

Beliefs about Intelligence & Knowledge

Attribution Theory

- **The study of the causal explanations for success and failure**
- **Efficacy focuses on confidence for future performance whereas attributional judgments relate to past events**
- **3 primary dimensions of attributional responses: Locus of Control, Stability, and Controllability**
- **Student attributions are derived not only from themselves but also are influenced through interactions with teachers, parents, and peers**

Attribution	Locus	Stability	Controllability	Examples
Inherited ability or aptitude	Internal	Stable	Uncontrollable	“I have talent.” “I wasn’t cut out for this.”
Personality	Internal	Stable	Uncontrollable	“I’m naturally outgoing.” “I’m a very anxious person.”
Effort	Internal	Unstable	Controllable	“I worked really hard to improve my skill.” “I didn’t study long enough.”
Study strategy	Internal	Unstable	Controllable	“The mnemonics I used really helped.”

Attribution	Locus	Stability	Controllability	Examples
Health/Energy Level	Internal	Unstable	Uncontrollable	“I was feeling really good that day.” “I had the flu when I tried out.”
Task Difficulty	External	Stable	Uncontrollable	“Math is easy.” “The test was too hard.”
Teacher’s Attitudes	External	Stable	Uncontrollable	“My teacher helps me when I have trouble.” “My teacher doesn’t like me.”
Luck/Chance	External	Unstable	Uncontrollable	“This is my lucky day.” “You never know when something bad will happen to you.”

A teacher is circulating around the class while the students are involved in a homework activity. The teacher stops near Jerome, who appears to be having a bit of difficulty with a problem, but she says nothing. She stops near Leroy and comments, “Let me give you a hint,” and makes a suggestion, even though Leroy had not asked for help and seems to be making progress, although the progress is somewhat slow.

The teacher stops near Anthony, who has made a mistake, and smiles, “Now, that’s a very good try. Here, let me show you how to solve the problem.”

What message is the teacher sending each student about their ability? What attributions is she subtly and unconsciously encouraging?

Graham (1991) suggests that when teachers praise students for a “good try,” express pity, or offer unsolicited help, they *subtly communicate that the students have low ability*, and it increases the likelihood that the students will attribute failure to lack of ability. Even young students perceive students who are offered unsolicited help as being lower in ability than those not offered help (Graham & Barker, 1990)

Thinking about Attributions in the Classroom

- Above all, emphasize **EFFORT & STRATEGIES** for achieving goals
- Student attributions are affected by explicit feedback from the teacher (e.g. “maybe you just don’t have talent in math”) and through more subtle feedback (offering unsolicited help)
- More successful students tend to attribute their success and failure to internal and controllable factors such as effort and strategy use
- Assist students by explicitly discussing different types of attributions
- Consider alternative attributions such as prior knowledge, monitoring skills, & automaticity

Success in the Early Grades for Finns Linked to Ability Attributions

Rytönen et al. (2005; 2009) have found in a longitudinal project that parents increasingly attributed their children’s success to ability as they began primary school. In addition, there was a reciprocal effect in that the higher the achievement of the children during the school year the more the parents attributed success to ability which then led to increased achievement gains by the children. The more parents attributed success to effort the lower the performance the children exhibited. Thus, at the early grades ability attributions appear to facilitate higher achievement.

Safe Sally

Sally is a “straight A” student. In fact, she made that clear on your course student information page the first day of class. In many respects, Sally is a perfect student – dependable, and highly motivated. A superficial look at her would reveal no motivation problems.

But despite Sally’s high academic performance, she is an underachiever. She is motivated, but only to achieve high grades and the accompanying respect of her teachers. She perceives a “B+” as a disastrous blemish on her record. Working methodically within the guidelines and structure given to her, she makes no effort to be creative.

A careful look at Sally’s perfect record reveals a series of courses that offered little challenge. She took only the required science courses, and she enrolled in the calculus course but dropped it after getting a “C+” on the first weekly quiz. Learning has no intrinsic value to her and she always chooses the easiest assignment in class. She lacks self-confidence in her academic skills and prefers not to risk failure.

Implicit Beliefs & Education

Implicit Beliefs & Education

- 🌐 **Implicit beliefs are unconscious, personal beliefs about the world**
- 🌐 **Implicit theories are tacit assumptions about how some phenomenon works**
- 🌐 **Everyone has implicit belief systems**
- 🌐 **Implicit beliefs about such topics as intelligence, knowledge, hope, and reading play a profound role in academic settings**
- 🌐 **These theories are many times difficult to state explicitly**

Types of Implicit Beliefs

- 🌐 **Intelligence**
- 🌐 **Moral Judgment**
- 🌐 **Knowledge**
- 🌐 **Hope**
- 🌐 **Reading**

GOALS INVENTORY

In this part, we would like you to respond to the questions below by indicating how true or false each statement is about you. If a statement is always true, for example, write the number 5 in the blank provided to the right of each statement. Your responses are scored anonymously, so please answer as truthfully as you can.

ALWAYS FALSE	USUALLY FALSE	SOMETIMES TRUE	USUALLY TRUE	ALWAYS TRUE
1	2	3	4	5

- ___ 1. I enjoy challenging school assignments.
- ___ 2. It is important for me to get better grades than my classmates.
- ___ 3. I persevere even when I am frustrated by a task.
- ___ 4. Academic success is largely due to effort.
- ___ 5. Sticking with a challenging task is rewarding.
- ___ 6. I try even harder after I fail at something.
- ___ 7. I adapt well to challenging circumstances.
- ___ 8. I am willing to cheat to get a good grade.

Carol Dweck

**Implicit Beliefs
about Intelligence,
Goal Orientation,
& Growth Mindset**



	Strongly disagree					Strongly agree	
	1	2	3	4	5	6	
1. You have a certain amount of intelligence, and you can't really do much to change it.....	<input type="checkbox"/>						
2. Your intelligence is something about you that you can't change very much.....	<input type="checkbox"/>						
3. No matter who you are, you can significantly change your intelligence level.....	<input type="checkbox"/>						
4. To be honest, you can't really change how intelligent you are.....	<input type="checkbox"/>						
5. You can always substantially change how intelligent you are.....	<input type="checkbox"/>						
6. You can learn new things, but you can't really change your basic intelligence.....	<input type="checkbox"/>						
7. No matter how much intelligence you have, you can always change it quite a bit.....	<input type="checkbox"/>						
8. You can change even your basic intelligence level substantially.....	<input type="checkbox"/>						



Goal Orientations

Incremental Theorists → **Learning or Mastery Goals**

Knowledge acquisition

Progress

Competency

Self-improvement

Growth Mindset

Implicit Beliefs about Intelligence

- 🌐 Learning goals lead to greater persistence, more varied strategy use, appropriate help-seeking and are more likely to have high self-efficacy and attribute success to controllable factors such as effort and strategy use
- 🌐 Performance goals lead to attempting easy rather than challenging problems, a defensive attitude regarding ability, and a greater frequency of developing learned helplessness because of fear of failure

Fostering Adaptive Goals

- 🌐 **Promote the view that intellectual development is controllable**
- 🌐 **Reward effort and improvement while de-emphasizing innate ability**
- 🌐 **Emphasize the process, rather than the products, of learning**
- 🌐 **Stress that mistakes are a normal (and healthy) part of learning**
- 🌐 **Encourage individual, rather than group, evaluative standards**

Implicit Beliefs about Intelligence

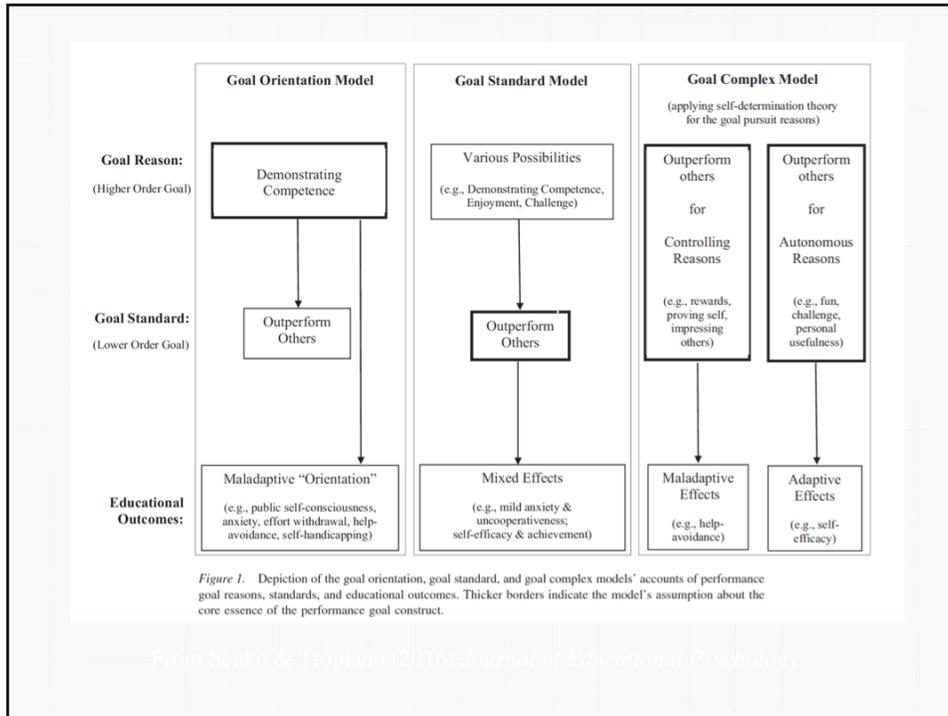
- 🌐 **Is intelligence changeable? What mindset should educators have regarding this issue?**
- 🌐 **Should a student focus entirely on learning goals?**
- 🌐 **This issue is important to consider not only from the student's perspective but also the teacher's beliefs about intelligence**

“Perhaps the most appropriate view represents an integration of both entity and incremental theories, that is, a recognition of present differences in relative ability but an emphasis on individual growth in ability.”

Dweck & Leggett, 1988

More Recent Conceptions . . .

-  **Mastery Approach** - for attaining task-based or intrapersonal competence
-  **Mastery Avoid** - for avoiding task-based or intrapersonal incompetence
-  **Performance Approach** - for attaining normative competence
-  **Performance Avoid** - for avoiding normative incompetence



Achievement Goals Questionnaire

- ___ 1. It is important for me to do better than other students.
- ___ 2. It is important for me to do well compared to others in my courses.
- ___ 3. My goal in class is to get a better grade than most of the other students.
- ___ 4. I worry that I may not learn all that I possibly could in class.
- ___ 5. Sometimes I'm afraid that I may not understand the content of class as thoroughly as I'd like.
- ___ 6. I am often concerned that I may not learn all that there is to learn in class.
- ___ 7. I want to learn as much as possible from class.
- ___ 8. It is important for me to understand the content of my courses as thoroughly as possible.
- ___ 9. I desire to completely master the material presented in my courses.
- ___ 10. I just want to avoid doing poorly in class.
- ___ 11. My goal in class is to avoid performing poorly.
- ___ 12. My fear of performing poorly in class is often what motivates me.

Stability and change in achievement goal orientations: A person-centered approach

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ABSTRACT

Two longitudinal studies used a person-centered approach to examine the stability and change in students' achievement goal orientations within a school year (i.e., during 9th grade; measurement period 4 months, $N = 530$) and between school years (i.e., across 11th and 12th grade; measurement period 12 months, $N = 519$). Distinct groups of students with different motivational profiles were extracted in both studies with considerable consistency in profiles across the two academic contexts (i.e., lower and upper secondary school). Four groups of students were identified in both studies: indifferent, success-oriented, mastery-oriented, and avoidance-oriented. Students' motivational profiles were substantially stable; about 60% of all students displayed a stable motivational profile over time. Furthermore, most changes in the group memberships were directed towards similar groups. Findings support the conception of achievement goal orientation as an enduring disposition that reflects students' generalized beliefs and tendencies to select certain goals and to favor certain outcomes.

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Examining the Effects of Task Instructions to Induce Implicit Theories of Intelligence on a Rational Thinking Task

A Cross-Cultural Study

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	Strongly disagree					Strongly agree	
	1	2	3	4	5	6	
1. You have a certain amount of intelligence, and you can't really do much to change it.....	<input type="checkbox"/>						
2. Your intelligence is something about you that you can't change very much.....	<input type="checkbox"/>						
3. No matter who you are, you can significantly change your intelligence level.....	<input type="checkbox"/>						
4. To be honest, you can't really change how intelligent you are.....	<input type="checkbox"/>						
5. You can always substantially change how intelligent you are.....	<input type="checkbox"/>						
6. You can learn new things, but you can't really change your basic intelligence.....	<input type="checkbox"/>						
7. No matter how much intelligence you have, you can always change it quite a bit.....	<input type="checkbox"/>						
8. You can change even your basic intelligence level substantially.....	<input type="checkbox"/>						

1. A bat and a ball cost \$ 1.10 in total. The bat costs \$ 1.00 more than the ball. How much does the ball cost? ____ cents

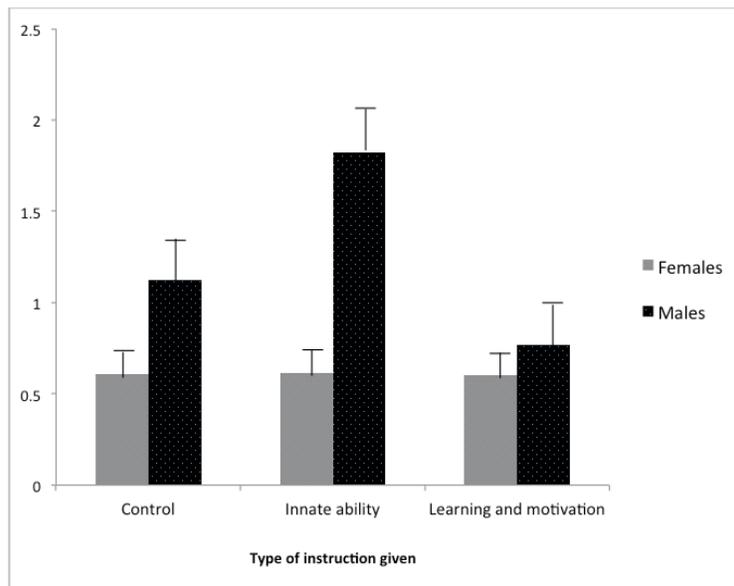
2. If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? ____ minutes

3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? ____ days

(1) 5 cents (not 10)
(2) 5 minutes (not 100)
(3) 47 days (not 24)

On the next page you'll find three problems that you're going to complete. These problems are often used within psychology to assess students' abilities. Performance on these three problems has been found to depend on innate abilities that change little throughout life.

On the next page you'll find three problems that you're going to complete. These problems are often used within psychology to assess students' learning. Performance on these three problems has been found to depend on practice and a wish to further develop one's competence and learn new things.



Should Schools Enforce Dress Codes?

YES

63%
of users

Yes  Anonymous

Rules are set for a reason. If they are not enforced, what is their purpose? Not enforcing one set of rules also leads to problems when the school attempts to enforce another set. Children aren't idiots – they know a pushover system when they see one.

Yes  Anonymous

Namby Pamblers Rules are set to be followed and are set for a reason. If rules aren't enforced, people don't follow other rules, which lead to many problems. I don't care about "freedom of expression."

Yes  Anonymous

Dress codes can solve many problems. Imagine the distractions that would occur if girls walked around in midriff-baring shirts and boys let their boxers hang out in the hallways. Maybe dress codes shouldn't be so strict, but it should at least ban students from distracting clothing. If you want to express yourself, do it outside of school. If you really want an education, you'll probably deal with a few years of having your clothing regulated.

Yes  Anonymous

Think of all the problems... So many problems would be solved if schools enforced dress codes. Kids should learn early on to dress appropriately and professionally. This will help a lot not only when they are older, but will also make them feel more in control about themselves. Expression is just a lame excuse – if every teen that says they need to express themselves can write at least a paragraph explaining what exactly they are expressing, than go ahead.

NO

38%
of users

No  Anonymous

Definitely Not I go to an incredibly strict school that prides itself on the uniform. However, because the rules are so strict, everyone is rebelling. All of the girls are dying their hair, and bearing the consequences. In high school, the students are at the age where they are trying to find who they are and what they want to look like. This means experimenting with different styles, colours and clothing. The school claims the uniform's purpose to be for equality among the students but that does not stop bullying from happening within the grades. Strict uniform policies should be gotten rid of.

No  MycaMy

A dress code does not serve any purpose in a school setting. People are individuals, and they need to be able to express themselves as individuals. Dress codes do not need to be strictly enforced. There should be common sense and safety rules, but not rules that infringe on a person's right to express himself. Parents should make sure their children are properly dressed for school.

No  LivingRoosevelt78

No, because dress codes inhibit and discourage freedom of expression. Strictly enforcing a dress code in high school negates a fundamental principle being taught at that time: self-exploration and self-expression. While I will concede that these students ought to be clad in some measure of clothing, bogus attempts to force covering up (such as not exposing the shoulders) goes beyond the bounds of reasonable prudence, and really just serves to inhibit personal development.

Beliefs about Learning

Please indicate your level of agreement or disagreement to the following statements. If you strongly agree, for example, write the number 6 in the blank provided to the left.

<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Slightly Disagree</i>	<i>Slightly Agree</i>	<i>Agree</i>	<i>Strongly Agree</i>
1	2	3	4	5	6

- ___ 1. Most things worth knowing are not very complicated.
- ___ 2. People should respect the opinions of authorities.
- ___ 3. Really smart students learn things with less effort.
- ___ 4. There are certain truths in life that won't ever change.
- ___ 5. Working on a problem with no quick solution is a waste of time.
- ___ 6. What is true today will be true tomorrow.
- ___ 7. Society needs strong laws to work well.
- ___ 8. When someone in authority tells me what to do, I usually do it.
- ___ 9. Really smart students don't have to work as hard to do well.
- ___ 10. Solutions to problems usually come quickly or not at all.

Epistemological Beliefs and Thinking About Everyday Controversial Issues

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ABSTRACT. The authors investigated the relationship between individuals' beliefs about the nature of knowledge and the nature of learning (epistemological beliefs) and their thinking about everyday controversial issues. Adults ($N = 174$) ranging in age from 17 to 71 years old with a mean age of 38 completed the Schommer Epistemological Questionnaire (M. Schommer, 1990), which assessed their beliefs in the certainty and organization of knowledge and the speed and control of learning. After they had completed the questionnaire, they responded to a series of questions about two controversial issues that had been discussed in the local newspaper. Regression analyses indicated that the more the participants believed in complex and tentative knowledge, the more likely they were to take on multiple perspectives, be willing to modify their thinking, withhold ultimate decisions until all information was available, and acknowledge the complex, tentative nature of everyday issues. Epistemological beliefs that are heavily influenced by a higher level of education appear to relate to thinking beyond the classroom, and introducing controversial issues into the curriculum may reciprocally foster the development of epistemological beliefs.

Key words: controversial issues, critical thinking, epistemological beliefs

Implicit Beliefs about Knowledge

- **Epistemological beliefs refer to beliefs about the nature of knowledge**
- **Schommer argues that epistemological beliefs have four dimensions**
 - Simple knowledge
 - Certain knowledge
 - Fixed ability
 - Quick learning
- **A major overall finding is that beliefs about knowledge are significantly related to level of education**

Beliefs About Knowledge

1. **Certain knowledge** – absolute knowledge exists and will eventually be known
2. **Simple knowledge** – knowledge consists of discrete facts
3. **Quick learning** – learning occurs in a quick or not-at-all fashion
4. **Fixed ability** – the ability to acquire knowledge is static

Questions regarding implicit beliefs about knowledge

-  **Why might you imagine that Schommer found that education majors more readily ascribe to certain knowledge than science majors?**
-  **Studies have found that pre-service teachers leave their teacher-training programs with many of the same beliefs that they entered with. What implications does this have for teacher education programs and beliefs in general?**

Stages of Reflective Judgment

- 🌐 Stage 1: Knowledge is unchanging, absolute, & accessible
- 🌐 Stage 2: Knowledge is certain but may not be accessible to everyone
- 🌐 Stage 3: Knowledge is certain, though it may be accessible to anyone
- 🌐 Stage 4: Knowledge is uncertain and idiosyncratic
- 🌐 Stage 5: Knowledge is uncertain, though contextually interpretable
- 🌐 Stage 6: Knowledge is relative yet justifiable on the basis of rational arguments
- 🌐 Stage 7: Knowledge is relative, though some interpretations have greater truth

Kitchener & King, 1981

Reflective Judgment

- 🌐 Reflective judgment is concerned with the way people resolve dilemmas
- 🌐 Reflective judgment develops gradually in a sequential manner and is related to critical thinking. Two primary mechanisms for change are experience and belief systems

Recommendations

- 🌐 **Make beliefs explicit**
- 🌐 **Confront inconsistencies**
- 🌐 **Provide opportunity to weigh conflicting evidence**

THE HOPE SCALE

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and write that number in the blank next to the item.

1	2	3	4
Definitely False	Mostly False	Mostly True	Definitely True

- _____ 1. I can think of many ways to get out of a jam.
- _____ 2. I energetically pursue my goals.
- _____ 3. I feel tired most of the time.
- _____ 4. There are lots of ways around any problem.
- _____ 5. I am easily downed in an argument.
- _____ 6. I can think of many ways to get the things in life that are most important to me.
- _____ 7. I worry about my health.
- _____ 8. Even when others get discouraged, I know I can find a way to solve the problem.
- _____ 9. My past experiences have prepared me well for my future.
- _____ 10. I've been pretty successful in life.
- _____ 11. I usually find myself worrying about something.
- _____ 12. I meet the goals that I set for myself.

Hope

- 🌐 Hope as defined as agency and pathways-- the "will" and the "ways." The former refers to self-determination and perseverance when faced with challenges. The latter refers to how well an individual can generate workable solutions to those challenges
- 🌐 High hope leads to persistence, a preference for difficult tasks not explained by general ability, and appears to be rather stable over time

ATTITUDES ABOUT READING

This questionnaire is about your attitudes toward reading. We would like you to respond to the statements below by indicating how strongly you agree or disagree with each one. Please indicate your response by writing the appropriate number in the space provided.

STRONGLY → → → → → → → → → STRONGLY
DISAGREE → → DISAGREE → → NEUTRAL → → AGREE → → AGREE
.....1 → → →2 → → →3 → → →4 → → →5

-1 Good readers remember exactly what the book says
-2 I often get totally absorbed in what I'm reading
-3 The main purpose of reading is to learn new information
-4 I like to form my own interpretations of what I read, even if the book is technical
-5 When I read, I try to carry away exactly what the author meant
-6 I often have strong emotional responses to what I read
-7 When I read, I focus on what the book really means rather than what the book actually says
-8 People should agree on what a book means
-9 When I read, I like to imagine I am living through the experience myself
-10 I try to be as objective as possible when I read
-11 Reading for pleasure is the best kind of reading
-12 I like books where the author's message is strong and clear

Transactional Reading is ...

- 🌐 **construction of meaning from text. It is an active, cognitive, and affective process.**
- 🌐 **Readers actively interact with text**
- 🌐 **Readers view text experiences as being 2-way**
- 🌐 **A transmission approach emphasizes reading to gain information**

Implicit Beliefs about Reading

- 🌐 **Transmissional beliefs are based on the assumption that meaning is transmitted directly from the author to the reader. This model views the reader as a passive receiver whose primary objective is to extract the author's intended meaning, rather than an active maker of meaning**
- 🌐 **Transactional beliefs are based on the assumption a text means different things to different readers regardless of what the author intended or what the text contains (Carey & Harste, 1987; Farrell & Squire, 1990)**

Self-Regulated Learning

The ability to control all aspects of one's learning, from advance planning to how one evaluates performance afterward

3 Core Components

Metacognitive awareness

- 🌐 Knowledge about cognition/Regulation of cognition

Strategy use

- 🌐 Selectively choosing then evaluating strategies

Motivational control

- 🌐 Goals, self-efficacy, effort

Self-Regulated Sarah



Teachers who know Sarah realize that things don't always come easy for her when it comes to learning but every teacher who has ever taught her begins to smile when they think of her. This is because of the qualities that Sarah displays in her learning. For one, she is very inquisitive and engaged in classroom activities. When a new project is introduced it is not uncommon for her to exclaim, "Hey, this reminds me of when we did" before she jumps right in. Never to be one to get too wrapped up in her grade Sarah instead enjoys challenging herself by choosing some of the most difficult books for class assignments or working on projects where she has to take some risks. Teachers know that she is genuinely interested in what she is learning because they report that Sarah often comes to school and makes a point to describe how she polled her family about their recycling habits, or how she compared recipes on-line for their nutritional value, or some other self-generated activity related to that week's class activities. Watching Sarah attempt to solve a complex logic problem in class gives a glimpse into her demeanor. She continues to be focused on the problem after many of her peers have gone on to other activities. "I know I can get this," she says, "only I need to try a different way." She monitors every step of the process. Eventually she has a breakthrough after she realizes where to find a pertinent piece of information and she solves the problem. This is not surprising because Sarah is very strategic about finding information and also in seeking out help—be without being overly reliant on those who help her. Sarah's goal setting, strategic behavior, thoughtfulness, and persistence lead one to believe that she has a bright academic future ahead.

What is this measuring?

Consistency of Interest

1. *I often set a goal but later choose to pursue a different one.*
5. *I have been obsessed with a certain idea or project for a short time but later lost interest.*
6. *I have difficulty maintaining my focus on projects that take more than a few months to complete.*
2. *New ideas and projects sometimes distract me from previous ones.*

Perseverance of Effort

9. *I finish whatever I begin.*
10. *Setbacks don't discourage me.*
12. *I am diligent.*
11. *I am a hard worker.*

Grit

What *No Child Left Behind* Leaves Behind: The Roles of IQ and Self-Control in Predicting Standardized Achievement Test Scores and Report Card Grades

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The increasing prominence of standardized testing to assess student learning motivated the current investigation. We propose that standardized achievement test scores assess competencies determined more by intelligence than by self-control, whereas report card grades assess competencies determined more by self-control than by intelligence. In particular, we suggest that intelligence helps students learn and solve problems independent of formal instruction, whereas self-control helps students study, complete homework, and behave positively in the classroom. Two longitudinal, prospective studies of middle school students support predictions from this model. In both samples, IQ predicted changes in standardized achievement test scores over time better than did self-control, whereas self-control predicted changes in report card grades over time better than did IQ. As expected, the effect of self-control on changes in report card grades was mediated in Study 2 by teacher ratings of homework completion and classroom conduct. In a third study, ratings of middle school teachers about the content and purpose of standardized achievement tests and report card grades were consistent with the proposed model. Implications for pedagogy and public policy are discussed.

Keywords: impulsivity, self-control, achievement, success, personality

Much Ado About Grit: A Meta-Analytic Synthesis of the Grit Literature

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Grit has been presented as a higher order personality trait that is highly predictive of both success and performance and distinct from other traits such as conscientiousness. This paper provides a meta-analytic review of the grit literature with a particular focus on the structure of grit and the relation between grit and performance, retention, conscientiousness, cognitive ability, and demographic variables. Our results based on 584 effect sizes from 88 independent samples representing 66,807 individuals indicate that the higher order structure of grit is not confirmed, that grit is only moderately correlated with performance and retention, and that grit is very strongly correlated with conscientiousness. We also find that the perseverance of effort facet has significantly stronger criterion validities than the consistency of interest facet and that perseverance of effort explains variance in academic performance even after controlling for conscientiousness. In aggregate our results suggest that interventions designed to enhance grit may only have weak effects on performance and success, that the construct validity of grit is in question, and that the primary utility of the grit construct may lie in the perseverance facet.

Keywords: grit, performance, meta-analysis, perseverance of effort, consistency of interest