Self-Efficacy

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Self-efficacy

Social Cognitive theory

Self-efficacy

- sources of self-efficacy
- measurement
- related constructs
- self-efficacy & exercise
- self-efficacy & sports

Social Cognitive Theory

Personal, behavioural and environmental factors operate as reciprocally interacting determinants of each other

Reciprocal determinism
human functioning is determined by the interaction of individuals' cognitive, affective and physiological states (Personal factors), Behaviour, and Environmental factors

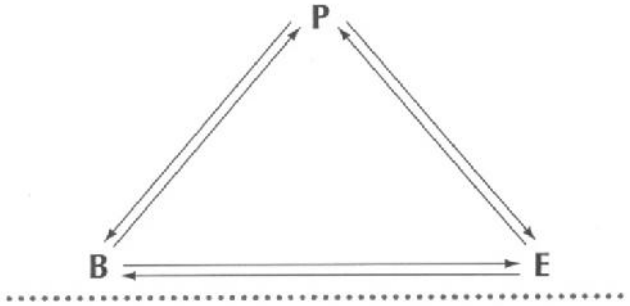

FIGURE 1.1. The relationships between the three major classes of determinants in triadic reciprocal causation. B represents behavior; P the internal personal factors in the form of cognitive, affective, and biological events; and E the external environment. (Bandura, 1986a)

The relative influence of these components will vary for different activities and under different circumstances

Social Cognitive Theory

Motivation

Dynamic and complex social cognitive process in which the individual becomes motivated, or demotivated, through assessments of his/her competencies within the achievement context and of the meaning of the context to the person (Roberts, 2001)

The functioning of at least one of three psychological constructs that *energise, direct, and regulate* achievement behaviour in physical activity

- personal goals
- emotional arousal
- personal beliefs

Social Cognitive Theory

Achievement

the attainment of a personally or socially valued goal in a physical activity context

Achievement behaviour

behavioural intensity
persistence
choice of action
performance

… the core of motivational inquiry => achievement motivation

Motivational processes

Constructs of social cognitive processes (Ford, 1992)

Personal goals

goals, shaped from within the person, significant others, cultural or social values, give meaning to achievement striving and energise action

Personal agency beliefs

beliefs on the person's capability to attain the goal that serve to initiate, maintain, increase, or inhibit achievement striving

Emotional arousal

source of energy, or evaluation affecting achievement striving

Motivation

Social cognitive approaches to motivation

Self-efficacy theory
Bandura

Goal achievement theory
Ames, Dweck, Maehr, Nicholls

Self-determination theory (social cognitive & organismic)
Deci & Ryan

Self-efficacy theory

Self-efficacy beliefs

> individuals' beliefs in his/her capabilities to execute necessary course of action to satisfy situational demands (Bandura, 1986)
>
> individuals' beliefs in his/her capabilities to organise and execute the courses of action required to produce given attainments (Bandura, 1997)

… influence the activities individuals choose to approach, the effort they expend on such activities, and the degree of persistence they demonstrate in the face of failure or aversive stimuli

Self-efficacy theory

Self-efficacy beliefs

Not concerned with the number of skills one has, but rather with what one believe can do with these skills under certain circumstances

Different people with similar skills, or the same people in different circumstances may perform poor, adequately or extraordinarily, depending on fluctuations in their beliefs of personal efficacy

Efficacy beliefs can predict/contribute to performance regardless of the skills one has

Sources of Self-efficacy

Enactive mastery experiences *(I've done it before)*
Prior experience, success

Vicarious experience – external sources *(Others can do it, so why can't I)*
Observing, modeling

Verbal persuasion *(You can do it)*
Instruction, feedback, expectations

Physiological and affective states *(It feels good)*
Arousal (psych-up / fear), fatigue, pain
Also emotional state (positive affect, anxiety)

Sources of Self-efficacy

Enactive mastery experience (Performance accomplishments)
The most influential source of self-efficacy
- Successes build robust efficacy beliefs
- Failure undermines it, particularly if it occurs before a sense of efficacy is built; repeated failure occur early in the course of action and do not reflect lack of effort or averse external circumstances

Strong sense of efficacy requires experience in overcoming obstacles through effort
Difficulties provide opportunities to learn how to turn failure to success

Mastery experience influences on self-efficacy depends on
- pre-existing self-knowledge
- perceived task difficulty
- effort expenditure
- selective self-monitoring

Sources of Self-efficacy

Enactive mastery experience – preexisting self-knowledge

Perceptions of self influence what people look for, and how they interpret information

Experiences consistent with self-beliefs are noticed – remembered
Experiences inconsistent with self-beliefs tend to be discounted - forgotten

Beliefs created by fictitious success may have an impact through self-persuasion
False low perceptions of efficacy are resistant to change

After a strong sense of efficacy is created, occasional failures are unlikely to undermine it

Confirmatory bias – beliefs of efficacy / inefficacy will produce corresponding performance that will further support pre-existing beliefs

Sources of Self-efficacy

Enactive mastery experience – Task difficulty

Success at easy tasks is redundant and does not add to previous beliefs
Success at difficult tasks further strengthen previous beliefs

New – complex tasks are hard to be evaluated
difficulty will be inferred from similar tasks or/and normative comparison

Performance contexts important in shaping beliefs
Success achieved with external aid have little efficacy value
Poor performance under averse conditions have weak impact
The more non-ability factors are involved in a performance the less the value of efficacy information

Sources of Self-efficacy

Enactive mastery experience – Effort expenditure

Performance attainments are partly determined by exerted effort

Beliefs on the role of effort may vary between individuals
- Effort enhances ability
- Effort compensates for limited ability

In relation to task difficulty and conditions
- Success at minimum effort on tasks considered difficult raise efficacy
- Success at maximum effort may have no or negative impact
- Failure at low effort has little efficacy value
- Failure at high effort implies limited ability

* Attribution theory – perceptions regarding the causes of outcomes

Attribution theory – locus of causality

		Locus of causality: internal	Locus of causality: external
Stability	stable	Ability	Task difficulty
	unstable	Effort	Luck

People high in efficacy attribute

- Success to ability (internal – stable)
- Failure to lack of effort / averse conditions (unstable)

People low in efficacy attribute

- Success to luck (external – unstable)
- Failure to limited ability (internal – stable)

Sources of Self-efficacy

Enactive mastery experience – Selective self-monitoring

Bias in selecting efficacy information
(depends on attentional, physical, emotional factors)

Positive – Negative bias will result in enhanced – reduced efficacy beliefs

Sources of Self-efficacy

Vicarious experience (indirect / external)

Modeling can serve as an effective mean for efficacy beliefs

More influential when

- No previous experiences exist
- Mixed experiences of success and failure exist
- Evaluation of capabilities relate to others' attainments;

The influence depends on

- model similarity
- task similarity

The greater the assumed similarity the more persuasive are the models successes or failures

Sources of Self-efficacy

Vicarious experience (indirect / external)
Model's success or failure can have positive or negative impact depending on situational circumstances

- Failure of skilled models due to strategy deficient can enhance efficacy if the person perceive can use more effective strategies
- Success of skilled models at maximum effort or exceptional tactics can decrease efficacy, as the task can be considered as too difficult

Self-Modeling (reinforces from previous successes – e.g. video)

Cognitive modeling (imagery)

Sources of Self-efficacy

Verbal persuasion
Significant others' faith and support in one's capabilities
greater effort, resistance to adversity

Evaluative feedback (capabilities through effort)

Ability feedback (instill ability)

Easier to undermine efficacy beliefs through persuasion, rather than increase them
Unrealistic high efficacy beliefs will be tested and rejected
Low efficacy beliefs will lead to avoidance (not tested)

Sources of Self-efficacy

Verbal persuasion
Persuader's credibility and knowledgeableness
the more believable the source of information the greater the effect

Discrepancy between self and other beliefs
Persuasion efficacy appraisals are most believable when moderately beyond individual beliefs

Inflated –misleading persuasion appraisals will lead to repeated failure that undermine the persuader's credibility, but also the person's efficacy beliefs

Effective persuasion involves cultivating and inspiring people's beliefs through
structured activities that bring success experiences
avoiding premature exposure to situations eliciting repeated failure

Sources of Self-efficacy

Physiological and affective states
Particularly important in domains involving physical accomplishments

Arousal, fatigue, pain, can be perceived as indices of inefficacy

The more sedentary a person is the more likely to perceive inefficacy due to physical symptoms

Attention is limited and has an important role
- The less absorbed people are in the activity, the more likely to focus on aversive bodily states

Cognitive appraisals the key to physiological – affective states
- source of activation / arousal
  - situational # personal factors
- perception and interpretation of the intensity of symptoms
  - arousal as facilitative state # debilitative state

Sources of Self-efficacy

Physiological and affective states
Prior experiences of success or failure are stored along with affective experiences
- negative mood activates thoughts of past failure
- positive mood activates thoughts of past accomplishments

Successes under positive moods enhances efficacy beliefs
Failures under negative mood undermines efficacy beliefs

Failure under positive moods tend to overestimate efficacy
Success under negative mood tend to underestimate efficacy

Sources of Self-efficacy

Integration of sources
Factors carrying efficacy value vary in degree of information and inter-relatedness depending on personal and situational circumstances

- reliability
- uniqueness
- redundancy

- additive effect
- relative effect

Efficacy beliefs are the product of cognitive processing of diverse sources of efficacy information conveyed enactively, vicariously, socially, and physiologically.

Once formed efficacy beliefs contribute to the quality of human functioning in diverse ways; through cognitive, motivational, affective and decisional processes through which accomplishments are realized.

Mediating processes – Mechanisms

Cognitive processes

Cognitive constructions
- how the self develops – how situations are perceived

Inferential thinking
- how action influence outcomes

Motivational processes

Attributions
- control over outcome

Expectancy value
- how outcomes are valued

Goals
- standards of performance that individual strive for

Affective processes
- how emotions are generated, perceived, and regulated

Self-efficacy

Dimensions of Self-efficacy

Level

individuals' beliefs in their capability to perform a specific task
(e.g. I can walk 3/5/7 km.)

Strength

individuals' degree of certainty that they are able to complete the task
(e.g. I'm 100/70/50% confident that I can walk 3/5/7 km.)

Generality

expectations regarding the accomplishment of similar or related domains
(e.g. I can jog / climb stairs for / dance …)

Self-efficacy measurement

Measuring Self-efficacy

Specific to particular domains of functioning rather than global

Situation – Task specific
e.g. duration of walking, running, lifting

Hierarchical measures
listing a series of tasks varying in difficulty, complexity or stressfulness

Level and Strength of beliefs
level: positive # negative (yes/no)
strength: certainty # uncertainty (1-10 or 10 – 100)

e.g. how certain you are you can lift 30 kgr. 1 2 3 4 5 6 7 8 9 10
how certain you are you can lift 40 kgr. 1 2 3 4 5 6 7 8 9 10
how certain you are you can lift 50 kgr. 1 2 3 4 5 6 7 8 9 10
…

Self-efficacy measurement

Measuring Self-efficacy - Exercise contexts

Domain –specific measures

Frequency and duration of exercising (Courneya & McAyley, 1994)

Exercising over time (Biddle, Goudas, & Page, 1994)

Activities (Ewart, et al., 1983)

Resistance to Barriers (McAuley, 1992)

Health behaviours (Grembowski et al., 1993)

General efficacy measures

Physical Self-efficacy Scale (Ryckman, et al., 1982)

Physical Activity Self-Efficacy Scale (Saunders et al., 1997)

Multidimensional Self-Efficacy for Exercise Scale (Rogers et al. 2008)

Self-efficacy

Efficacy expectations and Outcome expectations

Efficacy

beliefs regarding the ability to perform a particular behaviour
(e.g. take part in aerobic classes)

Outcome

beliefs regarding the results of the behaviour and its value
- certain behaviours will lead to certain ‘valuable’ outcomes
(e.g. taking part in aerobic classes will help me become healthier)

self-evaluative outcomes (satisfaction)
physical outcomes (condition)
social outcomes (acceptance, approval)

Self-efficacy

Efficacy expectations and Outcome expectations

Efficacy beliefs	Outcome expectancies: -	Outcome expectancies: +
+	Frustration Strive for change	Engagement Satisfaction
-	Disengagement Apathy	Self-devaluation Hopelessness

Self-efficacy

Self-efficacy & other related constructs

Self-confidence

generalized sense of efficacy; dispositional quality to be optimistic about one's abilities to be successful across a broad array of unrelated domains

Self-esteem

the favorable view individuals hold about themselves; sense of worth

Intentions and perceived control

beliefs regarding what individuals plan or intend to do
beliefs regarding the ease or difficulty of performing a behaviour; level of control individuals have over the behaviour

Self-efficacy

Self-efficacy as a determinant of behaviour

Self-efficacy may determine behaviour when

- sufficient incentives to act
- possession of requisite skills

Self-efficacy may exceed actual performance when

- little incentives
- physical / social constraints
- task ambiguity
- lack of information / experience of the task

Self-efficacy

Discrepancies between self-efficacy and behaviour/performance

- complexity of behaviour determinants (multiple factors contribute to behavioural regulation)
- faulty self-knowledge (over- / under-estimation)
- faulty assessment of efficacy / performance or mismatch
- temporal discrepancies

Self-efficacy research

Self-efficacy as a determinant of exercise

Salis et al. (1986, 1989, 1991, 1992)

self-efficacy predicted adoption (but not maintenance) of vigorous activity
self-efficacy predicted maintenance (but not adoption) of moderate activity

Self-efficacy the best among other motivational variables in predicting physical activity

Changes in self-efficacy the stronger predictor of changes in exercise

McAuley et al. (1992, 1993)

Self-efficacy plays different role in different stages of involvement

Efficacy based interventions enhance exercise adherence

Self-efficacy research

Exercise as determinant of self-efficacy

McAuley et al. (1991, 1993)

Acute exercise exposure increased self-efficacy
Exercise program further and more emphatically increased self-efficacy
Nine-month follow-up showed decreases, but an acute exercise test restored levels at post-program levels

McAuley et al. (1999)

Six-month program increased self-efficacy, which decreased six months later
Frequency of participation better predictor of efficacy than fitness change

Tate et al. (1995); McAuley et al (1995)

Less efficacious individuals more responsive to exercise interventions

Self-efficacy research

Self-efficacy in sport

Relationship between self-efficacy and performance at various samples
elite athletes
college athletes
young athletes

Robust, moderate to high, relationship between self-efficacy and performance
(Moritz et al., 2000)
Self-efficacy better predictor of performance, than other performance variables
(George, 1994; Kane et al., 1996; LaGuardia & Labbe, 1993)

Performance better predictor of self-efficacy, than self-efficacy of performance
(Haney & Long, 1995; Moritz et al., 2000)

Antecedents – previous performance variables strongest predictor of self-efficacy

Collective efficacy

A group's shared beliefs in its capacities to organise and execute actions to produce a desired outcome (Bandura, 1997)

More than the sum or average of individuals' efficacy
Coordination – Interaction – Integration

Mischel & Northcraft (1997)
Collective task efficacy: members' beliefs that the group has the task-related knowledge, skills and abilities to successfully execute a task

Collective interdependence efficacy: members' beliefs that the group has the knowledge, skills, and abilities to interact effectively in performing a task

Sources of collective efficacy
Sources of self-efficacy at group level +

Group composition
Leader's effectiveness

Literature search – Presentation

Self-efficacy in exercise (presentation 1)

- self-efficacy as a determinant
- self-efficacy as an outcome

Self-efficacy in sport (presentation 2)

- self-efficacy as a determinant
- self-efficacy as an outcome

Sources of self-efficacy

Key Texts

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: W. H. Freeman.

McAuley, E., Pena, M. M., Jerome, G. J. (2001). Self-efficacy as a determinant and an outcome of exercise. In G. C. Roberts, (Ed), Advances in motivation in sport and exercise. Champaign, IL: Human Kinetics.

Feltz, D. L. & Lirgg, C. D. (2001). Self-efficacy beliefs of athletes, teams and coaches. In R.N. Singer, H.A. Hausenblas, & C.M. Janelle (Eds), Handbook of Sport Psychology (2nd edition), pp. 340-361.