

How far have cognitive theories of motivation advanced our understanding of the motivation to learn?

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Abstract.

A review of some current theories on cognitive explanations of motivation is given, and specifically of student motivation towards learning. These include theories based on expectancy-value, attribution, cognitive dissonance, self-perception and self-actualisation. The theories are shown to advance knowledge in the area of motivation through challenging the early behavioural notions of motivation, and in accommodating social (social-cognitive), intrinsic and extrinsic influences on motivation.

Introduction.

Motivation can be described as a subjective drive or state of arousal in which there is an affiliated goal orientation. Student motivation involves the desire to participate in a learning process, and also involves the reasons which underlie student involvement in academic activities. In other words, motivation may denote a heightened state of alertness towards a learning task, with an intent of understanding, assimilating and applying information.

Early views of motivation viewed humans as passive in the absence of external conditions which, for example, define drives, trigger instinctual (innate) or learned behaviour, or are clearly associated with pain or pleasure (i.e. *psychological hedonism*); see Lefrancois (1999). Such accounts constitute the behaviourist view of motivation in which the consequences of behaviour regulate and control actions, i.e. learning through the reinforcement of favourable responses to stimuli. *Drive-reduction* theory can also be viewed as a behaviourist explanation of motivation, in which motivation is seen as a consequence of a state of deficiency (i.e. a need) within the individual (Hull (1951)). Such needs may be conditioned or innate within the individual, and give rise to drives such as hunger, thirst or a desire to satisfy pleasure or avoid pain. Thus motivation is seen as a means of drive reduction towards a minimum physical or psycho-biological level, or (in later theories) towards an optimum level of arousal (Zuckerman (1979)). In an educational context, instinctual or hedonistic theories do little to explain motivation towards specific learning tasks, and indeed individual differences in motivation, although behaviourism in learning is an area of continued debate (see, for example Wheldall and Glynn (1988)). However, psychological needs such as belonging, perceived achievement, personal goals or self-esteem, are likely to play an important role in student motivation. Thus, students are unlikely to be passive in their drives, in which, for example, the control of extrinsic factors can consistently lead to favourable learning approaches, but instead learning behaviours may arise as a result of the active processing and interpretation of information. In other words, motivation is likely to be influenced by cognitive processes through evaluation, anticipation, and emotion. Even so, in a classroom environment learning through reinforcement by praise and teacher support may be favourable, but such reinforcement is not a behaviouristic response, but driven by the cognitions and emotions of the student (Weiner (1984)).

In the following sections, a description of some key cognitive theories of motivation will be presented, and discussion given on the extent to which these have advanced understanding of the motivation to learn. In particular, attention will be given to expectancy-value, attribution, cognitive dissonance, self-perception and self-actualisation theories.

Cognitive Theories of Motivation.

“What could I get for this?”: the expectancy-value theory.

In the expectancy-value theory, motivated behaviour is viewed as a function of the expectations of the student towards success in the task, and the value of the goal which is being sought. A student is then believed to be most likely to attempt a task which is deemed achievable and of value, and thus a multiplicative relationship exists between expectancy and value. In terms of achievement motivation, the theory proposes that the overall tendency for a student to achieve in a specific task depends upon an orientation of either a *need for success*, or *failure-avoidance*. The specific orientation is generally viewed as a stable personality characteristic by adulthood, which may have been influenced by past (perceived) achievements and failures (see below). Perceptions of task value are also, of course, subjective and individual-dependent.

Biggs and Moore (1993) provide detailed discussion on the factors which may influence the perceived value of a task, as well as the expected level of success. For the former case, the authors focus on four categories of motivation which determines how a specific task becomes important (i.e. of value) to the student:

- extrinsic motivation, i.e. reward or punishment external (incidental) to the actual task
- social motivation, i.e. the desire to please peers or teachers, or to be valued by peers and teachers
- achievement motivation, i.e. a concern for self-enhancement relative to others
- intrinsic motivation, i.e. an interest in the activity itself, such as curiosity driven learning.

The extrinsic aspect of motivation is similar to the early ideas of operant conditioning (Skinner (1953)), but in this case the student evaluation of value is recognised, rather than any mechanical conditioning independent of cognitive processes. The expectancy-value theory thus accommodates the large individual variations under similar environmental (extrinsic) conditions.

As mentioned above, past experiences may influence the student perception of expected task accomplishment. Thus, issues of situational self-esteem may influence the expected level of success. Bandura (1977) describes such a process as self-efficacy, i.e. the belief in one's capabilities to carry out a task. In addition to past experiences, self-efficacy may also be influenced by the student perceptions of task difficulty, significant others' beliefs of student successes, and the specific *attributions* (see below) made towards past performance in related tasks (Biggs and Moore (1993)).

An important prediction of the expectancy-value theory is that students highly motivated towards success will tend to choose learning tasks which are of some challenge, and thus some learning value. In contrast, students who are highly motivated towards failure avoidance may either choose very easy tasks to ensure success, or tasks which are so difficult that embarrassment does not ensue failure (McClelland (1958)). However, in practice, the experimental evaluation of such predictions have led to mixed results, and the theory has been criticised by some researchers to be overly simple and deterministic (predictable) of student behaviour (Lefrancois (1999)). Furthermore, there is undue recognition of the variety of causes of behaviour.

“What’s causing this?”: the attribution theory.

Attribution theory is concerned with the variety of causes which determine motivation towards a learning task, or indeed any achievement situation. The nature of such attributions are believed to depend upon the personality of the individual, and in specific an aspect of personality referred to as locus of control (Weiner (1992)). The locus of control defines the perceived sources of control over one's behaviour, which is measured along a dimension of *internal* to *external* control. Students with an internal locus of control view themselves as having control over their destinies and behavioural outcomes, and thus tend to take responsibility for their actions. In contrast, students with an external locus of control attribute outcomes of behaviour to factors outside their control, such as luck or task difficulty. In either case, it is perhaps not the reality of control which is important, but the student perception of control. Furthermore, in both cases, the causal attributes may either be *stable* (fixed) or *unstable* (variable) over time and across different situations. As illustrated in Table 1, the locus of control and stable-unstable dimensions of causality define the four key attributions of success or failure: student effort and ability, luck, and task difficulty. Typical feelings associated with success or failure for each locus are also shown in Table 1.

An issue of controllability (personal responsibility) also arises with such causal attributions, such that for, example, situational effort is viewed as controllable by the student, whereas luck is not. Given the locus of control, stability and controllability, Weiner (1992) then defines eight classes of causal attributions towards achievement. For example, an external-stable-uncontrollable stance would be indicative of a student of low responsibility who may believe that failure in a learning task is due to its difficulty, whereas a student with an internal-unstable-controllable stance would perceive high responsibility for failure in a task, which in this case may be attributed to a lack of study.

The locus of control, stability and controllability can also be related to the failure-avoidance or success motivated orientations mentioned earlier. For example, in the former case, attribution theory would suggest an external locus of control such that:

- (i) failure in a task is perceived as uncontrollable by the student (e.g. the task was too difficult or was an unlucky choice), and thus any negative effect on the student's emotions or self-esteem is avoided
- (ii) success in a task is perceived by the student as expected (e.g. it was an easy task or was a lucky choice).

In both cases the student gains little satisfaction in the learning process. Furthermore, if the difficulty of a learning task is viewed as stable in the context of a specific subject matter, then the student will be likely to expect failure in any future related tasks.

In contrast, a student with an internal locus of control will attribute failure in a task to effort or ability. Thus, there is greater emotional involvement in the outcome of the performance. Such emotional involvement is in turn likely to be associated with students who are highly motivated for achievement, and hence the supposition by Mueller and Dweck (1998) that high achievers have an internal locus of control. Likewise, Condry and Chambers (1978) have indicated that students with an internal locus of control are likely to employ more logical information gathering and decision making strategies than students with an external locus. As for the success and failure-avoidance orientations in expectancy-value theory, evidence suggests that internal and external orientations become a relatively stable personality characteristic as adulthood is approached (Lefrancois (1999)).

Dweck (1986) has given some consideration to the nature of *ability* attribute that a student perceives. In particular, it is postulated that students subscribe to one or two views of intelligence: the *entity* theory or the *incremental* theory. The former describes a fixed view of ability (intelligence), such that the student is motivated towards situations which may lead to a positive regard of this ability, whilst avoiding unfavourable judgements. In other words, students who relate to the entity theory are likely to be *performance goal* orientated, i.e. to gain favourable judgements of their competence. In contrast, the incremental theory describes a view that ability is malleable through work and effort, such that the student is motivated towards a *learning (mastery) goal* orientation. In other words, students who relate to the incremental theory are likely to aim to increase competence through the mastery of learning tasks. As mentioned above, such students are believed to have intrinsic motivational characteristics, e.g. enjoyment of the learning task or the effort needed in the learning.

The analyses of attribution research by Dweck suggests that performance orientated individuals require a high confidence in ability to engage effectively in new challenges and learning tasks. Low confidence in such individuals is postulated to lead to *helplessness*, in that any failure is viewed as a direct reflection of ability. In contrast, students who are learning orientated are likely to be persistent with learning tasks irrespective of confidence levels. Interestingly, some research evidence indicates that low-confidence students may in general be higher achievers (Dweck (1986)). The low confidence is believed to arise from low expectancies of performance, rather than any poor self-opinion on past attainment.

"Is there consistency within me?": the cognitive dissonance theory.

The cognitive dissonance theory of Festinger (1962) proposes that individuals will attempt to maintain consistency among cognitions and attitudes (beliefs) or overt behaviours. Thus, individuals will be motivated to adjust attitudes or beliefs to alleviate cognitive dissonance. In an educational

context, one implication of such a theory is that teacher attempts towards a learning objective should give some recognition of the attitude of the student towards the teaching methodology. For example, if a student believes that their source of learning can only come from the teacher, then there may be some initial resistance towards peer-learning initiatives. The dissonance may either be resolved through a change in the student belief, or through poor co-operation in the task. Furthermore, self-reflection of student behaviour (through teacher facilitation) could help the student to realise misconceptions or misinterpretations of motives, and likewise reveal to the teacher some information on the cognitive processes which are resulting in, for example, poor attitude or motivation.

“What do I see in me?”: the self-perception theory.

The self-perception theory proposes that an individual's attitudes and beliefs are considerably influenced by observation of their own behaviour (Reber, 1995). Thus, as observation of another other person's behaviour leads to judgements of their feelings and motives, so does self-observation of one's own behaviour. Such a theory leads to cognitive-behavioural interpretation of motivation in that it is implied that motives and attitudes can be changed by changing behaviour, but rather than being a passive (behavioural) response, it is the student interpretation (cognition) of behaviour which is deemed important (c.f. behavioural interactionism). However, the self-perception theory does not explain the motives behind a behaviour in the first place. There is, of course, some commonality between the self-perception and cognitive dissonance theories in that held beliefs may influence motives after self-observation, but in the case of self-perception theory, dissonance does not necessarily have to exist.

“What do I need?”: the self-actualisation theory.

Cognitive motivational approaches have also considered the notion that individuals have a need for competence and control. One example of such an approach is based on the self-actualisation theory of Maslow (1970), and describes a humanistic stance to learning in which intrinsic influences on motivation are emphasised. Maslow proposes that human motivation arises from a hierarchy of needs, which include basic needs such as physiological, safety, belongingness and self-esteem, and meta-needs such as cognitive, aesthetic and ultimately self-actualisation. Self-actualisation itself can be viewed as a process of growth in which there is the unfolding and fulfilment of the self (Lefrancois (1999)). Maslow specifically views self-actualisation as a level of development which arises once all basic and meta-needs are fulfilled, such that actualisation of the full personal potential can take place. However, self-actualisation has also been considered as an inherent motive (process) for learning and development, rather than an actual state.

In an educational context, self actualisation theory implies that basic needs of students should be addressed prior *growth* (scholastic) needs. In modern society, low student self-esteem may be a principal hindrance towards further growth (see, for example, Lawrence (1996)). Furthermore, the self-actualised state suggests a certain degree of autonomy, and “general transcendence of the environment” (Reber (1995)), which suggests that in a school context, perhaps encouragement of a critical evaluation of attitudes, beliefs and social and political structures, could help students develop a reflective and philosophical approach in their learning, and thus possible motivation to achieve (or extend) their potential.

Summary:

(i) the advances through cognitive theories?

How far do the above cognitive theories advance our understanding of the motivation to learn?

In summary, cognitive theories:

- Accommodate the variable and individual-based characteristics of motivation through, for example, different task expectancy / value, or different student orientations based on a performance or learning stance, or a locus of control
- Account for social, intrinsic and extrinsic influences on motivation. For example, Dweck's goal theory accommodates self-conceptions (e.g. of intelligence), and can thus be viewed as a social-cognitive approach.
- Significantly challenge the often simplistic views of motivation based on mechanistic (behavioural) models, or the *neurotic* or *disturbed* explanations of psychoanalytic models.

(ii) and some criticisms?

Mixed results have been seen in predictions of the expectancy value theory, whereas research on attribution theory has been often criticised for being outside the school context, and in seeking causal explanations for situations which provoke causal explanations (and thus may be atypical). Furthermore, as mentioned above, the success / failure-avoidance or the internal /external control orientations are deemed to be stable as adulthood is approached, and not necessarily in young children. For example, children may not be able to clearly distinguish the relationship between success and ability or effort. Thus, the causal dimensions for explaining motivation do not necessarily hold. Self-actualisation theory is widely promoted in the general literature, but does not specifically address situational motivation, or why there is often a lack of will, effort or sacrifice towards self-actualisation (re *Jonah complex*). Likewise, self-perception and cognitive dissonance theories both have failings regarding explanations of original motivation for behaviour, and how held beliefs or positive or negative cognitive evaluations arise.

Conclusions.

Several cognitive theories of student motivation have been described, and show to offer insight into learning processes which goes far beyond the limited and simplistic early models based on, for example, behaviourism or psychoanalytic theory. The complex interaction of social, intrinsic, and extrinsic factors is broadly accommodated by the theories, and thus yields understanding as to why student motivations can be subjective and situation dependent. Continued research is needed in this area for elaboration of such interactions, and indeed the developmental processes which lead to the cognitive approaches.

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Table 1- Causal attributions for success and failure and associated feelings; adapted from Lefrancois (1999).

	<i>internal locus of control</i>	<i>external locus of control</i>
<u><i>stability</i></u>		
<i>unstable</i>	situational effort	luck
<i>stable</i>	ability; persistent effort	objective task difficulty
<u><i>associated feelings</i></u>		
<i>success</i>	pride, competence, confidence	grateful, thankful
<i>failure</i>	guilt	anger, surprise