

# Visible Learning™ 250+ Influences on Student Achievement

STUDENT	ES
<b>Prior knowledge and background</b>	
Field independence	0.94
Non-standard dialect use	-0.29
Piagetian programs	1.28
Prior ability	0.98
Prior achievement	0.59
Relating creativity to achievement	0.35
Relating high school to university achievement	0.60
Relating high school achievement to career performance	0.38
Self-reported grades	1.33
Working memory strength	0.66
<b>Beliefs, attitudes and dispositions</b>	
Attitude to content domains	0.46
Concentration/persistence/ engagement	0.54
Grit/incremental vs. entity thinking	0.25
Mindfulness	0.28
Morning vs. evening	0.12
Perceived task value	0.46
Positive ethnic self-identity	0.12
Positive self-concept	0.47
Self-efficacy	0.71
Stereotype threat	-0.33
Student personality	0.30
<b>Motivational approach, orientation</b>	
Achieving motivation and approach	0.42
Boredom	-0.47
Deep motivation and approach	0.57
Depression	-0.26
Lack of stress	0.17
Mastery goals	0.06
Motivation	0.38
Performance goals	-0.01
Anxiety	-0.44
Surface motivation and approach	-0.14
<b>Physical influences</b>	
ADHD	-0.90
ADHD – treatment with drugs	0.32
Breastfeeding	0.04
Deafness	-0.61
Exercise/relaxation	0.21
Gender on achievement	0.08
Illness	-0.44
Lack of sleep	-0.05
Full compared to pre-term/low birth weight	0.57
Relative age within a class	0.45
Bullying	-0.20

CURRICULA	ES
<b>Reading, writing and the arts</b>	
Comprehensive instructional programs for teachers	0.72
Comprehension programs	0.55
Drama/arts programs	0.42
Exposure to reading	0.43
Music programs	0.30
Phonics instruction	0.60
Repeated reading programs	0.75
Reading Recovery	0.53
Sentence combining programs	0.15
Spelling programs	0.58
Visual-perception programs	0.55
Vocabulary programs	0.63
Whole language approach	0.06
Writing programs	0.46
<b>Math and sciences</b>	
Manipulative materials on math	0.30
Mathematics programs	0.59
Science programs	0.56
Use of calculators	0.27
<b>Other curricula programs</b>	
Bilingual programs	0.36
Career interventions	0.38
Chess instruction	0.34
Conceptual change programs	0.99
Creativity programs	0.64
Diversity courses	0.09
Extra-curricula programs	0.20
Integrated curricula programs	0.47
Juvenile delinquent programs	0.12
Motivation/character programs	0.35
Outdoor/adventure programs	0.43
Perceptual-motor programs	0.08
Play programs	0.50
Social skills programs	0.37
Tactile stimulation programs	0.58

HOME	ES
<b>Family structure</b>	
Adopted vs non-adopted care	0.25
Engaged vs disengaged fathers	0.21
Intact (two-parent) families	0.22
Other family structure	0.16
<b>Home environment</b>	
Corporal punishment in the home	-0.33
Early years' interventions	0.44
Home visiting	0.29
Moving between schools	-0.30
Parental autonomy support	0.12
Parental involvement	0.45
Parental military deployment	-0.16
Positive family/home dynamics	0.52
Television	-0.18
<b>Family resources</b>	
Family on welfare/state aid	-0.12
Non-immigrant background	0.01
Parental employment	0.03
Socio-economic status	0.52

SCHOOL	ES
<b>Leadership</b>	
Collective teacher efficacy	1.39
Principals/school leaders	0.37
School climate	0.43
<b>School resourcing</b>	
External accountability systems	0.20
Finances	0.21
<b>Types of school</b>	
Charter schools	0.04
Religious schools	0.24
Single-sex schools	0.08
Summer school	0.19
Summer vacation effect	0.02
<b>School compositional effects</b>	
College halls of residence	0.05
Desegregation	0.28
Diverse student body	0.10
Middle school interventions	0.18
Out-of-school curricula experiences	0.07
School choice programs	0.12
School size (600-900 students at secondary)	0.43
<b>Other school factors</b>	
Counseling effects	0.35
Modifying school calendars/ timetables	0.09
Pre-school programs	0.28
Suspension/expelling students	-0.20

The Visible Learning™ research synthesises findings from **1,600+** meta-analyses of **95,000+** studies involving **300** million students, into what works best in education.

**Key for rating**

- Potential to considerably accelerate student achievement
- Potential to accelerate student achievement
- Likely to have positive impact on student achievement
- Likely to have small positive impact on student achievement
- Likely to have a negative impact on student achievement

**ES** Effect size calculated using Cohen's *d*



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CLASSROOM	ES
<b>Classroom composition effects</b>	
Detracking	0.09
Mainstreaming/inclusion	0.25
Multi-grade/age classes	0.04
Open vs. traditional classrooms	0.01
Reducing class size	0.15
Retention (holding students back)	-0.32
Small group learning	0.47
Tracking/streaming	0.12
Within class grouping	0.18
<b>School curricula for gifted students</b>	
Ability grouping for gifted students	0.30
Acceleration programs	0.68
Enrichment programs	0.48
<b>Classroom influences</b>	
Background music	0.10
Behavioral intervention programs	0.62
Classroom management	0.35
Cognitive behavioral programs	0.29
Decreasing disruptive behavior	0.34
Mentoring	0.12
Positive peer influences	0.53
Strong classroom cohesion	0.53
Students feeling disliked	-0.19

TEACHER	ES
<b>Teacher attributes</b>	
Average teacher effects	0.32
Teacher clarity	0.75
Teacher credibility	1.09
Teacher estimates of achievement	1.29
Teacher expectations	0.43
Teacher personality attributes	0.24
Teacher performance pay	0.05
Teacher verbal ability	0.22
<b>Teacher-student interactions</b>	
Student rating of quality of teaching	0.45
Teachers not labeling students	0.44
Teacher-student relationships	0.48
<b>Teacher education</b>	
Initial teacher training programs	0.10
Micro-teaching/video review of lessons	0.88
Professional development programs	0.37
Teacher subject matter knowledge	0.23

STUDENT LEARNING STRATEGIES	ES
<b>Strategies emphasizing student meta-cognitive/ self-regulated learning</b>	
Elaboration and organization	0.75
Elaborative interrogation	0.56
Evaluation and reflection	0.75
Meta-cognitive strategies	0.55
Help seeking	0.72
Self-regulation strategies	0.52
Self-verbalization and self-questioning	0.59
Strategy monitoring	0.58
Transfer strategies	0.86
<b>Student-focused interventions</b>	
Aptitude/treatment interactions	0.11
Individualized instruction	0.23
Matching style of learning	0.32
Student-centered teaching	0.36
Student control over learning	0.02
<b>Strategies emphasizing student perspectives in learning</b>	
Peer tutoring	0.51
Volunteer tutors	0.51
<b>Learning strategies</b>	
Deliberate practice	0.79
Effort	0.77
Imagery	0.51
Interleaved practice	0.47
Mnemonics	0.80
Note taking	0.51
Outlining and transforming	0.66
Practice testing	0.46
Record keeping	0.52
Rehearsal and memorization	0.73
Spaced vs. mass practice	0.65
Strategy to integrate with prior knowledge	0.93
Study skills	0.45
Summarization	0.74
Teaching test taking and coaching	0.30
Time on task	0.44
Underlining and highlighting	0.44

TEACHING STRATEGIES	ES
<b>Strategies emphasizing learning intentions</b>	
Appropriately challenging goals	0.59
Behavioral organizers	0.42
Clear goal intentions	0.51
Cognitive task analysis	1.29
Concept mapping	0.64
Goal commitment	0.40
Learning goals vs. no goals	0.51
Learning hierarchies-based approach	0.19
Planning and prediction	0.76
Setting standards for self-judgement	0.75
<b>Strategies emphasizing success criteria</b>	
Mastery learning	0.61
Worked examples	0.37
<b>Strategies emphasizing feedback</b>	
Classroom discussion	0.82
Different types of testing	0.12
Feedback	0.66
Formative evaluation	0.34
Questioning	0.48
Response to intervention	1.09
<b>Teaching/instructional strategies</b>	
Adjunct aids	0.35
Collaborative learning	0.34
Competitive vs. individualistic learning	0.24
Cooperative learning	0.40
Cooperative vs. competitive learning	0.53
Cooperative vs. individualistic learning	0.55
Direct instruction	0.59
Discovery-based teaching	0.21
Explicit teaching strategies	0.57
Humor	0.04
Inductive teaching	0.44
Inquiry-based teaching	0.46
Jigsaw method	1.20
Philosophy in schools	0.43
Problem-based learning	0.35
Problem-solving teaching	0.67
Reciprocal teaching	0.74
Scaffolding	0.58
Teaching communication skills and strategies	0.43

TECHNOLOGY, SCHOOL, & OUT-OF-SCHOOL STRATEGIES	ES
<b>Implementations using technologies</b>	
Clickers	0.22
Gaming/simulations	0.34
Information communications technology (ICT)	0.48
Intelligent tutoring systems	0.51
Interactive video methods	0.54
Mobile phones	0.43
One-on-one laptops	0.16
Online and digital tools	0.26
Programmed instruction	0.23
Technology in distance education	0.01
Technology in mathematics	0.33
Technology in other subjects	0.55
Technology in reading/literacy	0.29
Technology in science	0.23
Technology in small groups	0.21
Technology in writing	0.42
Technology with college students	0.42
Technology with elementary students	0.44
Technology with high school students	0.30
Technology with learning needs students	0.57
Use of PowerPoint	0.26
Visual/audio-visual methods	0.22
Web-based learning	0.33
<b>Implementations using out-of-school learning</b>	
After-school programs	0.40
Distance education	0.14
Home-school programs	0.16
Homework	0.29
Service learning	0.58
<b>Implementations that emphasize school-wide teaching strategies</b>	
Co- or team teaching	0.19
Interventions for students with learning needs	0.77
Student support programs – college	0.21
Teaching creative thinking	0.37
Whole-school improvement programs	0.28

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