

thinking skills and problem-solving processes involved in 21st century conceptions of literacy.

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Motivation and Lifelong Learning

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Promoting lifelong learning has received increased attention recently from the educational and business communities. Scholars and trend forecasters, looking toward the needs of the 21st century, have reached nearly unanimous agreement about the importance of a constantly improving and technologically competent workforce that can compete in global markets. There is also general agreement about the importance of various attitudes or motivations as underlying lifelong learning in general and in particular technical fields. How can educational psychologists best apply what they know about motivation and learning to the issue of promoting lifelong learning attitudes and skills, from elementary through postsecondary educational levels, and in training settings that include business and industry? Implications for the role and preparation of educational psychologists for the 21st century include a greater emphasis on "grand theories" that integrate principles of learning and motivation, of cognition and affect, and thus address the whole person in context.

How do we describe the relationship between motivation and lifelong learning? In many ways these two constructs are indistinguishable. The motivated person is a lifelong learner, and the lifelong learner is a motivated person. To bring clarity to this issue, it is necessary to define what is meant by each term, and then to define on the basis of the properties of each, the relationship between the constructs of motivation and lifelong learning. In so doing, we begin to see how to nurture each from early learning experiences into adulthood. This article focuses on emerging theoretical and empirical principles defining interrelationships between motivation and lifelong learning, discusses implications of these principles for anticipated lifelong learning needs of the 21st century for both the learner and society, and concludes with recommendations, based on these principles and their implications, for the roles and preparation of educational psychologists.

DEFINING TERMS

To understand more precisely what is meant by the constructs of motivation and lifelong learning, we need to look at recent advances in our understanding of psychological processes related to learning. I believe that we are now seeing, and will continue to see in the future, a movement toward integrative or "grand theories" that can more holistically account for complex human psychological and behavioral functioning in a variety of contexts. From these broader perspectives, phenomena such as lifelong learning, differential propensities (motivation and willingness) of individuals to pursue lifelong learning goals, and external conditions that facilitate these propensities can be more fully understood.

In this milieu of theoretical integration across diverse psychological disciplines and orientations, a number of basic principles of psychological functioning that apply across all individuals have begun to emerge. It is in the context of these principles that the relationships between motivation and lifelong learning are clarified. The following are what I see as some of these emerging psychological principles:

Principle 1: Learning is naturally an active, volitional, internally mediated and individual process of constructing meaning from information and experience, filtered through each individual's unique perceptions, thoughts, and feelings.

This principle implies that students have a natural inclination to learn and will assume personal responsibility for learning, monitoring, checking for understanding, and becoming active, self-regulated learners in the right motivational atmosphere. It further implies that learning is a unique process based on personal constructions of meaning.

Principle 2: Learning is facilitated by social mediation (interactions and communication with others) in a variety of flexible, heterogeneous (cross-age, culture, etc.), and cooperative group settings.

The interaction of internal and external factors in learning is highlighted in this principle. For example, higher order thinking and problem solving as well as social competence are encouraged in learning settings that allow for and respect diversity in views, thinking processes, and learning strategies.

Principle 3: Beliefs and thoughts, resulting from prior learning experiences and based on unique interpretations of external experiences and messages, become each individual's separate reality or way of seeing life.

Learners have a rich internal context of beliefs, goals, expectations, feelings, and motivations that can enhance or interfere with the quality of thinking and information processing. This context needs to be understood by the learner and by learning facilitators to maximize learning and performance goals.

Principle 4: Thoughts and interpretations of external experiences and messages begin a cycle of cognition, affect, and reaction that serves to reinforce or support the initial thought(s) or cognitive belief structure.

The relationship between thoughts, mood, and behavior underlies the psychological health and functioning of individuals as well as their learning efficacy. Understanding cognitive constructions and belief systems is an important part of seeing how to facilitate both learning and motivation to learn.

Principle 5: In the absence of insecurity (e.g., feeling afraid, being self-conscious, feeling incompetent), individuals are natural learners and enjoy learning.

Motivating learning is largely dependent on helping to bring out and develop students' natural motivations and tendencies to learn rather than "fixing them" or giving them something they lack. At the same time, however, when individuals are motivated to learn, facilitating the development of higher order learning strategies and thinking skills has been shown to enhance learning efficacy.

Principle 6: Self-esteem and motivation are heightened when individuals are in respectful, caring relationships with others who see their potentials, genuinely appreciate their unique talents, and unconditionally accept them as individuals.

Individual's access to higher order, healthier levels of thinking, feeling, and behaving is facilitated by quality personal relationships. When individuals can be helped to feel better about themselves and see their inner worth, they can access their basic motivation to learn.

Principle 7: Human behavior is basically motivated by needs for self-development and self-determination.

Individuals have a natural motivation to learn, grow, and develop in positive, self-determining ways, and to be competent and exercise personal

control in their lives. The biggest challenge is to uncover this natural motivation and intrinsic desire for positive self-development.

Taken together, these principles suggest several key characteristics of motivation and lifelong learning:

1. Learning and motivation to learn are natural human capacities in social contexts and relationships supportive of the learner and in content domains perceived as personally meaningful and relevant.
2. What and how much is learned is a function of each learner's unique views of themselves and the learning process, including their goals, expectations, and interpretations of task requirements.
3. Insecurities and other forms of negative cognitive conditioning interfere with or block the emergence of individuals' natural motivation to continually learn, grow, and develop in positive and self-determining ways.

If learning and motivation to continually learn are basically natural capacities of each human being, why don't we see more evidence of lifelong learning in our schools and in society? Evidence, based on the preceding psychological principles, suggests that several key factors are responsible:

1. Socially accepted learning goals and outcomes have not been personally accepted as meaningful and relevant by a large number of learners.
2. Quality personal relationships and supportive climates for learning are largely absent in a large number of educational and training contexts.
3. Higher level understandings about individuals' personal responsibilities for learning and needs for personal choice and control in learning situations have not formed the basis of educational practice.
4. Efforts to assist individuals to understand their own psychological functioning and the adverse affects of being controlled by negative belief systems—efforts that can uncover natural motivations to continually learn and develop—have not become part of our educational agenda or curriculum.

Based on the foregoing, the following definitions can be advanced: *Motivation to learn* is an internal, naturally occurring capacity of human beings that is enhanced and nurtured by quality supportive relationships, opportunities for personal choice and responsibility for learning, and personally relevant and meaningful learning tasks. *Lifelong learning* is also a natural propensity of human beings to continue to learn, grow, and develop that is facilitated by "uncovering" natural learning tendencies and enjoyment of learning and by reducing or eliminating negative, insecure thoughts and belief systems.

A troublesome issue that arises out of these definitions, however, is social

or perhaps philosophical: How can we help direct individuals' natural motivation for lifelong learning toward goals that benefit both society and the individual? It is in so doing that educational psychologists can play a vital role in preparing lifelong learners that can meet the societal needs of the 21st century.

IMPLICATIONS FOR PROMOTING LIFELONG LEARNING TO MEET THE NEEDS OF THE 21ST CENTURY

Conditions that have led to a general decline in at least the visible signs of lifelong learning by significant numbers of individuals in our society have been cause for alarm, particularly among those in the business and industry community. According to some recent publications from the U.S. Department of Labor (1989) and the U.S. Departments of Labor, Education, and Commerce (1988), the majority of new jobs in the 21st century will require some postsecondary education. Only 27% of all new jobs will fall into lower skill categories, compared to 40% of jobs today. Jobs that are in the middle of the skill distribution today will be the least skilled occupations of the future. This, combined with the fact that life cycles for products and processes have been shortened, means that future jobs may be restructured about every 7 years, necessitating continuous learning and retraining in order to develop qualified people for available jobs. At the same time, statistics showing deficiencies in basic reading, writing, and mathematical skills among a significant and growing segment of our population continue to mitigate against the demands for an increasingly flexible and skilled workforce.

Educators and employers are discovering that the changing demands of today's workplace call for workers who are adaptable to change and know how to enhance their job skills in ways that help them remain current with modern technology. The successful integration of workers into jobs with advanced technologies and processes will, more than ever, be dependent on how quickly workers are able to acquire new skills. In a recent report, "Workplace Basics" by Carnevale (1988), essential workplace skills are linked directly to individuals' positive self-esteem, goal-setting abilities, motivation, learning-to-learn skills, and skills for successful personal management (e.g., communication, career development, teamwork, leadership). Employers value these skills in employees because they usually indicate successful job transitions and effective training experiences. The dilemma, however, is that—according to the Hudson Institute's (1987) "Workforce 2000" report—the 21st century will see an older workforce, with those younger persons entering being increasingly less skilled, and with

more than 80% of new entrants into the workforce being women, minorities, and immigrants.

How can our new understandings of the preceding psychological principles underlying motivation and lifelong help solve this dilemma? Some recent research by Mills (1986, 1990); Mills, Dunham, and Alpert (1988); and Suarez, Mills, and Stewart (1987) offers exciting promise. This research suggests that traditional approaches to intervening with "problem" or "at-risk" populations assume that there is something to be "fixed" or something "missing." Countering this view, Mills et al. (1988) presented a "wellness model" which maintains that there are inherent capabilities and higher levels of functioning (mental health) within all persons that can be accessed by them if they are placed in supportive environments in which the external circumstances that reinforce their conditioned, negative ways of performing and reacting are removed. Higher levels of functioning include developing a more mature and responsible outlook, functioning with common sense, and having a natural interest in learning. Once they are in positive environments and interactions with significant others, individuals who are seemingly unwilling to learn socially desirable knowledges and skills are "freed up" to function at more mentally healthy levels of perception, feeling, and behavior. According to Mills et al.'s research, such positive environments must include adult caring and interest; validation of individuals' worth and significance; and opportunities to build relationships, see models, and experience mentoring relationships in an atmosphere of mutual caring and support.

Harter's (1986, 1989, 1990) research also substantiates the idea that socioeconomic support from significant others is an essential factor in a climate that promotes growth and change and, consequently, for the development of strong perceptions and skills, because it cultivates the positive sense of self-worth required for such growth and change to occur. Individuals exposed to a climate of socioemotional support experience being understood (listened to, not just heard), accepted (taken seriously and having their beliefs, thoughts, and feelings respected), and affirmed (genuinely needed and recognized as having value and worth; Glenn & Nelson, 1988). A socially supportive environment is also important because it leads to a sense of belonging and significance, a fundamental goal of all behavior (Nelson, 1987).

In addition to focusing on a climate of socioemotional support, current research and theory on positive self-development, which my colleagues and I have recently reviewed and extended (McCombs, 1988, 1989; McCombs & Marzano, 1990; McCombs & Whisler, 1989), emphasizes that positive self-development must focus on empowerment through will and skill development. In the will domain, empowerment focuses on the nurturing

and enhancement of personal agency beliefs and commitment to self-development; in the skill domain, it focuses on the development of higher order decision making and personal interaction skills that can facilitate self-development.

My most recent work (McCombs, 1990) extends the notions of empowerment through will, skill, and social support to include the reciprocal empowerment of learners and the adults who work with them. Within this framework, *will* is defined as an innate or self-actualized state of motivation, an internal state of well-being in which individuals are in touch with their natural self-esteem, common sense, and intrinsic motivation to learn. *Skill* is defined as an acquired cognitive or metacognitive competency that develops with training and/or practice. *Social support* is the enabling interpersonal context for the empowerment of will and the development of skill, specifically through quality relationships and interactions with others. Empowerment in this framework is reciprocal in the sense that until adults working with learners are trained to develop positive belief systems in themselves and understand fundamental principles of psychological functioning and learners' inherent motivation to learn, they will not be able to help uncover this potential through enhanced communication and interactions or to create a positive emotional climate that embodies qualities of mutual trust, respect, caring, and concern. This positive emotional climate—in combination with the will and skill components—helps to uncover learners' natural motivation to grow and develop in positive ways, including seeing things from their natural common sense and being motivated to develop specific competencies and skills. As learners display enhanced will and skill, teachers or learning facilitators are empowered by seeing and realizing how they can nurture learners' inner potential to grow and develop in positive ways.

Assuming the validity of this perspective, will it be sufficient to prepare an adaptive, personally and socially responsible, and technologically competent lifelong learner? I believe the answer to this question is "yes" if we are willing to make some fundamental changes in our educational system and in the assumptions that guide redesign efforts. Educational psychologists can play an extremely vital role in the redesign of educational systems for all levels of learners if they generate and use learner-centered psychological principles that integrate both conventional and scientific wisdom. Furthermore, they must be willing to base redesign efforts on the assumption, supported by emerging evidence, that learners will be most motivated to display natural lifelong learning tendencies—and acquire increasing levels of technical competencies needed within their society—in supportive, caring, learning environments that are responsive to individual learning needs and interests.

RECOMMENDATIONS FOR THE ROLES AND PREPARATION OF 21ST CENTURY EDUCATIONAL PSYCHOLOGISTS

As educational psychologists look to make their contribution to an improved educational system, there is a further need not only to consider higher order, learner-centered psychological principles, but also to adopt a systems perspective and systemic processes for incorporating these principles into a new design. The perspective of a living systems model of schooling is particularly appropriate to this task (cf. Hutchins, 1990). From this perspective, significant improvements in educational practice will not occur until the system is redesigned with the learning level and the learner as the primary focus. Starting with what students need from the learning level, educational psychologists, in collaboration with the educational and training communities, can decide how best to apply sound psychological principles to redesign goals from the learning level up through the instructional level, management level, institutional or community level, and the external support level. A new and exciting vision of schooling and the educational psychologist's role in this vision can then emerge.

While attending to the learning level, research from a variety of perspectives also suggests that the optimal conditions for all learning are those that address the needs of the whole individual (cf. McCombs & Marzano, 1990). By this I mean that the experience of schooling or training must attend to the following dimensions of the individual: self, metacognitive, cognitive, affective, behavioral, and social. Research has shown that for students to be optimally motivated to learn, they must:

1. See schooling and education as personally relevant to their interests and goals.
2. Believe that they possess the skills and competencies to successfully accomplish these learning goals.
3. See themselves as responsible agents in the definition and accomplishment of personal goals.
4. Understand the higher level thinking and self-regulation skills that lead to goal attainment.
5. Call into play processes for effectively and efficiently encoding, processing, and recalling information.
6. Control emotions and moods that can facilitate or interfere with learning and motivation.
7. Produce the performance outcomes that signal successful goal attainment.

Each of the preceding areas is clearly amenable to the expertise of educational psychologists. Equally clear is that we have at our disposal rich

bodies of knowledge and experience—storehouses of hard and soft technology—that can be brought to bear in the design of education and training systems that meet the needs of the 21st century. A further prerequisite to assuming our larger roles as change agents and advisors to the redesign of schooling or educational and training systems, however, is that we become more actively involved in the daily life of teachers and students in a variety of settings from early childhood education through postsecondary and adult-training contexts. By working together with the teachers and educators in these settings, we can use the best of what we know about principles of learning and reciprocal empowerment, combined with our knowledge and technology base, to help develop learner-centered designs that promote motivation and lifelong learning. At the same time, we will encourage teachers and educators to take on more of a leadership role in the design and implementation of psychologically sound learning and training systems.

An additional recommendation for the future roles of educational psychologists derives from current increased efforts to promote partnerships between community-based organizations—including medical and social service providers, schools, businesses, law enforcement agencies, and private and public funding sources—in both the redesign and implementation of new learning, training, and educational systems. The notion of community-based learning centers for all age groups is gaining popularity and represents an exciting vehicle for supporting a continuum of learning from infancy through adulthood. It also embodies an important new concept of shared responsibility among all groups for accomplishing the educational and performance goals of our society.

If the new roles of educational psychologists in the 21st century include change agent, living-systems expert, learner-centered and whole-person expert, consultant to real-world education and training organizations, collaborative partner in school redesign and reform, and hard and soft technology expert, then programs for preparing educational psychologists need to change to reflect these roles. Some general suggestions of what needs to be included in preparation programs are:

1. Provide a depth and breadth of psychological knowledge, from the full range of psychological disciplines relevant to education, and include emerging holistic theories of psychological functioning, motivation, and learning in context.
2. Include content courses in effective strategies for diagnosing learning and motivational needs and facilitating learning through both strategies instruction and personal interaction skills that can create quality relationships and positive learning climates.
3. Include courses in organizational change, living-systems models, and

alternative learning and training systems appropriate to different learners and learning contexts.

4. Provide opportunities for practical problem solving in a variety of settings that allow students to integrate their knowledge and develop skills in those areas where they see they can be effective change agents.

Furthermore, training in these areas needs to be adaptive and flexible to the range of unique settings and contexts in which educational psychologists are likely to find themselves, ranging from universities to schools, from business and industry to military organizations, as well as from hospitals to other service agencies in need of training and continuous learning systems. There will also be a need to prepare future educational psychologists to be concerned with the motivation and lifelong learning of increasingly diverse cultural groups in schools and in the workforce, as well as with helping to promote the productivity and meaningfulness of life for our increasing number of elderly people.

This is quite a challenge and responsibility, to say the least. At the same time, however, we have an exciting opportunity to truly prepare those future experts of educational psychology to be generalists, integrators of our vast knowledge base, problem solvers, collaborators and communicators, and gatekeepers of the mental health and functioning of our nation's children, their teachers, and the organizational systems that serve them. In so doing, we will be instrumental in preparing motivated lifelong learners who can become the productive and competent citizens that are part of the increasingly flexible and skilled workforce needed for the 21st century.

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