# Motivating Learning Environment and Motivation as Shaped by the Environment

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## Abstract

*In the current article, the author reviews central contemporary motivational perspectives that differ in their theoretical assumptions about the nature of motivation and about the role of the environment in students' motivation. The article highlights the central assumptions of each perspective about the source and malleability of motivation, and about mechanisms of motivational change, and how these undergird recommendations for the design of motivating learning environments. The research concludes by pointing to the promise of emerging complexity models of motivation, and the implications of this new approach for research on and design of motivating learning environments.*

**Keywords:** motivation; learning environment; practice; motivational perspectives; theoretical assumption; models of motivation; promoting motivation; adaptive educational environment.

### 1.0. Introduction

Throughout the scientific study of motivation, understanding the processes that underlie people's motivation has always involved considering the environment within which those people live and act. However, different motivation theorists conceive of the environment as having very different roles in motivation, from the minor role of providing external cues that trigger people's innate drives to the all-encompassing role of strongly shaping people's motivation and action through systems of rewards and punishments or through cultural scripts for roles and behavior. Such differences in views of the role of the environment in motivation have meaningful implications for the questions that researchers ask, the data they collect, the way they interpret those data, and the recommendations they make for designing motivating learning environments. In education, the role of the environment in motivation is of utmost importance. Arguably, education is all about designing learning environments that promote students' motivation and learning. Differing conceptions of the environment's role in student motivation guide educators to make different curricular and pedagogical decisions, teachers to assign different tasks and interact differently with students, policymakers to set different goals and to establish different accountability systems, the public to expect different outcomes from schools and from reform efforts, and researchers to ask different questions and generate different hypotheses about teachers' and students' motivation, learning, and achievement. For example, conceptions of the adaptive educational environment as one that shapes students' malleable motivation is likely to underlie curricular designs that aim to change diverse students' motivation. In comparison, conceptions of the adaptive educational environment as one that matches students' stable motivational proclivities is likely to underlie decisions to educate students with different motivational characteristics in different types of environments. In the current article, we review several central perspectives on the role of the environment with respect to students' motivation, and their implications for designing motivating learning environments. Importantly, we highlight how the environment's role in each perspective is embedded in a network of theoretical assumptions concerning the nature of motivation, and particularly, its source, malleability, and mechanisms of change. The role of the learning environment in motivation, and principles for environmental design, differ greatly when motivation is thought to manifest itself as a stable individual characteristic versus as a changeable environmental event. We begin our review with two dominant motivational perspectives that ruled the field of motivation in the first half of the 20th century, and that continue to influence contemporary motivation thought and educational practice: Implicit Needs theory and Behaviorism. We continue with a review of the humanistic perspective on motivation, paying particular attention to its most prominent contemporary exemplar, Self-Determination Theory. We then review the theoretical perspective on interest; follow with the family of social-cognitive theories that have been prominent in the field of motivation in the past few decades; and end the review with the social-cultural approach to motivation. We conclude the chapter by pointing to the emerging influence of the complexity science perspective on motivation theory, and its implications for motivational theory and research, and to the design of motivating learning environments.

### 2.0. Motivation from the Perspectives of Implicit Needs Theory

One crucial distinction between motivational theories — particularly when considering the role of the environment — is between perspectives that view motivation as a stable individual characteristic and those that view motivation as varying within the individual across contexts and tasks. The assumption that motivation is malleable implies that environments

can be designed to change students' motivational processes. In contrast, the assumption that motivation is a stable individual trait implies that the learning environment should be designed to fit the motivational characteristics of students; or alternatively, that the environment should be designed to support a deep and potentially difficult process of personality transformation. Arguably, the most prominent theory that views motivation as a stable individual trait is Implicit Need theory. Implicit Needs theory focuses on variability in individuals' dispositional responses to achievement situations for explaining people's action and achievement. The central motivational construct is the "need": an unconscious network of associations between environmental stimuli and emotions (McClelland, 2001). Theorists assume that these associations were learned through connections between environmental events such as parental feedback and emotional experiences during the early years of development, and were then generalized to similar environmental cues.

The network of associations manifests in a stable pattern of emotional and behavioral reactions to particular environmental cues, which constitute an individual's tendency or disposition. The theory defines three central needs — achievement, affiliation, and power — that are based in different affective-associative networks (McClelland, 2001). Environmental cues that signal opportunities for achievement, affiliation, or power elicit positive emotions (e.g., excitement), which lead in turn to motivated action — approach motivation. People may also associate environmental cues with negative emotions (e.g., anxiety), which lead to behavioral disengagement or anxious action — avoidance motivation. These networks are assumed to be "arranged in a hierarchy of strength or importance within a given individual" (McClelland, 2001, p. 322), thus shaping people's typical reactions to the world, and manifesting as their personality. The associative network studied most concerns achievement. The network that characterizes positive emotional reactions to cues indicating opportunities for achievement was labeled the "achievement need", whereas the network that characterizes negative emotional reactions to achievement cues was labeled "Fear of Failure." In concordance with the assumption about their implicit or non-conscious character, researchers assessed individuals' achievement needs with a projective measure, labeled the Picture Story Exercise (PSE; also known as the Thematic Perception Test, or TAT). In this measure, people write a fictional story about a picture shown to them that includes an achievement cue. The story is presumed to tap people's unconscious reactions to the achievement cues portrayed, and is therefore analyzed for affective and behavioral expressions of achievement (Schultheiss, Liening, & Schad, 2008). Some Implicit Needs researchers believe that achievement needs are not unconscious and that people can report on them directly (e.g., Kaplan et al., 2012). Interestingly, although the projective measures and the self-report instruments ostensibly measure the same needs, the two measures are often uncorrelated and are found to be associated with different outcomes (Schultheiss & Burnstein, 2005). Thus, they appear to assess different motivational processes (McClelland, Koestner, & Weinberger, 1989). Also of note, researchers from these two methodological traditions developed different approaches to applying their findings to the design of learning environments; we consider these next.

Motivating learning environments according to the Implicit Needs perspective, one approach to designing motivating learning environments in the Implicit Needs perspective relies heavily on the assumption that these needs constitute stable, individual-difference characteristics. Because this assumption provides little hope for changing students' motivational patterns, the approach emphasizes the role of different environmental cues in eliciting different emotional and behavioral reactions among students with different levels of achievement needs. For example, in research that assessed need for achievement using self-report scales, Harackiewicz and her colleagues found that students who reported high need for achievement (i.e., High Achievement Motivation students, or HAMs) felt more energized and manifested more adaptive motivation in learning environments that emphasize competition and evaluation and provide opportunities to pursue goals of demonstrating high competence, particularly relative to others. In contrast, students who reported low need for achievement (Low Achievement Motivation students, or LAMs) felt more comfortable and manifested more adaptive motivation in learning environments that emphasize collaboration or individualized learning, and provide opportunities to pursue goals of developing competence, learning, and understanding (Durik & Harackiewicz, 2003; Harackiewicz & Elliot, 1993). These research findings imply that learning environments that highlight different cues about opportunities and goals for engagement would be motivating to students with different motivational characteristics. More specifically, competitive-evaluative environments suit students with high need for achievement, and collaborative-individualized environments are best for students with low need for achievement.

A second, quite different, approach to designing motivating learning environments within the Implicit Needs perspective aims at changing individuals' deep-seated motivation. Remarkably, it was David McClelland — the person most associated with the Implicit Needs perspective — who suggested and engaged in interventions to change people's motivational processes (McClelland, 1972). He theorized that the relative stability of the affective-associative network that provides the basis for the achievement need is not an inherent impediment to changing the person's motivation. Along with the assumption that this cluster of affective associations is one among other hierarchically organized clusters, McClelland (2001) argued that "the problem becomes one of moving its position up on the hierarchy by increasing its salience compared to other clusters" (p. 322). To do this, he incorporated theoretical understandings and research findings from multiple frameworks — ranging from radical behaviorism and Freudian psychoanalysis, through cognitive processes, to humanistic psychology — into motivational training programs that promote the self-transformation of one's motivational system.

In what may seem an extraordinary precursor to later motivational models, McClelland (2001) suggested designing motivational workshops that utilize the following principles: (1) persuade individuals that their "behavior should change and that it can change" (p. 324); (2) take people out of their day-to-day context; (3) teach the tenets of the theory; (4) enhance people's understanding of motivation through interpreting data — especially data about themselves!; (5) have people explore the relations of thought patterns and actions through hands-on simulations of real-world situations; (6) provide feedback on personal processes and encourage thinking about implications for their "self-concept" (p. 327) and for their actions in the world; (7) encourage people to explore and integrate their view of themselves as achievement-oriented with other aspects of their self-image; (8) use discussion and role-playing to highlight and facilitate people's exploration of the meaning of possible conflicts between their desired achievement orientation and prevailing cultural values and norms; (9) request writing a tentative but realistic personal life-plan for the near future; (10) encourage the formation of support groups and follow up periodically; and, importantly, (11) conduct the motivational workshops while creating facilitator-participant relationships that are "warm, honest, and non-evaluative" (p. 328). These principles and practices were theorized to promote motivation by guiding workshop participants through a transformation of their implicit achievement associative networks.

It is noteworthy that the environmental intervention focused explicitly on the power of self-transformation. McClelland explicitly called the process that the participants were going through "self-study" (2001, p. 329), and asserted that "the only kind of change that can last or mean anything is what the person decides on and works out by himself" (p. 329). Hence, in order to create a motivating learning environment for each participant, the workshop facilitator was "not to criticize his past behavior or direct his future choices, but to provide him with all sorts of information and emotional support that will help him in his self-confrontation" (p. 329). McClelland first implemented his achievement motivation interventions with business people (2001), but later applied the same principles in schools (Alschuler, 2013; McClelland, 1972). Elementary and middle school students received motivational (re-)training, in either specialized workshops run by experts during a few weekends, or as an integrated curriculum administered by the students' teachers. In both programs, "children were taught the scoring system for n-Achievement and practiced various goal-setting games so that they could learn to think, talk, and act like a person high in n-Achievement" (McClelland, 2001, p. 567). McClelland (2001) reported that despite some effects in quantifiable subject domains such as math and science mostly among boys, the effects of the short-term programs on eighth-grade students' grades were less than desirable. The longer-term program administered by teachers to sixth graders was somewhat more successful. It led to students having greater performance in seventh grade compared to students who did not receive the achievement motivation training. Importantly, McClelland (2001) also recognized the limits of this approach. Highlighting the complexity of human motivation, the variability of motivational situations, the multiple paths that motivation may take, and the difficulty of affecting deep motivational change, he cautioned against setting too grandiose expectations for the process and against "developing 'all purpose' treatments, good for any person and any purpose" (2001, p. 333). Instead, he used "contextual" language to advocate for "specific treatments or educational programs built on laboriously accumulated detailed knowledge of the characteristic to be changed" (p. 333).

### 3.0. Motivation as Shaped by the Environment

In contrast to the Implicit Needs perspective on motivation, the behaviorist approach views the environment, rather than the person, as the primary source of motivational phenomena. The two perspectives do share some assumptions — for example, in relation to certain basic motivational mechanisms: associative links between events in the environment and individuals' patterned responses. However, the perspectives differ in several important ways, including their emphasis on the meaningful motivational unit, their assumptions about the malleability of associative networks, and, hence, of course, their recommendations for creating environments that promote motivation. Similar to the Implicit Needs perspective, the behaviorist approach views motivated behavior as based in a relationship, or association, between an environmental stimulus and a response by the individual (Skinner, 2013; Thompson, 2016). However, whereas the Implicit Needs perspective focuses primarily on the emotional responses elicited by environmental cues, the behaviorist perspective emphasizes the behavioral responses in this association. Indeed, one of the tenets of the behaviorist approach is its focus on observable and measurable specific phenomena, namely observed behavioral episodes (Cooper, Heron & Heward, 2007). Two primary mechanisms constitute the building blocks of motivated behavior according to the behaviorist approach: classical conditioning and operant conditioning (Skinner, 2013). In classical conditioning, a primary association between a natural behavioral response to an environmental stimulus is used to create a secondary association between that response and a different, neutral, stimulus (Pavlov, 1927). The theoretical assumption is that, primarily, classical conditioning operates on fundamental biological responses (e.g., autonomic bodily reflexes of salivation, blood pressure, heart rate, sweating) and basic emotions (e.g., happiness, fear). Conditioned stimuli may also become themselves sources for additional conditioning. Whereas classical conditioning is based on an association between an environmental stimulus and a consequent response, operant conditioning is based on the association between a particular behavior and a consequent environmental event (Skinner, 2013). Importantly, the operant conditioning mechanism also begins with an environmental cue that signals to the individual that certain types of responses may be called for. Once a behavioral response is emitted, however, it is the environmental consequence of that response that shapes future patterns of behaviors: if the environmental consequence is experienced by the individual as positive and desirable, it will reinforce the behavior and increase its likelihood in future occasions in which the environmental cue is present. In contrast, when the

consequence is not positive, and particularly when the consequence is undesirable (i.e., punishment), the likelihood of the behavior to appear in the future under such environmental circumstances will decrease. This sequence of Environmental Stimulus — Behavioral Response — Environmental Consequence constitutes the primary unit of analysis and is labeled the Three-Term-Contingency (Sidman, 2016; Vargas & Vargas, 2011).

The behaviorist assumption is that after experiencing contingent consequences, a particular behavior is shaped to appear frequently or be extinguished under particular, discriminating, environmental cues. Behaviorists assume that, over time, the two conditioning mechanisms integrate in complex ways to shape individuals' habitual response patterns under different environmental circumstances. Some behaviorist conceptualizations include additional sets of contingent associations among environmental stimuli that render the primary three-term-contingency unit as contingent itself on other sets of environmental stimuli (Sidman, 2016). In that way, behavioral responses can become more context sensitive. However, behaviorists are also concerned with the generalization of behavioral responses to other contexts and environmental cues that are different from those eliciting the original behavior. This is of particular interest in educational settings, in which the goal is for students to acquire behavioral responses that they can then manifest in new, albeit relevant, situations (Codding & Poncy, 2010). For this purpose, behaviorists deliberately control and vary the stimuli that elicit behavioral responses and the reinforcement of behaviors (Shahan & Chase, 2002).

Importantly, the behaviorist approach is diverse. In addition to a radical strand, which only considers observable behavior, behaviorism includes various strands that manifest influences from such psychological fields as Freudian psychoanalysis, Gestalt, cognitive information processing, and ecological system theory (Meazzini & Ricci, 2016). Different behaviorist psychologists also focus on behavior of different scales, ranging from a particular, short-term, and discrete act (e.g., responding with "4" to the stimulus "2+2") to very long-term and asynchronous behavioral patterns that can be viewed as personality traits (e.g., behaving like a good student; Thompson & Zeiler, 2016). Nevertheless, despite such differences, behaviorist psychologists all share the concern with the coherent and systematic relationship between the manifested behavior and "specific discriminative, eliciting, evocative, and reinforcing events" in the environment (Thompson, 2016, p. 15). According to sociocultural motivational perspectives, individuals' motivation cannot be understood in generic, decontextualized terms — it is inherently contextualized. Therefore, a particular program that was successful in promoting students' motivation in one context is not expected to necessarily produce similar results in another context. Accordingly, principles of creating motivating learning environments involve studying and modifying motivational processes in the context; for example, by undertaking design experiments or conducting action research — cycles of observing the nature of motivation in the particular context, implementing change through introducing different types of activities, and following with further contextualized observations and change (Fishman, Penuel, Allen, Cheng & Sabelli, 2013). The objectives of these motivational interventions are more localized and modest compared to those that stem from other approaches to motivation, with the exception, perhaps, of the behaviorist approach.

When designing activities for intervening in motivational processes, sociocultural theorists aim for teachers and students to work in their motivational ZPD (McCaslin, 2009). The assumption that the ZPD constitutes the central mechanism for motivational change implies the incorporation of substantial opportunities for social interactions among teachers and students to negotiate, provide guidance, engage, and appropriate the goals, values, artifacts, and practices embedded in the activities. Sociocultural theorists note that different cultural activities (e.g., tests versus collaborative inquiry projects) have different goals and, hence, call for different types of engagement and motivation. Such a perspective seems agnostic with regard to the desirable type of motivation (e.g., intrinsic or extrinsic motivation, mastery or performance goal orientations) and to imply that adaptive motivation involves appropriation of the particular goals, values, and modes of action of the community of practice. However, more recently, sociocultural theorists have argued for incorporating an ideological stance that, rather than mere socialization into the community of practice, emphasizes promotion of engagement that empowers students to transform those communities and practices (Sannino, 2011; Stetsenko, 2008). This approach advocates for designing activities that support students' negotiation of the meaningfulness of activities, with the goal of intentionally promoting students' participation in changing the activities, and hence, their own motivation. Features of activities that promote such intentional negotiation of engagement are similar to practices supportive of students' need for autonomy in SDT and include steps that encourage students to (1) critically assess the activities; (2) express positive but also disagreement, negative emotions, and resistance to engaging in the activities; (3) generate new foci and modes of engagement in the activity, and (4) commit to and engage in the newly generated activities. Engeström and his colleagues (Engeström, Sannino & Virkkunen, 2014) term such intentional students' participation "transformative agency."

### 4.0. Conclusion

Our aim for this review was to highlight the contention that views of motivating learning environments are based on epistemological, at times ontological, and often ideological, assumptions concerning the nature of motivation — its source, malleability, and mechanisms of change. These assumptions guide the conceptualization of motivation, its investigation, and the consequent recommendations for applying the theoretical understandings and empirical findings to educational practice. In some cases, there may be significant agreement between different theories about the principles to

apply so as to create motivating learning environments. This is the case, for example, among the various motivational perspectives within the social-cognitive approach, interest, and self-determination theory. In other cases, assumptions lead to quite different, at times contradictory, recommendations for educational practice. This is the case, for example, in the recommendations emanating from humanist versus behaviorist approaches to motivation. And in some other cases, assumptions of different approaches may lead to diverging but not necessarily contradictory recommendations for practice. This is the case, for example, in the recommendations emanating from the sociocultural and social-cognitive approaches to motivation. Choice of a particular set of principles in designing motivating learning environments should follow an intentional explication of the definition of the desired educational goals and motivation in the context, and of the assumptions about the nature of motivation. It should also involve recognizing the dynamic and complex nature of motivational phenomena, and incorporate formative assessments that systematically evaluate the effect of applying particular design principles on students' motivation and learning. Results of the assessments should then contribute to re-examination of assumptions, goals, environmental design principles, and their implementations in the particular context (Kaplan et al., 2012).

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