The underachievement of able students

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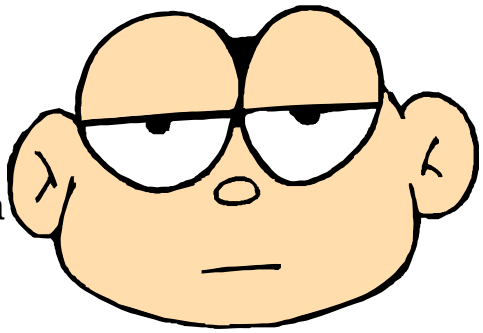
What is underachievement?

- DISCREPANCY between potential and performance; ability and achievement
- Rimm says, "when students aren't working up to their potential, they are underachieving."
- But how do we know what a student's potential is and how he/she should use it?

"Underachievers are students who exhibit a severe discrepancy between *expected achievement* (as measured by standardized achievement test scores or cognitive or intellectual ability assessments) and *actual achievement* (as measured class grades and teacher evaluations). To be classified as an underachiever, the discrepancy between expected and actual achievement must not be the direct result of a diagnosed learning disability…" (Reis & McCoach, 2000, p. 157).

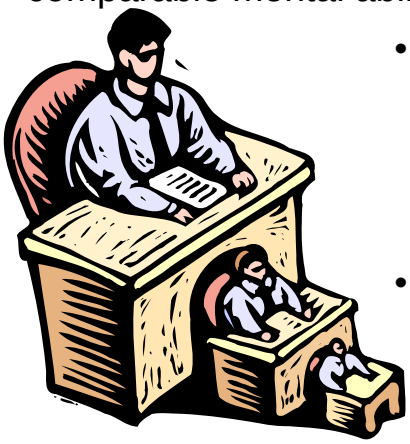


What happens to underachievers?

In the largest longitudinal study of underachievers conducted to date, McCall, Evahn, and Kratzer (1992) found that 13 years after high school, the educational and occupational status of high school underachievers paralleled their grades in high school, rather than their abilities.

What are the long- term consequences of underachievement? (McCall, Evahn, & Kratzer, 1992)

•Less likely to attend college and more likely to drop out of postsecondary education than students of comparable mental ability.



- Same adult educational and occupational status as non-underachieving youths with the same grades, but lower mental ability
- Many serious underachievers never recover.

What happens to underachievers?

A study of 153 academically gifted underachievers and achievers examined their achievement throughout their secondary school careers (Peterson & Colangelo, 1996).

45% of the students who were underachieving in grade 7 continued to underachieve throughout junior high and high school.

What happens to underachievers?

Peterson (2000) conducted a 4 years follow-up after high school graduation.

Four years after high school graduation, high school and college achievement were strongly related (r= .64.)

Of the high school underachievers who attended college, 41% improved, 44% remained the same, 15% experienced a decline in their academic performance.

What happens to underachievers?

All achievers attended college; 83% of the achievers finished 4 years of college.

87% of underachievers attended college; only 52% finished 4 years.

The most extreme high school underachievers completed the fewest years of college (mean=1.33 years).

(Peterson & Colangelo, 1996; Peterson, 2000)

Characteristics of Gifted Underachievers	Citation
Personality characteristics	
1. Low self-esteem, low self-concept, low self-efficacy.	(Belcastro, 1985; Bricklin & Bricklin, 1967; Bruns, 1992; Clark, 1988; Diaz, 1998; Dowdall & Colangelo, 1982; Fine & Pitts, 1980; Fink, 1965; Ford, 1996; Kanoy, Johnson, & Kanoy, 1980; Rimm, 1997b; Schunk, 1998; Supplee, 1990; Van Boxtel & Monks, 1992; Whitmore, 1980.)
2. Alienated or withdrawn; distrustful, or pessimistic.	(Delisle, 1982; Fink, 1965; Ford, 1996; Mandel & Marcus, 1988,1995; Van Boxtel & Monks,1992; Whitmore, 1980)
3. Anxious, impulsive, inattentive, hyperactive, or distractible, may exhibit ADHD.	(Bruns, 1992; Clark, 1988; Diaz; Frick, 1991; Mandel & Marcus, 1988; Redding, 1990; Rimm, 1995; Whitmore,1980)
4. Aggressive, hostile, resentful, or touchy.	(Butler-Por, 1987; Diaz, 1998; Mandel & Marcus, 1988; Whitmore, 1980)
5. Depressed.	(Mandel & Marcus, 1988; Rimm, 1995)
6. Passive aggressive trait disturbance.	(Bricklin & Bricklin, 1967; Bruns, 1992; Dowdall and Colangelo, 1982; Fine & Pitts, 1980; Khatena, 1982; Pendarvis, Howley, & Howley, 1990; Weiner, 1992)
7. More socially than academically oriented. May be extroverted. May be easygoing, considerate, and/or unassuming.	(Mandel & Marcus, 1988; Rimm, 1995; Van Boxtel & Monks, 1992; Whitmore, 1986)
8. Dependent, less resilient than high achievers.	(Bruns, 1992; Rimm, 1995; 1997b)
9. Socially immature.	(Clarke, 1988; Dowdall & Colangelo, 1982; Fink, 1965; Weiner, 1992; Whitmore, 1980; Wolfle, 1991)

Internal Mediators	
10. Fear failure. Avoid competition or challenging situations to protect their self-image.	(Bricklin & Bricklin, 1967; Butler-Por, 1987; Diaz, 1998; Gallagher, 1991; Laffoon, Jenkins-Friedman, & Tollefson, 1989; & McNabb, 1997; Rimm, 1995,1997a; Richert, 1991; Weiner, 1992)
11. Fear of success.	(Bricklin & Bricklin, 1967; Butler-Por, 1987; Ford, 1996; Weiner, 1992; Whitmore, 1986)
12. Attribute successes or failures to outside forces; exhibit an external locus of control, externalize conflict and problems.	(Butler- Por, 1987; Clarke, 1988; Ford, 1996; Gallagher, 1991; Kanoy et al, 1980; Weiner, 1992; Whitmore, 1980)
13. Negative attitude towards school.	(Bruns, 1992; Clark, 1988; Colangelo, Kerr, Christensen, &Maxey, 1993; Diaz, 1998; Ford, 1996; Frankel, 1965; Lupart & Pyryt, 1996; McCall et al, 1992; Rimm, 1995)
14. Antisocial or rebellious.	(Bricklin & Bricklin, 1967; Clark, 1988; Dowdall & Colangelo, 1982; Emerick, 1991; Mandel & Marcus, 1988; Richert, 1991; Rimm, 1995; Whitmore, 1980)
15. Self-critical or perfectionistic, feel guilty about not living up to the others' expectations	(Bricklin & Bricklin, 1967; Bruns, 1992; Diaz, 1998; Weiner, 1992)

Differential Thinking Skills/ Styles	
16. Perform less well on tasks that require detail-oriented or convergent thinking skills.	(Redding, 1990)
17. Score lower on sequential tasks such as repeating digits, repeating sentences, coding, computation, and spelling.	(Silverman, 1993)
18. Lack insight and critical ability.	(Fink, 1965)
Maladaptive strategies	
19. Lack goal directed behavior, fail to set realistic goals for themselves.	(Clark,1988; Emerick, 1992; Van Boxtel & Monks, 1992; Weiner, 1992)
20. Poor coping skills, develop coping mechanisms that reduce short-term stress, but inhibit long term success.	(Gallagher, 1991)
21. Possess poor self-regulation strategies; low tolerance for frustration; lack perseverance, self-control.	(Baum, Renzulli, & Hebert, 1994,1995a; Bricklin & Bricklin, 1967; Bruns, 1992, Diaz, 1998)
22. Use defense mechanisms.	(Bricklin & Bricklin, 1967; Mandel &Marcus, 1988, Rimm, 1995; Van Boxtel & Monks, 1992)

Statement	Strongly Disagree	Disagree	Slightly Disagree	Neither agree nor disagree	Slightly Agree	Agree	Strongly Agree
1. My classes are interesting.	1	2	3	4	5	6	7
2. I am intelligent.	1	2	3	4	5	6	7
3. I can learn new ideas quickly in school.	1	2	3	4	5	6	7
4. I check my assignments before I turn them in.	1	2	3	4	5	6	7
5. I am smart in school.	1	2	3	4	5	6	7
6. I am glad that I go to this school.	1	2	3	4	5	6	7
7. This is a good school.	1	2	3	4	5	6	7
8. I work hard at school.	1	2	3	4	5	6	7
9. I relate well to my teachers.	1	2	3	4	5	6	7
10. I am self-motivated to do my schoolwork.	1	2	3	4	5	6	7
11. I am good at learning new things in school.	1	2	3	4	5	6	7
12. This school is a good match for me.	1	2	3	4	5	6	7
13. School is easy for me.	1	2	3	4	5	6	7
14. I like my teachers.	1	2	3	4	5	6	7
15. I want to get good grades in school.	1	2	3	4	5	6	7
16. My teachers make learning interesting.	1	2	3	4	5	6	7
17. My teachers care about me.	1	2	3	4	5	6	7
18. Doing well in school is important for my future career goals.	1	2	3	4	5	6	7

Research Questions:

1. Are there mean differences between gifted achievers and gifted underachievers on each of the five factors of the SAAS-R (academic self-perceptions, attitudes toward teachers, attitudes toward school, goal valuation, and motivation/self-regulation)?

2. Which set of factors on the SAAS-R best predicts a student's group membership as either a gifted high achiever or a gifted underachiever?

The School Attitude Assessment Survey-Revised (SAAS-R)

5 Factors hypothesized to be related to academic achievement/underachievement

- Academic Self Perceptions
- Attitudes Towards School
- Attitudes Towards Teachers
- Goal Valuation
- Motivation/Self Regulation

Cronbach's Alpha Reliabilities and Inter-factor Correlations on the SAAS-R

Factor	I	II	III	IV	V
ASP	(.855)				
ATT	.364	(.892)			
ATS	.267	.603	(.865)		
Goals	.367	.507	.343	(.889)	
MOT/S-R	.339	.65	.447	.741	(.912)

T-tests on each of the five factors on the SAAS-R

Factors	M	SD	M	SD	d
	Achievers		Underachievers		
Academic Self-Perception	6.21	.57	5.86	.95	.46
Attitude Toward Teachers	5.41	.87	4.66	.98	.81*
Attitude Toward School	5.25	1.16	4.22	1.52	.75*
Goal Valuation	6.53	.58	5.26	1.41	1.21*
Motivation/Self-Regulation	5.48	.93	3.90	1.40	1.37*

(Achievers, N=122)

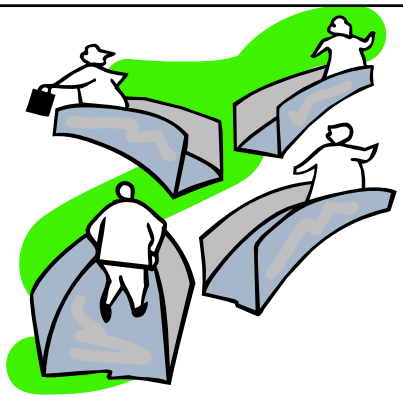
(Underachievers, N=55)

Results of the Logistic regression analysis with 2 predictor variables

Predictor Variable	B	SE	Wald	df	Sig	R	Exp (B)
Goal valuation	.76	.30	6.46	1	.011	.14	2.14
Motivation/ Self-regulation	.75	.24	9.96	1	.001	.19	2.11

(χ^2) = 66.1 with 2 df, $p<.01$
Cox and Snell R^2 = .313
Negelkerke R^2 = .439
Hosmer and Lemeshow GFI = 6.01 with 8 df (p=.65)

Classification



- Using the goal valuation and motivation/self-regulation factors, we correctly classified 81.8 % of the sample as either gifted achievers or gifted underachievers.
- Better able to accurately classify achievers (91.7%) than gifted underachievers (60.7%).

Gender differences in underachievement

- Generally, underachievers are more likely to be male than female. Across a number of studies of underachievers, the ratio of male underachievers to female underachievers appears to be at least 2:1 (Baker, Bridger, & Evans, 1998; Matthews & McBee, in press; McCall, 1994; McCoach, 2002; McCoach & Siegle, 2001; Peterson & Colangelo, 1996; Richert, 1991; Siegle et al., 2006).

A Study to Increase Academic Achievement for

Underachieving

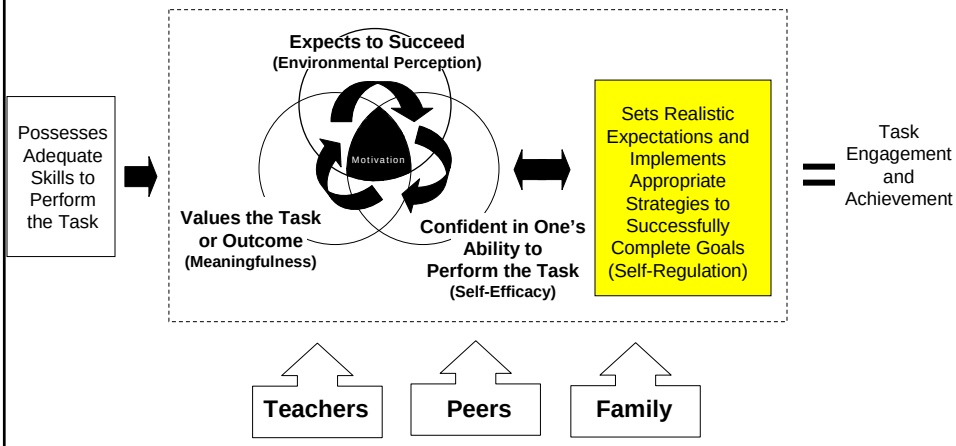
GIFTED STUDENTS

from The National Research Center on the Gifted and Talented

Principal Investigators: Del Siegle and Sally M. Reis
Study Development Team: Principal Investigators and D. Betsy McCoach
Intervention Development Team: Principal Investigators and Meredith Greene, D. Betsy McCoach, and Ric Schreiber
Field Test Team: D. Betsy McCoach and Del Siegle
Study Implementation Team: Principal Investigators and Becky Mann, Scott Davie, and Michele Moore

Achievement-Orientation Model

Del Siegle and D. Betsy McCoach
Neag School of Education
University of Connecticut



Each of the four elements of the model (Meaningfulness, Self-Efficacy, Environmental Perception, and Self-Regulation) is usually present in individuals who achieve at a level commensurate with their abilities. Some of these factors may be stronger than others, but overall, achievement-oriented individuals display a combination of all four traits. Remediation can be based on diagnosing which element or elements are deficit and addressing them. Two individuals might have very different remediation programs based on their achievement-orientation profiles.

Definition of Academically Able Underachiever

(Reis and McCoach)

Gifted- Shows evidence of potential for high academic performance by meeting **AT LEAST ONE** of the following criteria:

1. Individual IQ test score (either Stanford Binet LM or WISC- III) of at least 120 given no earlier than 6 years of age. **OR**
2. Composite standardized achievement test scores (administered within the past three years) in the 90th percentile **locally**.

Underachiever- Shows evidence of lower than expected academic performance by meeting **BOTH** of the following criteria:

1. Has grades in the bottom half of his or her class in reading/language arts and/or math **OR** Has a C average or below in reading/language arts and/or math.
2. Is recommended by classroom teacher, gifted specialist and/or counselor as being a bright underachiever.

The student needs to be underachieving during the **current** academic school year. Students who have done poorly in previous school years, but who have improved their grades recently should **NOT** be included in this group. The student must meet one of the criteria for gifted **and** both of the critieria for underachiever. **NOTE**: You will designate the student as an underachiever in **either** mathematics **or** reading/language arts.

Basic Assumption:

Students Underachieve for a Variety of Reasons

We based our interventions on five different types of underachievers:

Those who…

… believe the environment is at fault (environmental perception)

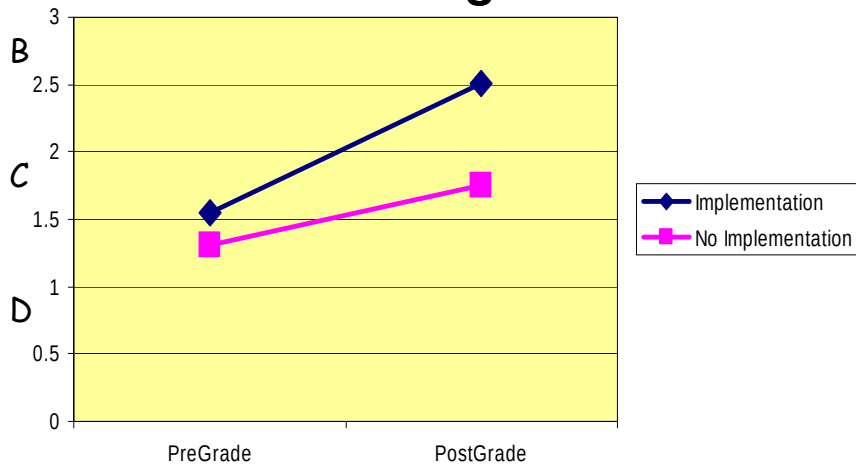
… don't value the goals of school (goal valuation)

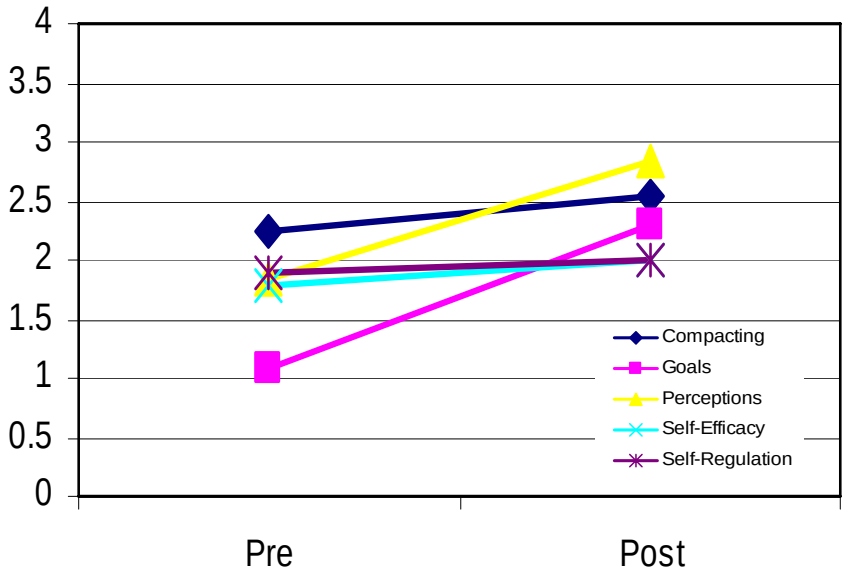
… don't believe they have the ability to do well (self-efficacy)

… are not challenged by the curriculum (curriculum-compacting and Type IIIs)

… lack organization and study skills (self-regulation)

Preliminary Study Findings





The goal valuation intervention produced the largest increase (1.2 letter grade increase) and the self-regulation intervention produced the smallest increase (0.1 letter grade increase).

Sample

- 178 students identified as gifted underachievers (9- to 16-years-old).
- 94% of sample between 10- to 14-years old, *M* = 12-years-old.
- Approximately two-thirds of sample were male; one-third were female.
- 64% Caucasian, 10% Latino, and 4% were African-American.
- IQ scores (*n* = 84); *M* = 130.6, *SD* = 8.9.

Siegle, McCoach, & Mann, 2005

Instrumentation

- **ADHD-IV Rating Scale (Home Version)**
- Two 9-item subscales:
  - **Inattention**
    - e.g. "Has difficulty sustaining attention in tasks or play activities."
  - **Hyperactivity/Impulsivity**
    - e.g. "Interrupts or intrudes on others."
- Reliability estimates:
  - **Inattention** alpha = .93
  - **Hyperactivity/Impulsivity** alpha = .89

Siegle, McCoach, & Mann, 2005

Instrumentation

- **ADHD-IV Rating Scale (School Version)**
- Two 9-item subscales:
  - **Inattention**
    - e.g. "Does not seem to listen when spoken to directly."
  - **Hyperactivity/Impulsivity**
    - e.g. "Blurts out answers before questions have been completed."
- Reliability Estimates:
  - **Inattention** alpha = .88
  - **Hyperactivity/Impulsivity** alpha = .91

Siegle, McCoach, & Mann, 2005

ADHD IV Home Rating Scales- Parent

Type	% in GUA Sample	% in Norm Group
Inattentive	23.7	3.2
Hyperactive	0	2.1
Combined	6.7	2.2
Overall prevalence	30.4	7.5

ADHD IV School Rating Scales- Teacher

Type	% in GUA Sample	% in Norm Group
Inattentive	41.4	10
Hyperactive	1.7	3.2
Combined	10.9	8.4
Overall prevalence	54.0	21.6

Siegle, McCoach, & Mann, 2005

Discussion

- Many underachievers are inattentive.
- This inattentiveness crosses over home and school environments.
- Are these students who actually suffer from ADHD inattentive type or is inattention a characteristic of underachievers?
- Should we treat the ADHD or the underachievement?

Underachieving gifted students are more externally oriented than achieving gifted students.

LOCUS OF CONTROL

Underachieving gifted males are more externally oriented than underachieving gifted females.

LOCUS OF CONTROL

Nongifted students are more externally oriented than achieving gifted students.

Moore, 2006

Relationship between classroom practices and academic underachievement

- Reis (1998) postulated a relationship between unchallenging or inappropriate curriculum in elementary school and underachievement in secondary school.
- If unchallenging scholastic environments produce underachieving gifted students, then providing intellectual challenge and stimulation at all grade levels should decrease underachievement.

Relationship between classroom practices and academic underachievement

- Do schools that differentiate instruction for high ability students have fewer incidences of underachievement among the gifted?
- Does providing part or full-time gifted programming reduce the occurrence of academic underachievement among the gifted?
- Is providing intellectual challenge especially critical during any particular age range?

The long-term effects of underachievement interventions remain underexplored.

- Do underachievement interventions have enduring effects on student motivation and achievement?
- What happens when the student is once again faced with non-stimulating schoolwork?