What if you were asked to prove your instruction, including assessment, is developmentally appropriate for young adolescents.

What would be your response?

Unique Needs of Young Adolescents

1. Structure and clear limits
2. Physical activity every single day
3. Frequent and meaningful experiences with fine and performing arts
4. Opportunities for self-definition
5. Safe and inviting emotional atmosphere
6. Experiences in with real competence
7. Meaningful participation in families, school, and communities
8. Basics: food, water, rest, good health, physical presence.
9. To belong

Do We Have the Middle Level Mindset?

- Do we go out of our way to make the implicit explicit?
- Do we repeat directions and reconfirm evaluative criteria?
- Do we remember that they are still children even though they are housed in increasingly adult-looking bodies?
- Are we willing to laugh out our own mistakes, even in front of our students?
- Are we skilled in helping middle level students monitor their own progression in their learning instead of relying purely on adults to indicate how they are doing?

- Are we mindful that they are still learning and thinking in very concrete ways, yet most of curriculum is symbolic and abstract, so we, “physicalize,” some of what we teach so they can learn it well?
- Are we careful not to take students’ inappropriate comments or reactions to our teaching personally?
- Are we careful to speak in ways that don’t incur sexual double meanings, or, if we incur them accidently, do we move on quickly and hope students don’t notice, but they really do? ☺
- Can we articulate the unique instructional, intellectual, emotional, social, physical, and moral needs of 10 to 15 year-olds?

- Are we comfortable with collaborating with other teachers in our own instructional efforts?
- Are we sensitive to individual students who don’t get the “in” joke just declared by a classmate and are fearful of being found out?
- Do frequently get together and look for ways for content and skills in one class to be used meaningfully in another subject area?
- Are we proactive in cultivating empathy for our students’ experience in seeing our course content for the first time, and responding accordingly?

- Are we aware that middle level students are experiencing a phase of increased risk-taking and addictive tendencies?
- Are we aware of the research that demonstrates strong correlations between the implementation of true middle schools and improved student achievement, regardless of grade configuration?
- Are we skilled in meaning-making with our curriculum?
- Are we aware that middle level students appreciate humor and the use of metaphors/analogies in their learning?
- Do we get students physically moving because the growth plates on the ends of their bones are stressed?
- Are we mindful that most of what enters our students' heads goes to emotional response centers for the brain first, NOT cognitive centers?

- Do we understand the power of media, social and otherwise, to affect student perceptions and behaviors, and do we take steps to help students navigate their media participation and footprint constructively?
- Are we comfortable with students asking us questions about their own sexual orientation, and do we provide a safe and inviting classroom environment for students of all genders, including those in, or considering being in, the LGBT community?
- Are we okay that something we do works for five weeks, then stops working for four weeks, then suddenly works again? Or, something works with 2nd period, but doesn't work with 5th period?
- Do we know our subjects so well that we can teach with instructional dexterity as warranted, and we can help students make connections among concepts and skills?

- Do we demonstrate daily that our students make good company, even when they haven't kept up with personal hygiene?
- Are we aware that our students are hyper-sensitive to criticism and sarcasm to a degree many of us have forgotten, and that this is developmentally normal?
- Are we okay with inadvertent bodily noises emanating from students at inopportune moments during the day?
- Do we embrace the insightful and practical allies we have in our school counselors for our students' academic and personal growth?

- Are we prepared for our students' bigger questions about life and morality, even those with political fallout, depending on our response, or those without easy answers?
- Are we open and inviting of parental involvement in the classroom and at home?
- Do we ceaseless focus on moving students from dependence to independence?
- Do we keep up to date on the latest research and thinking on young adolescent learning and development?
- Do we value middle level teaching as a meaningful, worthwhile teaching role, NOT as merely a place to bide our time until a position opens in the local high school?

This We Believe: Keys to Educating Young Adolescents
(AMLE, 2010)

Essential Attributes for a Successful Middle Years Experience

- **Developmentally Responsive**
- **Challenging**
- **Empowering**
- **Equitable**

Curriculum is challenging, exploratory, integrative, and relevant.

Educators use multiple learning and teaching approaches.

Varied and ongoing assessments advance learning as well as measure it.

Characteristics of Successful Middle Level Schools

Curriculum, Instruction, and Assessment

Educators value young adolescents and are prepared to teach them.

Students and teachers are engaged in active, purposeful learning.

Leadership and Organization

A shared vision developed by all stakeholders guides every decision.

Leaders are committed to and knowledgeable about this age group, educational research, and best practices.

Leaders demonstrate courage and collaboration.

Ongoing professional development reflects best educational practices.

Organizational structures foster purposeful learning and meaningful relationships.

Culture and Community

The school environment is inviting, safe, inclusive, and supportive of all.

Every student's academic and personal development is guided by an adult advocate.

Comprehensive guidance and support services meet the needs of young adolescents.

Health and wellness are supported in curricula, programs, policies.

The school actively involves families in the education of their children.

The school includes community and business partners.

In Middle Years Programs:

1. Teachers are trained in the developmental nature of students, not just subjects, and they use that expertise daily.
2. Teachers are comfortable with working on both cognitive and affective elements, 'provide supportive, inviting environment.
3. Small group of teachers teach 60 to 180 students in common (Teaming).
4. Team classes are geographically close to one another.
5. Team teachers share common planning times.

5. There are more options for flexible scheduling and block or extended length classes to improve instruction.
6. Instead of "elective" classes, there is more of an exploratory program
7. There is an advisory program in which each student is known well by an adult advocate and they have shared experiences in small, advisory groups
8. The faculty share a common vision for the school's mission and core values.

9. There is less tracking and more dynamic grouping.
10. There is less whole class, direct instruction and more cooperative, differentiated, inquiry-based learning.
11. There is more integrated curriculum among the subjects that creates meaningful context and connection.
12. There is more experiential learning: simulations, role-playing, outdoor education

Great Resources for Developing Expertise on Young Adolescents

- MYC and AMLE conferences, institutes, and publications!
- www.amle.org – Research, updates, conferences
- *Turning Points 2000*
- *This We Believe* (AMLE)
- *Teaching 10 to 14 Year-olds* (Stevenson)
- www.middleweb.com
- **RMLE On-line (AMLE), Edited by David C. Virtue, PhD**
- **National Forum to Accelerate Middle-Grades Reform -- http://middlegradesforum.org/**

Also highly recommended:

1. *Middle School Journal* (AMLE)
2. *Middle Ground* (AMLE)
3. *Breaking Ranks in the Middle* (NASSP)
4. *Slices of Life: Managing Dilemmas in Middle Grades Teaching (*Mandzuk, Hasinoff)
5. *Managing the Madness: A Practical Guide to Middle Grades Classrooms (*Berckemeyer)
6. *Everyone's Invited! Interactive Strategies That Engage Young Adolescents* (Spencer)
7. *Promoting Harmony: Young Adolescent Development & Classroom Practices 3rd Edition* (Strahan, L'Esperance, Van Hoose)
8. *An International Look at Educating Young Adolescents (*Mertens, Anfara, Jr., Roney)

Rick's Books that Speak to Educating Young Adolescents

- *Meet Me in the Middle* (Stenhouse)
- *Day One and Beyond* (Stenhouse)
- *Differentiation: From Planning to Practice* (Stenhouse)
- *Fair Isn't Always Equal: Assessment and Grading in the Differentiated Classroom* (Stenhouse)
- *The Collected Writings (So Far) of Rick Wormeli: Crazy Good Stuff I Learned Along the Way* (AMLE)
- *Summarization in any Subject* (ASCD)
- *Middle School Matters* (Written with Monte Selby, Debbie Silver, Kathy Hunt)
- *Because You Teach* (Written with Monte Selby, Debbie Silver, Kathy Hunt)

If I had been a kid in my class today,

…would I want to come back?

-- Elsbeth Murphy, Chalkdust, 1979

"…[N]o research supports the idea that low grades prompt students to try harder. More often, low grades prompt students to withdraw from learning. To protect their self-images, many students regard the low grade as irrelevant or meaningless. Others may blame themselves for the low grade but feel helpless to improve (Selby & Murphy, 1992)."

= Tom Guskey, "Five Obstacles to Grading Reform," *Education Leadership*, ASCD, November 2011

Discrete mathematics is the study of mathematical structures that are fundamentally discrete rather than continuous. In contrast to real numbers that have the property of varying "smoothly," the objects studied in discrete mathematics – such as integers, graphs, and statements in logic – do not vary smoothly in this way, but have distinct, separated values. Discrete mathematics therefore excludes topics in, "continuous mathematics," such as calculus and analysis. Discrete objects can often be enumerated by integers. More formally, discrete mathematics has been characterized as the branch of mathematics dealing with countable sets (sets that have the same cardinality as subsets of the natural numbers, including rational numbers but not real numbers). However, there is no exact, universally agreed, definition of the term "discrete mathematics." Indeed, discrete mathematics is described less by what is included than by what is excluded: continuously varying quantities and related notions.

The set of objects studied in discrete mathematics can be finite or infinite. The term finite mathematics is sometimes applied to parts of the field of discrete mathematics that deals with finite sets, particularly those areas relevant to business. Research in discrete mathematics increased in the latter half of the twentieth century partly due to the development of digital computers which operate in discrete steps and store data in discrete bits. Concepts and notations from discrete mathematics are useful in studying and describing objects and problems in branches of computer science, such as computer algorithms, programming languages, cryptography, automated theorem proving, and software development. Conversely, computer implementations are significant in applying ideas from discrete mathematics to real-world problems, such as in operations research. Although the main objects of study in discrete mathematics are discrete objects, analytic methods from continuous mathematics are often employed as well.

The history of discrete mathematics has involved a number of challenging problems which have focused attention within areas of the field. In graph theory, much research was motivated by attempts to prove the four color theorem, first stated in 1852, but not proved until 1976 (by Kenneth Appel and Wolfgang Haken, using substantial computer assistance).

In logic, the second problem on David Hilbert's list of open problems presented in 1900 was to prove that the axioms of arithmetic are consistent. Gödel's second incompleteness theorem, proved in 1931, showed that this was not possible – at least not within arithmetic itself. Hilbert's tenth problem was to determine whether a given polynomial Diophantine equation with integer coefficients has an integer solution. In 1970, Yuri Matiyasevich proved that this could not be done.

The need to break German codes in World War II led to advances in cryptography and theoretical computer science, with the first programmable digital electronic computer being developed at England's Bletchley Park. At the same time, military requirements motivated advances in operations research. The Cold War meant that cryptography remained important, with fundamental advances such as public-key cryptography being developed in the following decades. Operations research remained important as a tool in business and project management, with the critical path method being developed in the 1950s. The telecommunication industry has also motivated advances in discrete mathematics, particularly in graph theory and information theory. Formal verification of statements in logic has been necessary for software development of safety-critical systems, and advances in automated theorem proving have been driven by this need.

Walter Mischel on his Marshmallow Experiment
http://www.youtube.com/watch?v=0b3SWsjWzdA

Dopamine: POWERFUL Neurotransmitter

Dopamine increases our general level of inquisitiveness and goal-directed behavior as we seek to fill those needs.

We feel good while we are doing the task (not just upon completion).

Released in great amounts when goals are accomplished.

We Can Alter Dopamine Release

1. The brain can be trained to feed off bursts of dopamine sparked by accomplishment (rewarding experiences)

- Little incremental goals
- Accomplishing task is reward
- Positive Feedback
- Progress through series of goals to accomplish the BIG one!

2. Other Dopamine-Releasing Triggers:

- Successful problem solving
- Positive, deeper-learning, group experiences
- Eating protein
- Laughter, fun, anticipation
- Movement, exercise

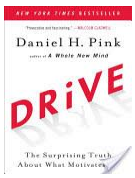
There is no such thing as laziness.

When it comes to cognitive perseverance, carrots and stick approaches don't work. Avoid them.

Three Premises:

- We can ***control*** and ***coerce*** someone to do something, but we can't ***motivate*** anyone to do anything they don't already want to do.
- Motivation is only doing to the best of our ability what we are *already capable* of doing. *(Rick Lavoie, F.A.T. City Workshop: How Difficult Can This Be?" PBS Video)*
- Motivation is not something we do ***to*** students, it is something we create *with* them.

Three elements in intrinsic motivation:



- Autonomy -- the ability to choose what and how tasks are completed
- Mastery -- the process of becoming adept at an activity
- Purpose -- the desire to improve the world.

-- Daniel H. Pink

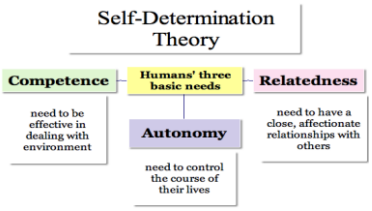
Drive: The Surprising Truth about What Motivates Us

2009

Self-Determination Theory (Deci and Ryan, 1985)

Innate Need to Grow:

1. Competence and mastery of skills
2. Connection and relatedness and a sense of belonging
3. Autonomy – sense of control over their goals and behavior.



Characteristics of Motivational Classrooms (Rick Lavoie, *The Motivation Breakthrough*, 2007)

1. Relevance
2. Control
3. Balance of Support and Challenge
4. Social Interaction
5. Safety and Security

<u>Motivational Forces (Needs)</u>:

To Belong	To be Acknowledged
To be Independent	To Control
To be Important	To Assert
To Know	

The amount of risk someone takes in the work place is directly proportional to his sense of strong relationship with the person in charge.

Goal-Performance

- People with goals outperform people without goals
- Goals can be self-created or accepted (from others)
- When goals are difficult, behaviors are energized (increased effort, persistence, etc.)
- When goals are specific, behaviors are directed (increases attention, improves planning – work smarter)
- Plan to receive FEEDBACK on your goals since feedback is the single most important predictor of achievement (Hattie and Timperley, 2007)

What's the Greatest Motivator to Humans in a Workplace?

a) Recognition for good work?
b) Incentives for work well done?
c) Management support?
d) Interpersonal support (other staff)?
e) Clear, achievable goals?
f) Making progress?

Amabile, TM, Kramer S. J. (2007, May). Inner work life: understanding the subtext of business performance. *Harvard Bus Review, 85*(5):72-83, 144.

Model reliability. Goodwin and Miller: 2013 study demonstrating that adult experimenters who followed through on promises positively affected children's resilience. Children whose experimenters did not keep their promises were less resilient than the other group. Actions speak louder than words.

- *Education Leadership*, ASCD, September 2013, p. 75

Positive Connections Research

2 x 10

TIME COMMITMENT:
- 2 minutes a day
- 10 days in a row

COMMUNICATION COMMITMENT:
- Have a personal conversation with that student that is about anything he/she is interested in that is G-Rated.

Research by: Raymond Wlodkowski, 1983. Motivational Opportunities for Successful Teaching. Phoenix, AZ: Universal Dimensions

85% improvement in that one student's behavior AND found that behavior of all other students in that class improved too!

Rick Lavoie
From F.A.T. City Workshop: How Difficult Can This Be?

Visual Perception

Meaning Matters ☺

An English professor wrote the words, "A woman without her man is nothing," on the blackboard and directed the students to punctuate it correctly. The men wrote: "A woman, without her man, is nothing," while the women wrote, "A woman: without her, man is nothing."

"Let's eat, Dad!"
"Let's eat Dad."

Punctuate this one:

That that is is that
that is not is not
is that it it is

-- Daniel Keyes, *Flowers for Algernon*

"To a person uninstructed in natural history, his country or seaside stroll is a walk through a gallery filled with wonderful works of art, nine-tenths of which have their faces turned to the wall."

-- Thomas Huxley, 1854

Yes, teach students to memorize content.

Which one leads to more willingness to stick with a lengthy article and learn how microscopes work?

1. Kellen plays with the microscope, trying out all of its parts, then reads an article about how microscopes work and answers eight comprehension questions about its content.
2. Kellen reads the article about how microscopes work, answers eight comprehension questions about its content, then plays with the microscope, trying out all of its parts.

Perception

What do you see?
What number do you see?
What letter do you see?

Perception is when we bring meaning to the information we receive, and it depends on prior knowledge and what we expect to see. (Wolfe, 2010)

Are we teaching so that students perceive, or just to present curriculum and leave it up to the student to perceive it?

Journalistic vs. Encyclopedic Writing

"The breathing of Benbow's pit is deafening, like up-close jet engines mixed with a cosmic belch. Each new breath from the volcano heaves the air so violently my ears pop in the changing pressure – then the temperature momentarily soars. Somewhere not too far below, red-hot, pumpkin size globs of ejected lava are flying through the air."

-- *National Geographic*, November 2000, p. 54

"A volcano is a vent in the Earth from which molten rock (magma) and gas erupt. The molten rock that erupts from the volcano (lava) forms a hill or mountain around the vent. Lava may flowout as viscous liquid, or it may explode from the vent as solid or liquid particles…"

-- *Global Encyclopedia*, Vol. 19 T-U-V, p. 627

Read complex text aloud with proper vocal inflection and pacing. Students can understand text in readabilities above their own independent, silent reading proficiency when the complex text is read aloud by someone who understands the material.

And students who understand text are more inclined to stick with it when reading it silently later.

With hocked gems financing him,
Our hero bravely defied all scornful laughter
That tried to prevent his scheme.
Your eyes deceive, he had said;
An egg, not a table
Correctly typifies this unexplored planet.
Now three sturdy sisters sought proof,
Forging along sometimes through calm vastness
Yet more often over turbulent peaks and valleys.
Days became weeks,
As many doubters spread
Fearful rumors about the edge.
At last from nowhere
Welcome winged creatures appeared
Signifying momentous success.

-- Dooling and Lachman (1971)
pp. 216-222

Prime the brain prior to asking students to do any learning experience.

Priming means we show students:

1) **What they will get out of the experience (the objectives)**
2) **What they will encounter as they go through the experience (itinerary, structure)**

Creating Background Where There is None

Tell the story of the Code of Hammurabi before discussing the Magna Charta.

Before studying the detailed rules of baseball, play baseball.

Before reading about how microscopes work, play with micros copes.

Before reading the Gettysburg Address, inform students that Lincoln was dedicating a cemetery.

Before reading a book about a military campaign or a murder mystery with references to chess, play Chess with a student in front of the class, or teach them the basic rules, get enough boards, and ask the class to play.

In math, we might remind students of previous patterns as they learn new ones. Before teaching students factorization, we ask them to review what they know about prime numbers.

In English class, ask students, "*How is this story's protagonist moving in a different direction than the last story's protagonist?"*

In science, ask students, "*We've seen how photosynthesis reduces carbon dioxide to sugars and oxidizes water into oxygen, so what do you think the reverse of this process called, 'respiration,' does?"*

Components of Blood Content Matrix

	Red Cells	White Cells	Plasma	Platelets
Purpose	Carries Oxygen and Nutrients			
Amount	5,000,000 per CC			
Size & Shape	Small, indented, like Cheerios			
Nucleus ?	None			
Where formed	Bone Marrow, Spleen			

The student's rough draft:

Red blood cells carry oxygen and nutrients around the body. They are small and indented in the middle, like little Cheerios. There are 5 million per cc of blood. There is no nucleus in mature red blood cells. They are formed in the bone marrow and spleen.

Somebody Wanted But So

[Fiction]

Somebody ***(characters)…***

wanted ***(plot-motivation)…,***

but ***(conflict)…,***

so ***(resolution)… .***

Something Happened And Then

[Non-fiction]

Something ***(independent variable)…***

happened ***(change in that independent variable)…,***

and ***(effect on the dependent variable)…,***

then ***(conclusion)… .***

Word Morphology:
Teach Prefixes, Roots, and Suffixes!

Mal – badly, poor
Meta – beyond, after, change
Mis – incorrect, bad
Mono – one
Multi – many
Neo – new
Non – not
Ob, of, op, oc – toward, against
Oct – eight
Paleo – ancient
Para – beside, almost
Penta – five
Per – throughout, completely
Peri – around
Poly – many
Post – after
Pre – before
Pseudo – false

Meaningful Arrangement and Patterns are Everything

d-a-o-o-u-i-d-y-v-l-e

Enticement Elements

- Anticipation
- Foreshadow
- Suspense
- Curiosity
- Situational Interest
- Gentle Competition (Games)
- Personal Voice

Plagiarize in front of students…

…and get caught!

Be Absurd!

Demonstrative Pronouns in the Library

a **Adverb Man!** lot

Area vs Perimeter

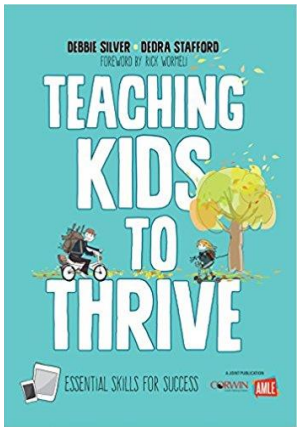
What strategy is always listed in the top five ways to engage students and build their self-efficacy?

Sine non qua

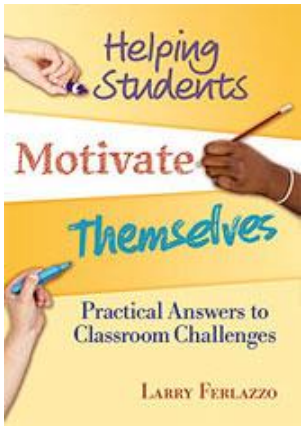
Literally: "Without which, not." Put another way: "Without this, nothing."

And key to this: Helpful, maturing feedback for middle schoolers never takes the form of "CYA" commentary

Assessment and Feedback are considered *information*, NOT evaluation or judgment.



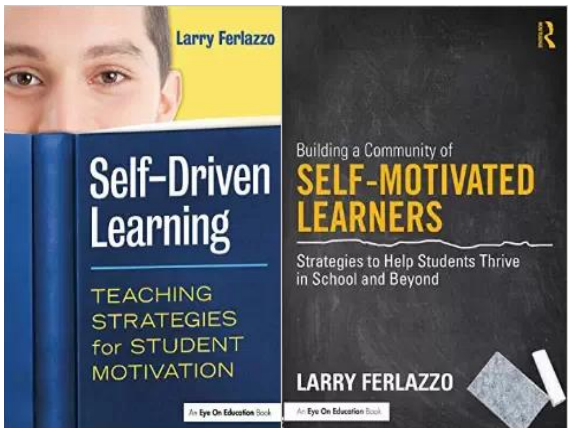
'Highly recommended, new book!

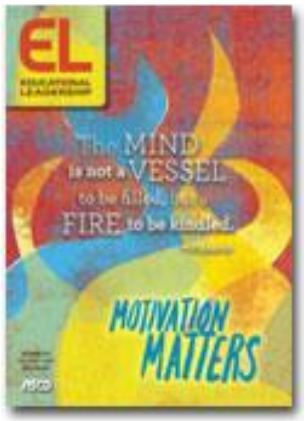


Larry Ferlazzo

Helping Students Motivate Themselves: Practical Answers to Classroom Challenges

Practical, Creative, Real….

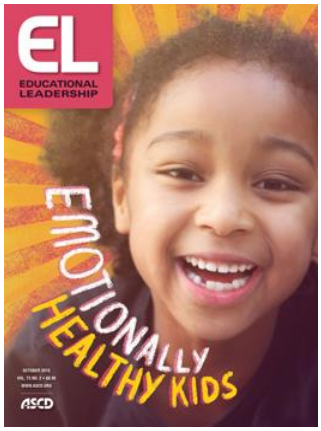




Motivation Matters

September 2014 | Volume 72 | Number 1

www.ascd.org

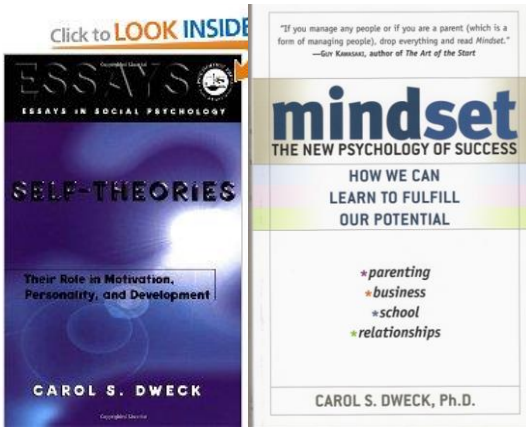


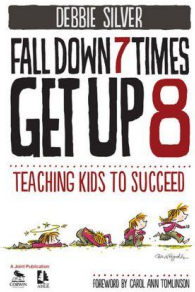
ASCD's *Education Leadership*
"Emotionally Healthy Kids"

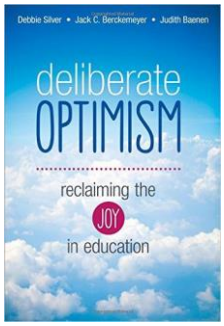
October 2015|
Volume 73 |
Number 2

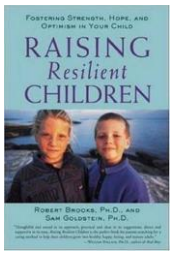
www.ascd.org

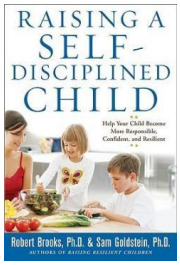
September 2016
Volume 74 | Number 1
Relationships First
Pages 10-15
"What to Do in Week One?"

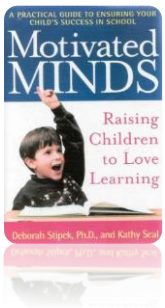


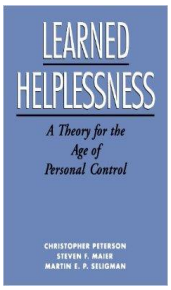

DEBBIE SILVER
FALL DOWN 7 TIMES
GET UP 8
TEACHING KIDS TO SUCCEED
FOREWORD BY CAROL ANN TOMLINSON

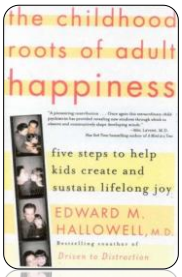

Debbie Silver • Jack C. Berckemeyer • Judith Baenen
deliberate
OPTIMISM
reclaiming the
JOY
in education

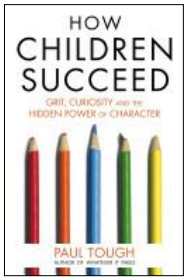

FOSTERING STRENGTH, HOPE, AND OPTIMISM IN YOUR CHILD
RAISING
Resilient
CHILDREN
ROBERT BROOKS, PH.D., AND SAM GOLDSTEIN, PH.D.


RAISING A
SELF-
DISCIPLINED
CHILD
Help Your Child Become More Responsible, Confident, and Resilient
Robert Brooks, Ph.D. & Sam Goldstein, Ph.D.
AUTHORS OF RAISING RESILIENT CHILDREN


A PRACTICAL GUIDE TO ENSURING YOUR CHILD'S SUCCESS IN SCHOOL
Motivated
MINDS
Raising
Children
to Love
Learning
Deborah Stipek, Ph.D., and Kathy Seal


LEARNED
HELPLESSNESS
A Theory for the
Age of
Personal Control
CHRISTOPHER PETERSON
STEVEN F. MAIER
MARTIN E. P. SELIGMAN

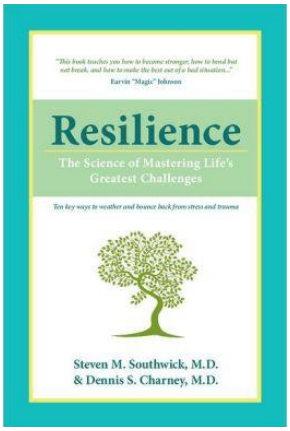

the childhood
roots of adult
happiness
five steps to help
kids create and
sustain lifelong joy
EDWARD M.
HALLOWELL, M.D.
Bestselling coauthor of
Driven to Distraction

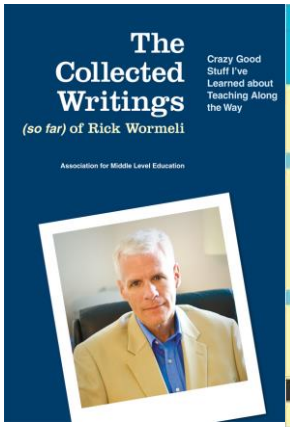

HOW
CHILDREN
SUCCEED
GRIT, CURIOSITY AND THE HIDDEN POWER OF CHARACTER
PAUL TOUGH

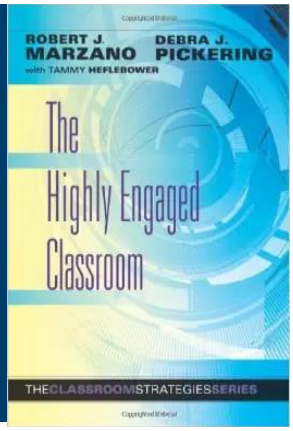
10 Roots of Resilience:

- Realistic optimism
- Facing fear
- Moral compass
- Social support
- Resilient role models
- Physical fitness
- Brainfitness
- Cognitive and emotional flexibility
- Meaning and purpose

BY: Steven Southwick and Dennis Charney (2012), Cambridge University Press







Resources…

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