

Appendix: How Do Different Experts View the Dimensions of Student Motivation?

Researchers	Major theories of researcher	Dimensions of motivation			
		Competence <i>The students believes he or she has the ability to complete the task</i>	Control/autonomy <i>The student feels in control by seeing a direct link between his or her actions and an outcome, and retains autonomy having some choice about whether or how to undertake the task</i>	Interest/value <i>The students has some interest in the task or sees the value of completing it</i>	Relatedness <i>Completing the task brings the student social rewards, such as a sense of belonging to a classroom or other desired social group, or approval from a person of social importance to the student</i>
Ryan & Deci ¹	<i>Self-determination theory</i> suggests a framework of three factors that must be met for a task to hold interest	Competence is one of three core tenets of self-determination theory People have a need to feel effective	Autonomy is one of three core tenets of self-determination theory People have a need to feel in control over their own choices and decide their own direction	People need either an intrinsic or extrinsic interest in the task for it to be of importance	<i>Relatedness</i> is one of three core tenets of self-determination theory People desire to interact with and be connected to others
Pintrich ²	<i>Motivational science perspective</i> identifies five “social-cognitive constructs” that interact to lead to higher motivation	Higher confidence in one’s abilities leads to higher motivation	Personal goals are essential to motivation “Mastery” goals are more desirable than “performance” goals	Higher levels of interest lead to higher motivation Stronger perceptions of value lead to higher motivation	Social goals are as influential as academic or professional goals Supportive, caring relationships are important for high motivation
Seifert ³	<i>Reconstructing motivation theory</i> surveys several other theories to compile five “behavior patterns” that distinguish different causes of motivation	Those with a <i>mastery</i> pattern of behavior believe they have a high degree of competence Those with a <i>learned helplessness</i> pattern believe they have low competence Those with a <i>work avoidant</i> pattern believe they have high competence	Those with a <i>mastery</i> pattern feel they are in control of outcomes The <i>failure avoidant</i> think they have no control over their success or failure The <i>work avoidant</i> choose not to engage in work Those with <i>learned helplessness</i> believe their efforts are futile	Those with a <i>mastery</i> pattern see worth in tasks that can improve skills/understanding The <i>work avoidant</i> think their work has no worth The <i>failure avoidant</i> see no value in a task they might fail Those with <i>learned helplessness</i> see no worth in attempting any task	The <i>failure avoidant</i> fear others’ judgment Those with <i>learned helplessness</i> attribute all success to others Those who are <i>passive-aggressive</i> withhold effort out of wrath towards others

Researchers	Major theories of researcher	Dimensions of motivation			
		Competence <i>The students believes he or she has the ability to complete the task</i>	Control/autonomy <i>The student feels in control by seeing a direct link between his or her actions and an outcome, and retains autonomy having some choice about whether or how to undertake the task</i>	Interest/value <i>The students has some interest in the task or sees the value of completing it</i>	Relatedness <i>Completing the task brings the student social rewards, such as a sense of belonging to a classroom or other desired social group, or approval from a person of social importance to the student</i>
Dweck ⁴	<i>Mindset framework</i> attributes students' motivation to their understanding of intelligence	How one conceptualizes one's own ability is a factor of mindset In a "fixed intelligence" mindset, success is based on innate ability In a "growth" mindset, success is based on effort and learning	Those with a fixed intelligence" mindset see a direct link between intelligence and outcome Those with a growth" mindset see a direct link between effort and outcome	Those with a "fixed intelligence" mindset think engaging in a task is not worth it if it means risking failure Those with a "growth" mindset see value in tasks that allow them to improve their skills or understanding	Those with a fixed intelligence" mindset see failure as an indication to others that they have low ability or intelligence Those with a "growth" mindset see failure as an opportunity to improve, no direct link to others judgment of their intelligence
Bandura ³	<i>Self-efficacy theory</i> says that motivation is based solely on feeling of effectiveness	Motivation is based solely on whether or not one feels capable of performing the task	N/A	N/A	N/A
Weiner ³	<i>Attribution theory</i> holds that emotional reactions to an outcome lead students to determine a perceived cause (attribution) of that outcome, which then affects future behavior and motivation	Locus of control is one of three characteristics that define attributions of outcomes; the extent to which a student perceives this locus as internal can determine competence	The extent to which a student perceives an outcome as controllable is one of three characteristics that define attributions of outcomes	The characteristics a student uses to define a certain outcome can determine whether a student will display interest in a task in the future	Comparison to others is one factor that may influence how a student forms attributions
Covington ³	<i>Self-worth theory</i> holds that students are encouraged to base self-worth on performance outcomes and alter behavior to avoid failure	Students will not engage in a task unless they feel competent	Students will engage in behavior like procrastination or withdrawal if it means being able to control their perception of failure	Students base their self-worth on performance outcomes and will find value only in tasks that are certain to be successful	Above all, behavior is designed to avoid any appearance of failure

Researchers	Major theories of researcher	Dimensions of motivation			
		Competence <i>The students believes he or she has the ability to complete the task</i>	Control/autonomy <i>The student feels in control by seeing a direct link between his or her actions and an outcome, and retains autonomy having some choice about whether or how to undertake the task</i>	Interest/value <i>The students has some interest in the task or sees the value of completing it</i>	Relatedness <i>Completing the task brings the student social rewards, such as a sense of belonging to a classroom or other desired social group, or approval from a person of social importance to the student</i>
Dweck, Leggett, Nicholls, Pintrich, Garcia ³	<i>Achievement goal theory</i> says that students are motivated by either mastery-based or performance-based goals	Students with mastery goals are concerned with <i>developing</i> competence Students with performance goals concerned with <i>proving</i> competence	Students with mastery goals see a positive link between effort and outcome Students with performance goals believe outcomes are based on innate ability and uncontrollable factors	Students with mastery goals find value in tasks that further skills or knowledge Students with performance goals find value in tasks that prove ability	Students with mastery goals think others judge them based on effort, strategy Students with performance goals think others judge them based on ability

Source: Center on Education Policy, based on the footnoted sources below and adapted from figure 1 in Murray, A. (2011). Montessori elementary philosophy reflects current motivation theories. *Montessori Life*, 23(1), 22-33.

¹Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American*, 55(1), 68-78.

²Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, 95(4), 667-686.

³Seifert, T. L. (2004). Understanding student motivation. *Educational Research* (46)2, 137-149.

⁴Dweck, C. S. (2010). Mindsets and equitable education. *Principal Leadership*, 10(5), 26-29.