dobronyi et al. (2019) also used a variation of the Self-Authoring program (n = 1492), with an adaptation where half of the treatment group students received follow-up goal-oriented reminders through e-mail or text messages. The authors state that no evidence of an effect on GPA, course credits, or second year persistence were observed across treatment groups.

#### Vision Boards - A Case Study Example

Waalkes et al. (2019) conducted an intervention study on the efficacy of using vision boards as a culturally responsive approach to adolescent career counseling. The authors cite past literature stating that vision boards have been used by counselors to promote future goal setting, encourage communication regarding those goals, to identify and discuss academic and career goals, and to explore participants' identities and interests. The idea behind vision boards is for an individual to identify a variety of goals, aspirations, and intentions, and then visualize them through pasting pictures or quotes (e.g., from magazine cut-outs) onto a sheet of paper or

<sup>&</sup>lt;sup>1</sup> The self-authoring program is \$30 USD, and can be found here: <a href="https://www.selfauthoring.com/">https://www.selfauthoring.com/</a>.

Bristol board. The vision board is kept somewhere in sight, so the individual can be reminded of their goals and either consciously or subconsciously work towards them.

Waalkes et al.'s (2019) study, based in Social Cognitive Career Theory (SCCT), included a case study of American middle school students (n = 25; 16 girls; 50% White, 50% Black or Latino/a) attending a summer camp from five rural, low-income areas. The 8<sup>th</sup> grade students were selected and invited from the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) programs to attend the three-day/two-night summer camp. In addition to the vision boards, participants took part in a variety of activities and completed a reflection guide after each one to write a quick reflection with the aim of developing their interests, identities, and future goals. Each evening, the students reviewed these reflection guides as a starting point for crafting their vision boards. This was done during unstructured time in small groups. Participants placed their top five values on the left panel of their boards, and a specific goal on the right panel with steps for how to reach that goal. A silhouette paper cut-out of themselves was stuck to the middle of the vision board, and the following four sentences were completed by the students and pasted to the back of their vision boards: (a) In the future I would like to be...; (b) In order to be that person I picture in the future, I will need to ...; (c) Some of my key values are ...; (d) The story my vision board tells about me is ...

The vision boards were displayed on the walls of the final day for staff, family members and guardians to see, and participants presented a short description of their boards, before taking them home. While there is no evidence for the efficacy of this case study, the authors state that the vision board goal-setting process was an effective and creative way of promoting reflection and focus on future aspirations, while also celebrating the individual's unique qualities, which is especially important for students who experience multiple barriers to their academic and career development. An image of one of the vision boards is included in Appendix B.

### Stephen Covey's (2004) "7 Habits of Highly Effective People"

Rather than using schedules and to-do lists for time-management and goal-tracking schemes, which can be disrupted by interruptions, Covey suggests the best way is to categorize things by urgency and importance, and created a quad-chart for this: urgent / not urgent on the top, important / not important on the side. Sticking to goals often means having to reject the not urgent, not important tasks. Focusing on tasks by quadrant allows individuals to focus and deal with the less pressing issues as they arise, keeping the main goals in mind and work on them when time allows.

The idea is to shape habits to (a) be proactive rather than reactive, (b) begin with the end in mind, and (c) put first things first. Adopting these habits ought to move an individual to be more independent and adopt self-mastery by developing greater self-efficacy, purpose and values. Covey's first three habits are about self-mastery in moving from being a dependent to an independent person. Independent people can then increase their place on the 'maturity

continuum' by recognizing their interdependence, or their innate role and existence in relation to others. Interdependence involves seeing oneself as part of something greater, as one component of a team that is growing and changing, and that requires the importance of knowing how to understand people, deal with their needs, empathize and cooperate with others.

Habits 4 to 6 are focused on increasing interdependence, including how to look into fostering a win-win mentality in relationships so that everyone benefits; improving 'empathic listening' to first understand others before wanting to be understood, which involves patience and emotional regulation; and understanding the importance of 'synergy', or seeing the value in how different people can bring unique perspectives, opinions and ideas to the table. Highlevel goals that are impossible to do alone can be accomplished through synthesis and teamwork. The final habit is to 'sharpen the saw', or recognize the importance of continuous improvement through maintaining mental and physical health, in order to be able to accomplish one's goals, have positive outcomes, and continue to set new goals. This includes strengthening one's physical health through exercise to avoid future ailments; one's spiritual self through prayer, meditation, music, art, etc., by checking in with oneself and reflecting on one's direction; one's cognitive health through learning, exploring, experiencing new cultures, and teaching; and one's social health through socializing and investing in interpersonal relationships (Covey, 2004).

#### **SMARTER Goals**

Using the SMART goals acronym is one popular approach to goal setting which aligns with Latham & Locke's (1991) goal-setting theory. The acronym stands for Specific, Measurable, Achievable, Relevant, and Time-Bound, and can be found in various forms of worksheets and intervention programs through a quick internet search. More recently, two additional elements have been added onto the end of this to make smart goals even 'smarter'. The additional 'E' and 'R' has been added to represent Engaging and Rewarding (MacLeod, 2012), or Evaluated and Reviewed, or a variety of other fitting words. In fact, Brown et al. (2016) point out how each of the letters in the SMART and SMARTER goal-setting terminology has been adapted to fit the program intervention's own goal. Speaking in regard to school settings, the authors state that these acronyms and their use should be clarified within each individual school setting and program, and agreed upon with the principles, teachers and leadership teams involved. See Appendix C for a table of the various terminology found in the literature using the SMART and SMARTER goals acronyms.

### **Assessment**

Goal Attainment Scaling (GAS; Kiresuk & Sherman, 1968)

Goal attainment scaling (GAS) was developed by Kiresuk and Sherman in the 1960s as a participative measurement technique for evaluating the outcomes of mental health deinstitutionalization programs, while at the same time empowering the participants (Hurn et al., 2006; Sharp, 2006). GAS asserts that there is no sufficient comprehensive definition of exceptional human service goals, and instead the specific needs of the individual client may be best defined according to their unique issues and given context. Effective GAS depends on the patient's ability to achieve their goals, and the clinician's knowledge, experience, and ability to predict outcomes. Often a computerised programme is used to calculate baseline scores, T Scores (achieved score) and change scores (King's College London, n.d). The development and implementation of goal attainment scaling involves six steps (Hurn et al., 2006):

- 1. Approximately three to five goals are selected for individuals and goal attainment scales are developed according based on highest priority
- 2. Each goal area has a numerical weight assigned to it, e.g., 1 to 99, or 1-9.
- 3. Follow-up time periods for scale scoring are set.
- 4. With this awareness of follow-up time, an expected outcome is stated for each goal
- 5. A 5-point Likert scale is created, with the middle level acting as a benchmark score of 0. If the patient achieves the expected goal, this is scored at 0. The additional levels 1 to 2 involve an increase in outcomes from the expected 0 (i.e., "+1 more than expected; +2 much more than expected"), while levels -1 to -2 include a decline in expected outcomes (i.e., "less than expected; much less than expected").
- 6. The final part of the goal-setting process involves follow-up, with each scale scored at a single level signifying an individual's goal attainment score.

Hurn et al. (2006) conducted a systematic review of goal-setting outcome measures used by clinicians working with elderly patients, and patients in physical and neurological rehabilitation settings. Their search included any type of goal-setting approach, including "goal attainment, goal planning, setting goals, self-set patient goals, collaborative goal setting, staff-assigned patient goals, multidisciplinary team-developed goals and goals developed by the caregiver/family" (p. 758). The authors concluded that GAS appeared to be a useful approach, although more work needs to be done to measure its reliability and sensitivity as a measurement tool. After narrowing their search down to 252 articles employing goal-setting and goal attainment scaling methods in these fields over the past 36 years prior to their study, Hurn et al. (2006) stated that only one paper from 1978 used in geriatric care provided evidence of test-retest reliability. Turner-Stokes et al. (2010) write that GAS proved useful as a responsive measure in their evaluation study of an intervention for upper limb spasticity, by contributing to the identification of outcomes that were important to the individual patients and their caretakers, that were otherwise unidentifiable using standardized measures.

- Free version here: <a href="https://www.sralab.org/rehabilitation-measures/goal-attainment-scale">https://www.sralab.org/rehabilitation-measures/goal-attainment-scale</a>
- See Appendix D for an example

# Goal Acceptance and Goal Commitment Scales (Leifer & McGannon, 1986; Renn et al., 1999; Appendix E)

- 12-item
- Two scales measuring two factorially distinct constructs. The Goal Acceptance Scale (5items) measures an individual's attitude of the reasonableness and personal acceptance
  of an assigned goal, while the Goal Commitment Scale (7-items) measures their
  determination and willingness to put forth effort to attain the goal.
- Renn et al. (1999) examined the factor structure and discriminant validity of these scales using structural equation modeling and a sample of employees (N = 196) who took part in a two-year goal-setting program.
- Internal consistency reliabilities for the Goal Acceptance Scale = .81; and .88 for the Goal Commitment Scale.
- Renn et al. (2019) writes that both scales related positively to performance.

#### Goal Setting Support Scale (GSSS; Ballantine et al., 1992)

- 17-items
- A subordinate rated, self-report measure of the amount of supervisory support received by first-line managers in the goal setting process
- The GSSS incorporates four aspects of social supports:
  - Emotional concern (e.g., liking, love, empathy, etc.)
  - Instrumental aid (e.g., goods and services)
  - o Information about the job and the environment
  - Appraisal information relevant to self evaluation
- Internal consistency = .91, test-retest reliability = .97 (Chipunza & Masiza, 2004)
- Chipunza & Masiza (2004) revised the scale and reported a Cronbach alpha score of .89.

#### The Perceived Efficacy and Goal Setting System (PEGS; Missiuna et al., 2004)

- Designed to allow children with disabilities to self-report their perceived competence in everyday tasks and activities, and set goals for intervention
- 30-items (27 paired items)
- Age range = five to nine
- Using cards that show self-care, school, and leisure activities, children identify the
  activities they find challenging, and select the ones they are most motivated to work on.
  Similar questionnaires are provided to caregivers and teachers for collaborative goal
  setting purposes.
- Cronbach alpha = .85

- Cost = \$125 CAD (kit with manual, cards, and score forms)
- <a href="https://www.sralab.org/rehabilitation-measures/perceived-efficacy-and-goal-setting-system">https://www.sralab.org/rehabilitation-measures/perceived-efficacy-and-goal-setting-system</a>
- https://canchild.ca/en/shop/5-pegs-2nd-edition-complete-kit

#### Goal Setting Formative Questionnaire (Gaumer Erickson et al., 2018; Appendix F)

- 19-items
- Designed to measure a student's proficiency in the three essential components of goal setting: meaningfulness, focused on personal improvement, based on data (including past experiences, interests and skills, and social feedback).
- 5-point Likert scale (1 = not very like me; 5 = very like me)
- Cronbach alpha = .919
  - o 'Meaningful' subscale (6-items), alpha = .811
  - o 'Personal improvement' subscale (6-items), alpha = .802
  - o 'Data-based' subscale (7-items), alpha = .815

#### Goal Orientations in Exercise Measure (GOEM; Petherick & Markland, 2008)

- 10-item; two scales: Task orientation (5 items) and Ego orientation (5 items)
- Developed to assess individuals' proneness to endorse task or ego goals.
- Cronbach alpha for task orientation = .78; and = .88 for ego orientation.
- Ersöz et al. (2017) created a Turkish version of the GOEM and reported Cronbach alpha scores of .90 for ego orientation and .87 for task orientation

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## Appendix A: Big Life Journal's "7 Fun Goal-Setting Activities for Children"

Retrieved from <a href="https://biglifejournal.com/blogs/blog/5-fun-goal-setting-activities-children">https://biglifejournal.com/blogs/blog/5-fun-goal-setting-activities-children</a>







- · Draw a wheel divided into segments, much like what you would do with a pizza.
- On each segment, write important categories in life: Family, Friends, School, etc.
- · For each category, ask your child to write out goals she would like to accomplish in a set period of time.

### CREATE A VISION BOARD

- · Take some old magazines and ask your child to cut out pictures that represent her hopes and
- · Paste these pictures onto a piece of poster board and decorate with colors, glitter, stickers,
- Ask your child what different pictures represent. and how she plans to achieve her dreams.





#### PLAY 3 STARS AND A WISH



- · Have your child come up with 3 "Stars," or things she does well. This can be anything from running fast to comforting her friends when they're feeling sad.
- · Have your child come up with a "Wish." The "Wish" is something that your child needs or wants to work on (a goal).



#### **ASK FUN QUESTIONS**

- Ask, "What would you do if you won the lottery? If you had a superpower, how would you use it?
- · Discuss that they can take their fate into their own hands by making a plan to achieve their hopes, goals, and dreams.





#### INTEREST MAPS

- · Older kids can learn a lot about themselves by paying attention to their interests
  - Do they like art or science or writing or sports?
     Write down all their favorite interests. See if they can find patterns in the things they
  - enjoy doing. · Once they see their interests mapped out, they
  - can create goals.



#### GOAL LADDERS

- Using a stair-step visual for goal-setting, older kids can break down their goals into doable steps. Follow this simple method:
- a. Write down your DREAM at the top of the staircase.
- b. Write down your FIRST GOAL at the very bottom of the staircase and the first action towards that goal.
- C. Create your SECOND GOAL and the first action towards it. d. Create your THIRD GOAL and the first actions towards
- Continue "CLIMBING" the stairs. Add dates, drawings, anything that helps motivate you!



## Appendix B: Vision Board example

Waalkes et al. (2019): "Figure 2. Vision Board 2."



## Appendix C: Table of various SMARTER Goal Terminology

Brown et al. (2016)



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Table 2. Comparison of meanings for SMART & SMARTER Goal terminology, adapted from Chamberlin (2011, pp. 23-25), Doran (1981), MacLeod (2012, pp. 70-72) and Subrt & Brozova (2012, pp. 180-186).

	Terms Version 1	Version 2	Justification
5	Specific	Specific	' an operational level' (Chamberlain, 2011, p. 23) exactly what needs to be done,
			'What exactly are we going to do, with or for whom?' (Subrt & Brozova, 2012, p. 183)
		Significant	'Significant goals are the ones that will make a positive difference in reality.' (Subrt & Brozova, 2012, p. 183)
М	Measurable	Measureable	'If you can't measure it, you can't manage it, so you won'
		Manageable	know when you're done' (Chamberlin, 2011, p. 23)
		Meaningful	'Realization of a project must have meaning be very important.' (Subrt & Brozova, 2012, p. 183)
A	Achievable	Action-oriented	'The plan of attack to make each goal real.' (Subrt & Brozova, 2012, p. 183)
		Attainable	Doran (1981, p. 36) uses 'assignable' to designate the
		Assignable	person who will perform the goal 'specify who will do it'
		Agreed	
R	Realistic	Relevant	Reasonable, Results-oriented?
		Realistic	
		Resourced	
T	Timed, Time-bound	Trackable	'trackable so you can see what your progress is' (Subrt & Brozova, 2012, p. 183)
			What different actions do these terms imply during the goals' achievement?
		Time-based	'clearly stated a finish and/or start date.' (Subrt & Brozova, 2012, p. 183)
E	Added by MacLeod	Engaging	'Ownership' and involvement in creation 'Tell me and I'll
	(2012)& Subrt &	Ethical	forget, show me and I may remember, involve me and
	Brozova (2012)	Excitable	I'll understand' (MacLeod, 2012, p. 72)
	30	Engaging	The Marin Country of Country of Country & Coun
		Ecological	
3		Rewarding	Learners may be motivated by external or internal
7.7.		Reassess	rewards that may include 'an intellectual challenge, a
		Revisit	meaningful purpose, and a sense of accomplishment.'
		Recordable	(MacLeod, 2012, p. 72)

## Appendix D: Goal Attainment Scale example

Sharpe (2007, p. 7)

Level of Expected OUTCOME 3 months after the course	Rating	Behavioral Statement of EXPECTED OUTCOMES: - GOAL 1	Behavioral Statement of EXPECTED OUTCOMES: - GOAL 2
MUCH MORE Than EXPECTED	+2		
MORE than EXPECTED	+1		
EXPECTED Outcome	0		
LESS than EXPECTED	-1		
MUCH LESS Than EXPECTED	-2		

## Appendix E: Goal Acceptance and Goal Commitment Scales

## Renn et al. (1999)

**Table 1.** Goal acceptance and goal commitment items with maximum likelihood factor loadings<sup>a</sup>

		Factor loadi	
Item		1	2
Goal	acceptance		
1.	Acceptance of a goal means assuming the performance goal as your own personal goal for the task. To what extent did you accept the performance goal for case closures?	.88	
2.	To what extent did you honestly accept the case closure goal?	.89	
3.	In your opinion, how reasonable was the performance goal you were asked to work towards?	.69	-
4.	How would you have liked to have seen your performance goal changed, if at all?	.41	_
5.	If you were asked to participate in a similar study, what kind of performance goal would you prefer in comparison to the performance goal you were asked to try for in this study? <sup>b</sup>		
Goal	commitment		
6.	In your honest opinion, how hard did you try to achieve the goal?	_	.56
7.	To what extent did you strive to attain the performance goal?	-	.65
8.	Of the maximum effort (100%) you could exert in pursuit of your performance goal, what percentage do you think you did honestly exert?		.53
9.	Commitment to a goal means the determination and persistence to achieve a goal. To what extent were you committed to the performance goal for case closures?		.79
10.	How committed were you to achieving the performance goal you were asked to try for?		.80
11.	How determined were you to reach your performance goal?		.86
12.	How enthusiastic were you about attempting to achieve the performance goal?	t —	.67

<sup>b</sup>Item not included in the present study.

## Appendix F: Goal Setting Formative Questionnaire

Gaumer Erickson et al. (2018)

## Goal Setting Formative Questionnaire

Please **CHECK ONE** response that best describes you. Be honest, since the information will be used to help you in school and also help you become more prepared for college and careers. There are no right or wrong answers!

Student ID Da	Date				
	Not very like me			<b>—</b>	Very like me
	1	2	3	4	5
I set short-term goals for myself (like finishing all my homework or exercising for an hour).					
I set long-term goals for myself such as earning a college degree or entering a career.					
3. I set goals to achieve what I think is important.					
4. I imagine what life will be like when I reach my goal.					
5. My goals are meaningful to me.					
6. My goals are based on my own interests and plans for the future.					
7. I set goals to help me improve myself.					
8. I set goals to help me be more successful in school.					
9. I set goals to help me do my personal best.					
10. When I want to learn something, I make small goals to track my progress.					
I focus on my own improvement instead of worrying about whether other people are doing better than me.					
12. Even if I lose a competition, I'm pleased if I have improved.					
<ol> <li>Based on everything I know about myself, I believe I can achieve my goals.</li> </ol>					
14. When I set goals, I think about barriers that might get in my way.					
15. When I'm struggling, I set goals to help me improve.					
16. I set goals that are challenging but achievable.					
17. I set short-term goals to help me achieve my long-term goals.					
18. When setting a goal, I think about my past successes and failures.					
19. When I set a goal, I am confident that I can meet it.					

Gaumer Erickson, A. S., Soukup, J. H., Noonan, P. M., & McGurn, L. (2016). Goal setting formative questionnaire [Measurement instrument]. Retrieved from <a href="http://www.researchcollaborationsurveys.org/">http://www.researchcollaborationsurveys.org/</a>



For more information about R2 or to discover how you can bring the program to your organization, business or educational setting, please contact us.

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