

Neuroeducación y TDAH en el aula

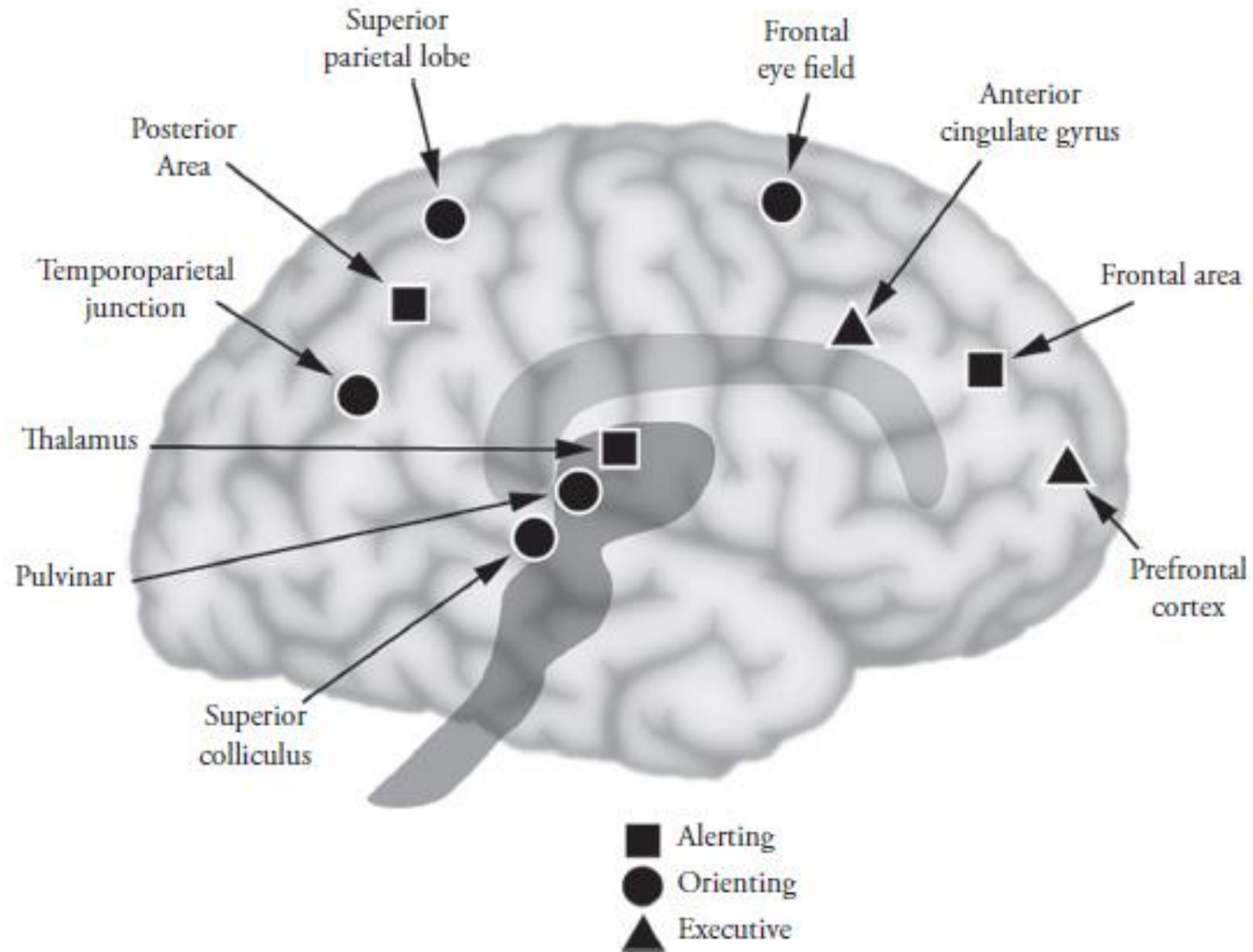


Jesús C. Guillén, Pontevedra 2018



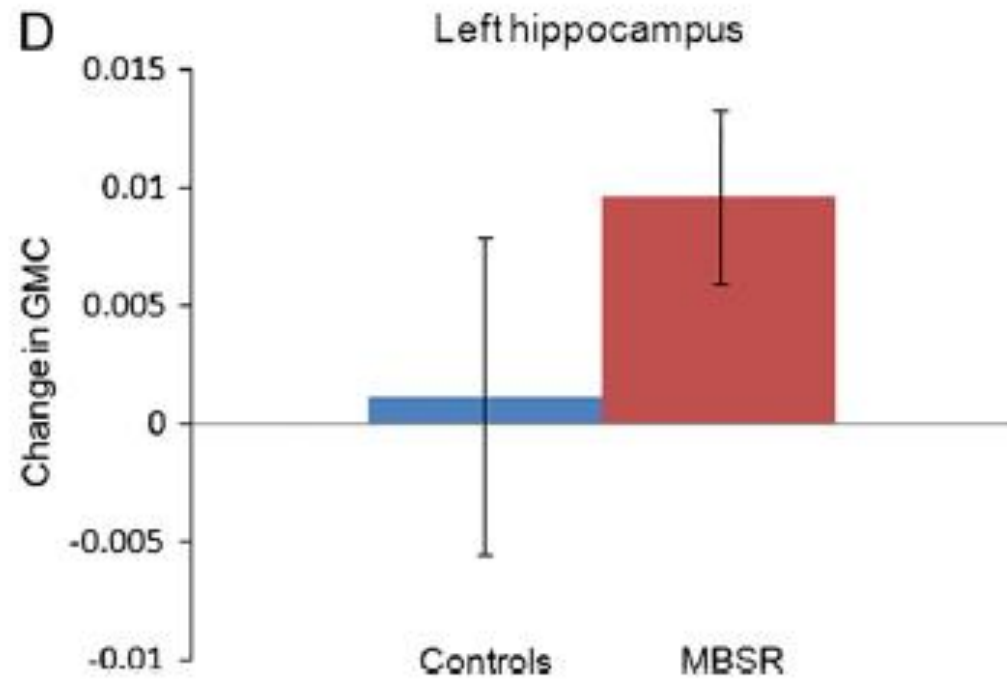
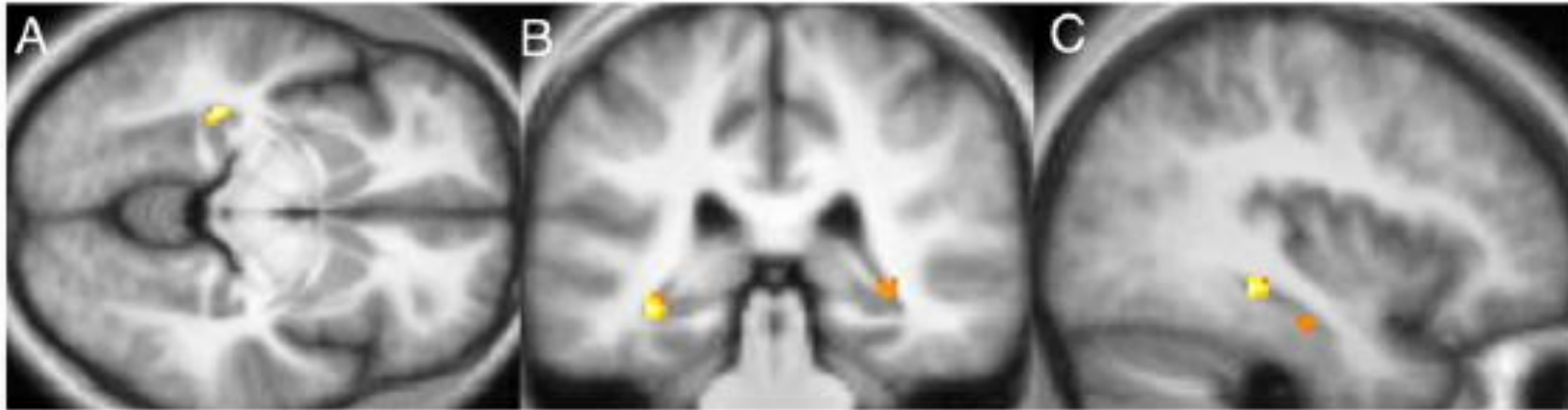


Atención

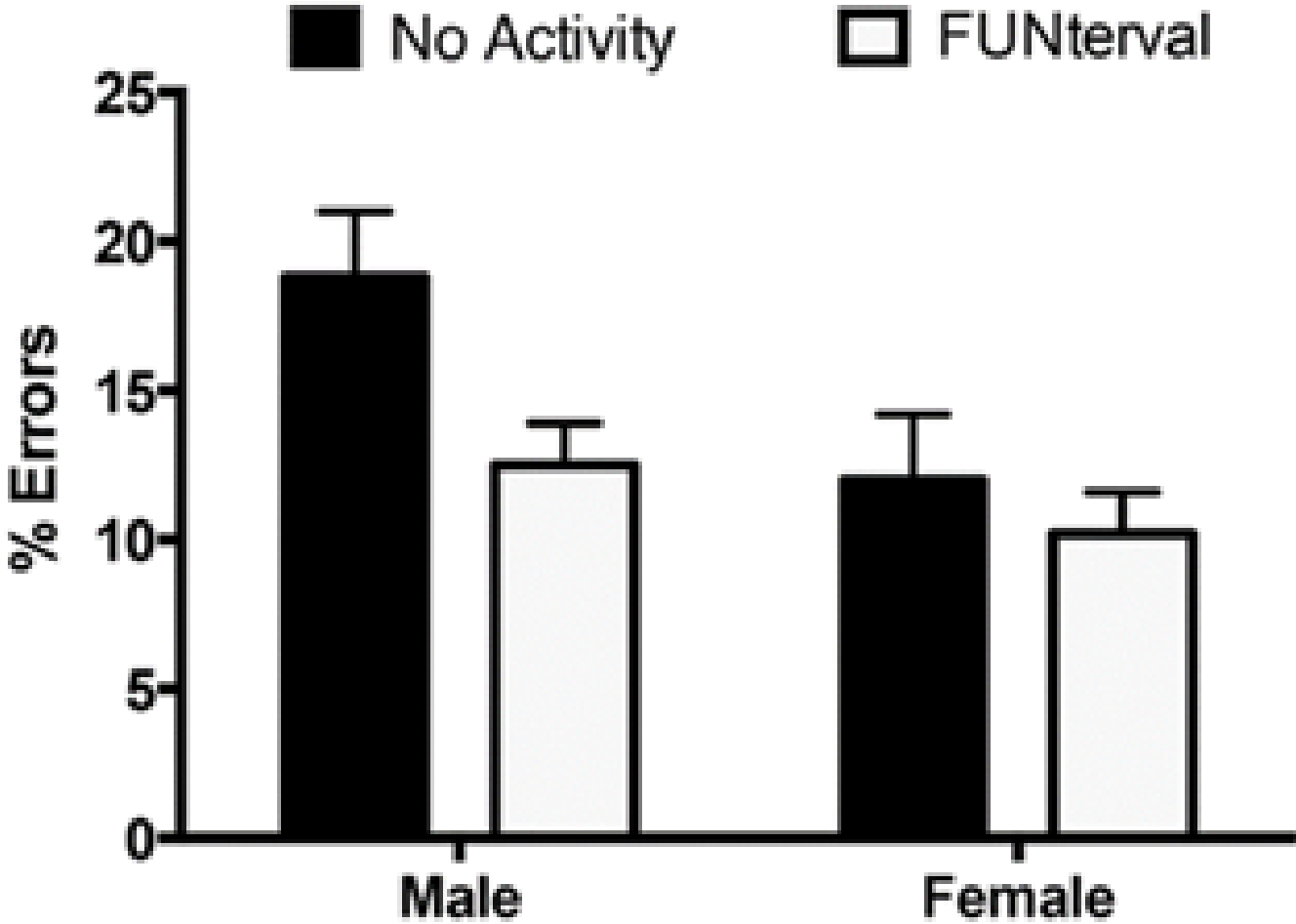




Mindfulness

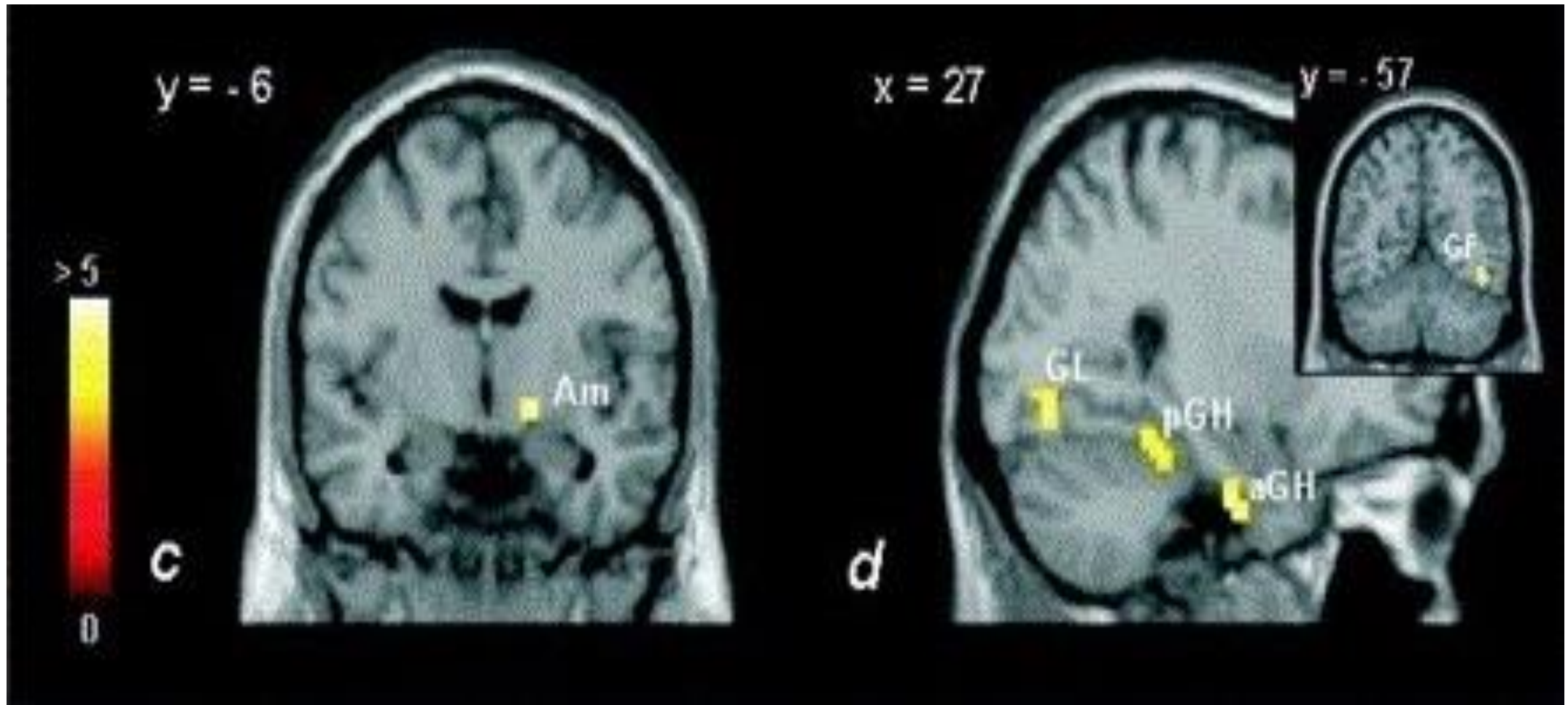


Parones



Ma J. K. et al. (2015): "Four minutes of in-class high-intensity interval activity improves selective attention in 9- to 11-year olds". Applied Physiology Nutrition and Metabolism 40, 238-244.

Clima emocional



Programas de educación emocional

CHILD DEVELOPMENT



Child Development, January/February 2011, Volume 82, Number 1, Pages 405–432

The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions

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Loyola University Chicago

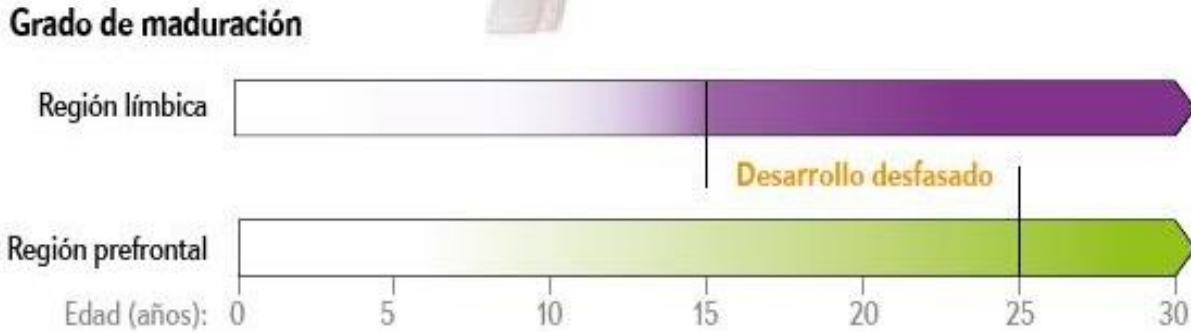
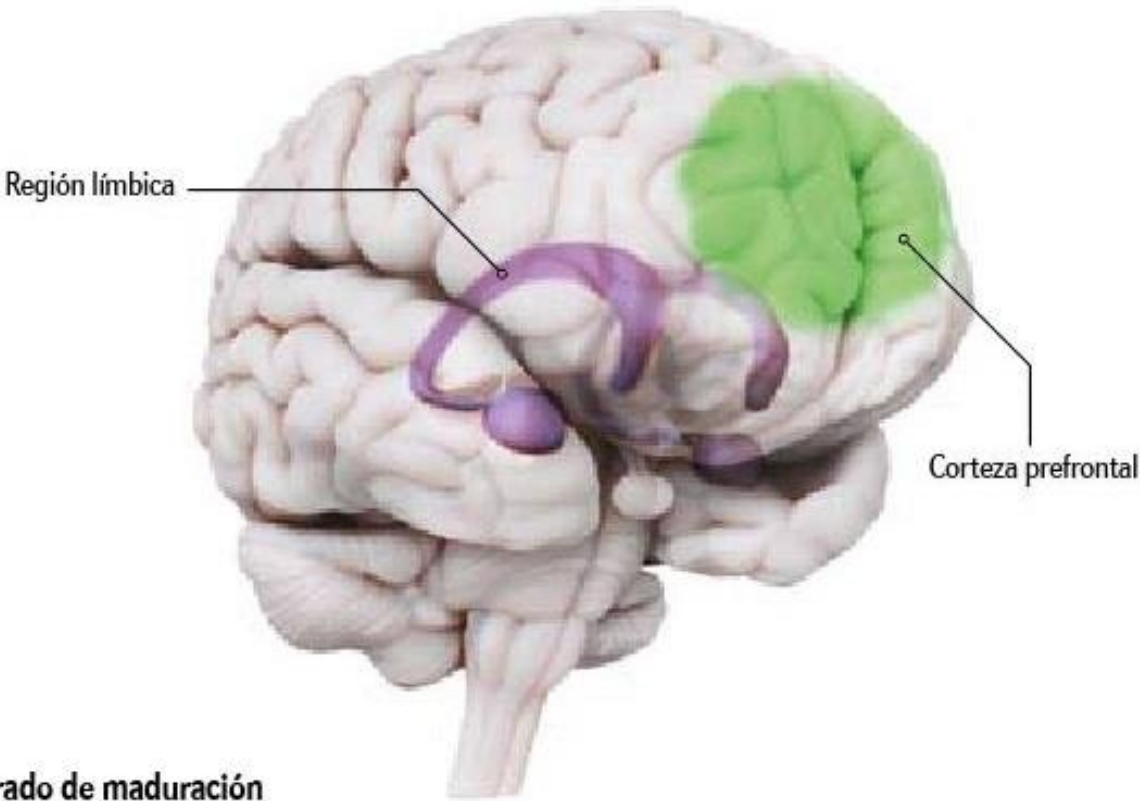
Roger P. Weissberg
*Collaborative for Academic, Social, and
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University of Illinois at Chicago*

Allison B. Dymnicki and
Rebecca D. Taylor
University of Illinois at Chicago

Kriston B. Schellinger
Loyola University Chicago

This article presents findings from a meta-analysis of 213 school-based, universal social and emotional learning (SEL) programs involving 270,034 kindergarten through high school students. Compared to controls, SEL participants demonstrated significantly improved social and emotional skills, attitudes, behavior, and academic performance that reflected an 11-percentile-point gain in achievement. School teaching staff successfully conducted SEL programs. The use of 4 recommended practices for developing skills and the presence of implementation problems moderated program outcomes. The findings add to the growing empirical evidence regarding the positive impact of SEL programs. Policy makers, educators, and the public can contribute to healthy development of children by supporting the incorporation of evidence-based SEL programming into standard educational practice.

Cerebro en la adolescencia



Arte



Funciones ejecutivas



Contents lists available at [ScienceDirect](#)

Developmental Cognitive Neuroscience

journal homepage: <http://www.elsevier.com/locate/dcn>



Conclusions about interventions, programs, and approaches for improving executive functions that appear justified and those that, despite much hype, do not



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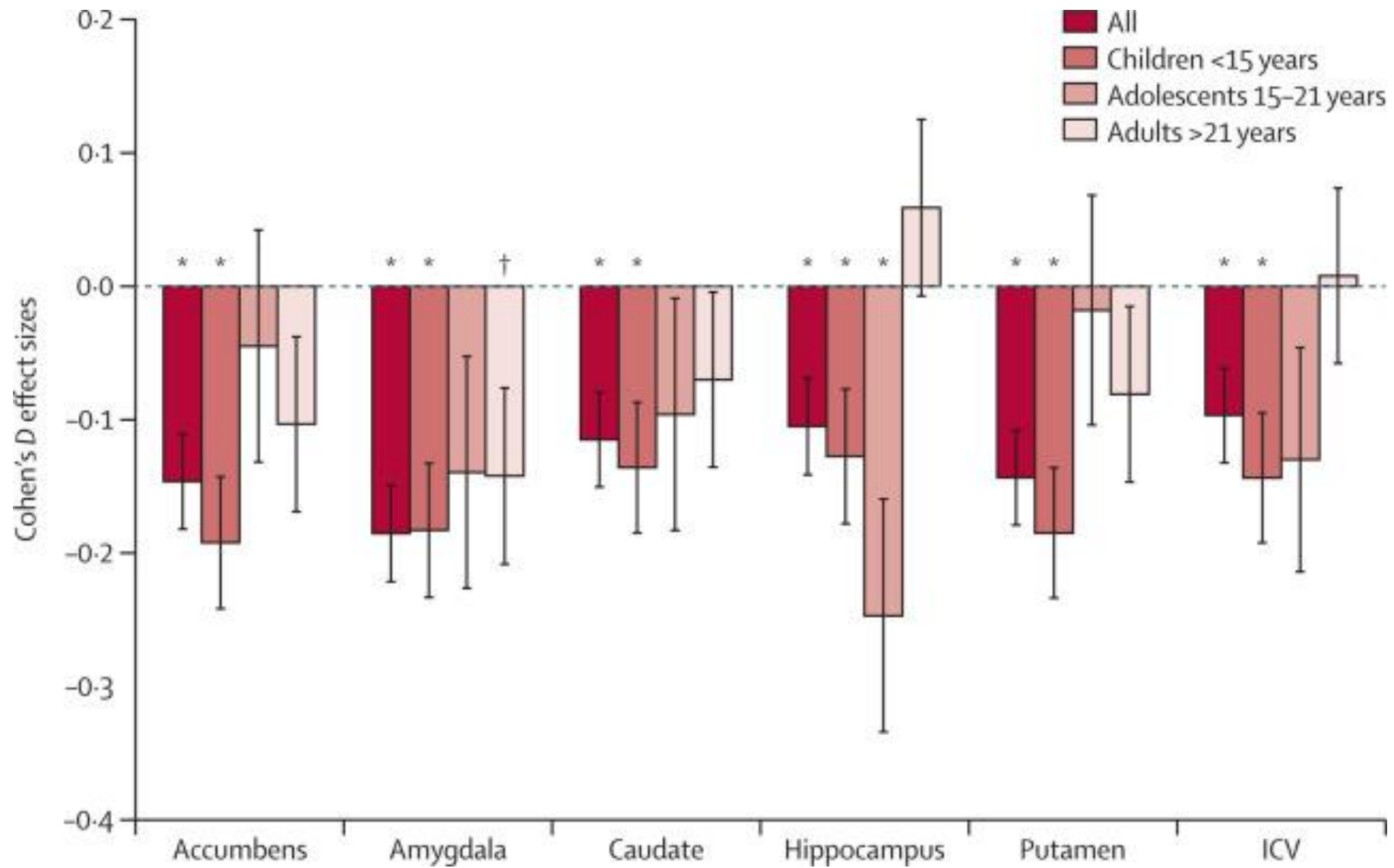
Stress

Loneliness

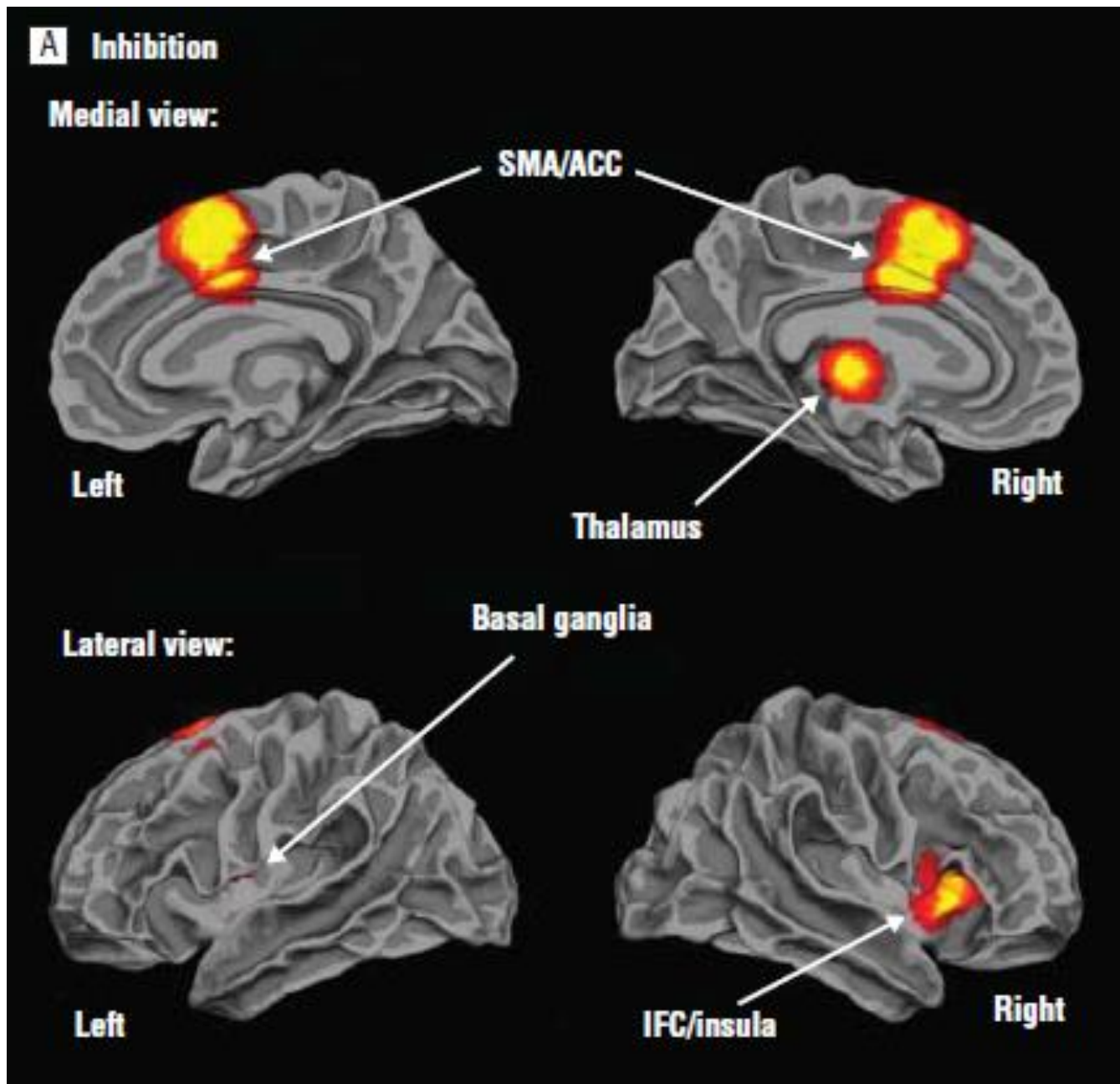
ABSTRACT

The 'Executive Functions' (EFs) of inhibitory control, working memory, and cognitive flexibility enable us to think before we act, resist temptations or impulsive reactions, stay focused, reason, problem-solve, flexibly adjust to changed demands or priorities, and see things from new and different perspectives. These skills are critical for success in all life's aspects and are sometimes more predictive than even IQ or socioeconomic status. Understandably, there is great interest in improving EFs. It's now clear they can be improved at any age through training and practice, much as physical exercise hones physical fitness. However, despite claims to the contrary, wide transfer does not seem to occur and 'mindless' aerobic exercise does little to improve EFs. Important questions remain: How much can EFs be improved (are benefits only superficial) and how long can benefits be sustained? What are the best methods for improving EFs? What about an approach accounts for its success? Do the answers to these differ by individual characteristics such as age or gender? **Since stress, sadness, loneliness, or poor health impair EFs, and the reverse enhances EFs, we predict that besides directly train EFs, the most successful approaches for improving EFs will also address emotional, social, and physical needs.**

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Hoogman M. et al. (2017): "Subcortical brain volume differences in participants with attention deficit hyperactivity disorder in children and adults: a cross-sectional mega-analysis". *Lancet Psychiatry* 4(4), 310-319.



Hart H. et al. (2013): "Meta-analysis of fMRI studies of inhibition and attention in ADHD: Exploring task-specific, stimulant medication and age effects". *JAMA Psychiatry* 70, 185–198.

Algunas particularidades en el TDAH

- Cerebrales: núcleo accumbens (recompensa), amígdala (emociones), hipocampo (memoria)
- Ejecutivos: control inhibitorio, memoria de trabajo, planificación,...
- Motivacionales: aplazamiento de la recompensa
- Motrices
- Comorbilidad

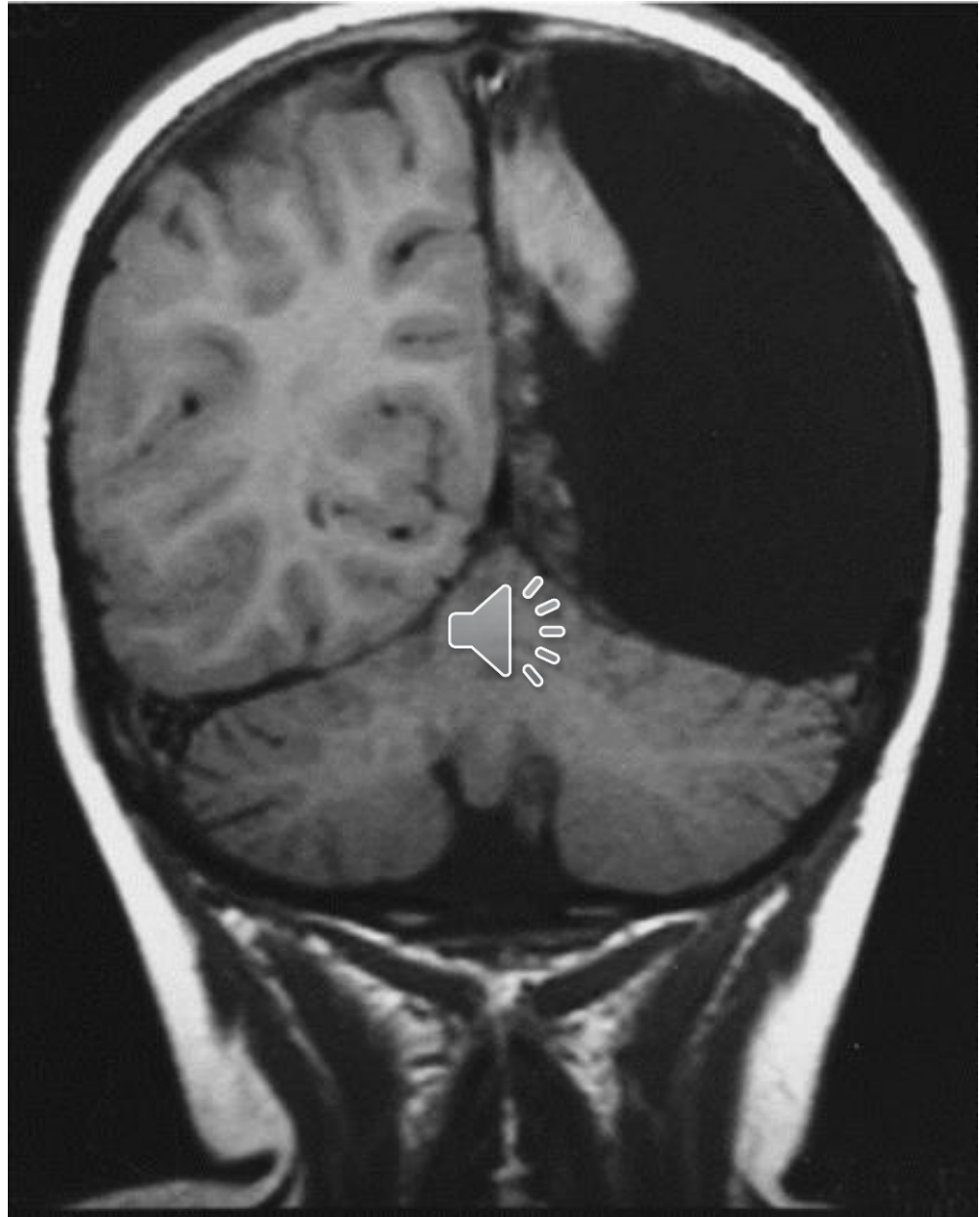
...

Conclusión:

‘Existen evidencias sólidas que demuestran que el TDAH es una alteración del desarrollo de origen biológico y que las conductas observadas son el resultado de éstas anomalías. Aunque un entorno familiar desorganizado o un currículo escolar inadecuado pueden amplificar esas conductas’.

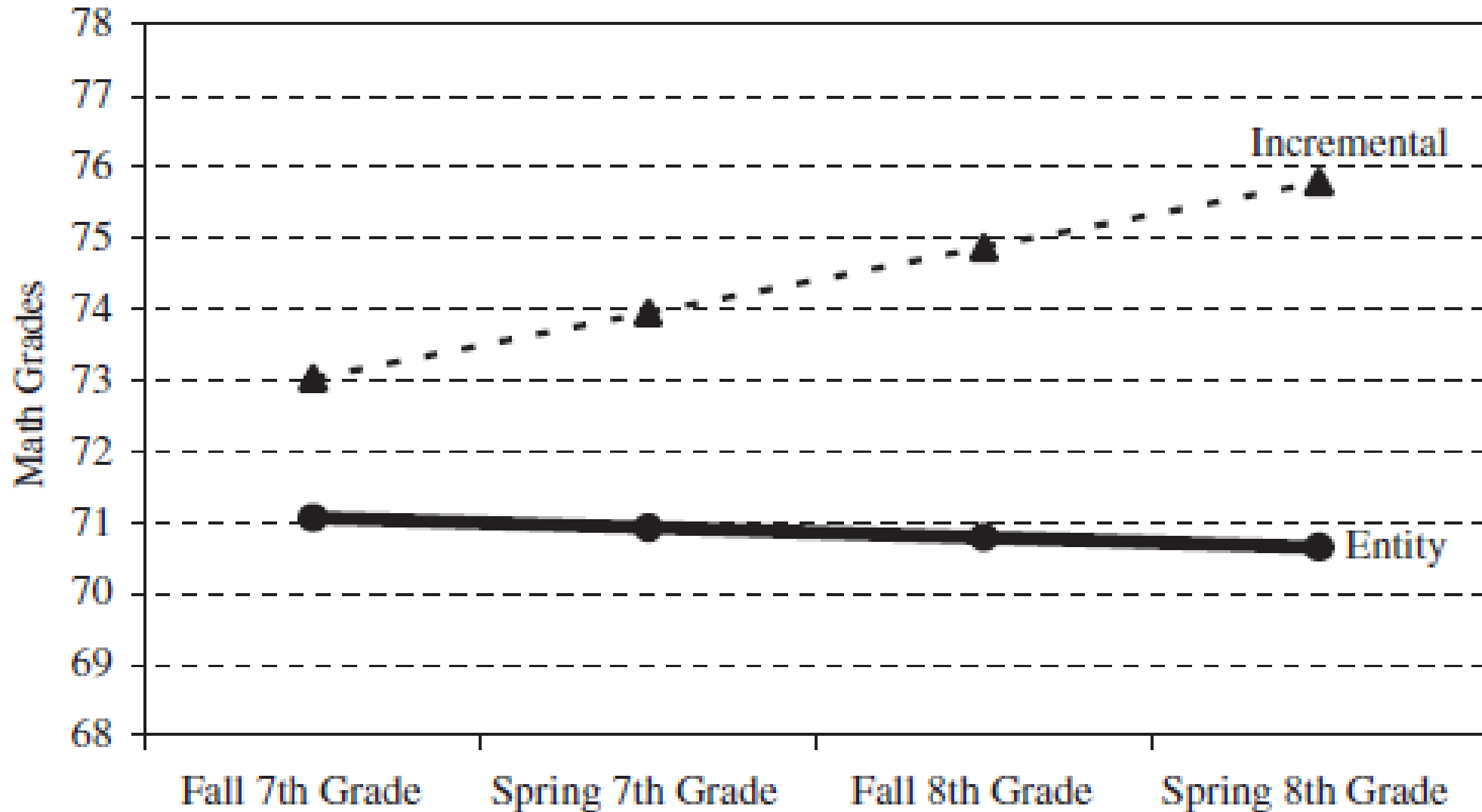
En plena batalla

- División de tareas
- Intenciones de implementación
- Recompensas inmediatas
- Feedback frecuente
- Contratos conductuales



Borgstein J., Grootendorst C. (2002): "Clinical picture: half a brain". *Lancet* 359(9305): 473.

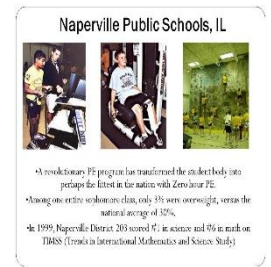
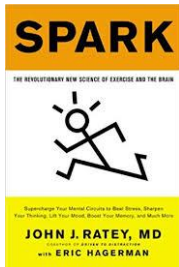
Mentalidad de crecimiento

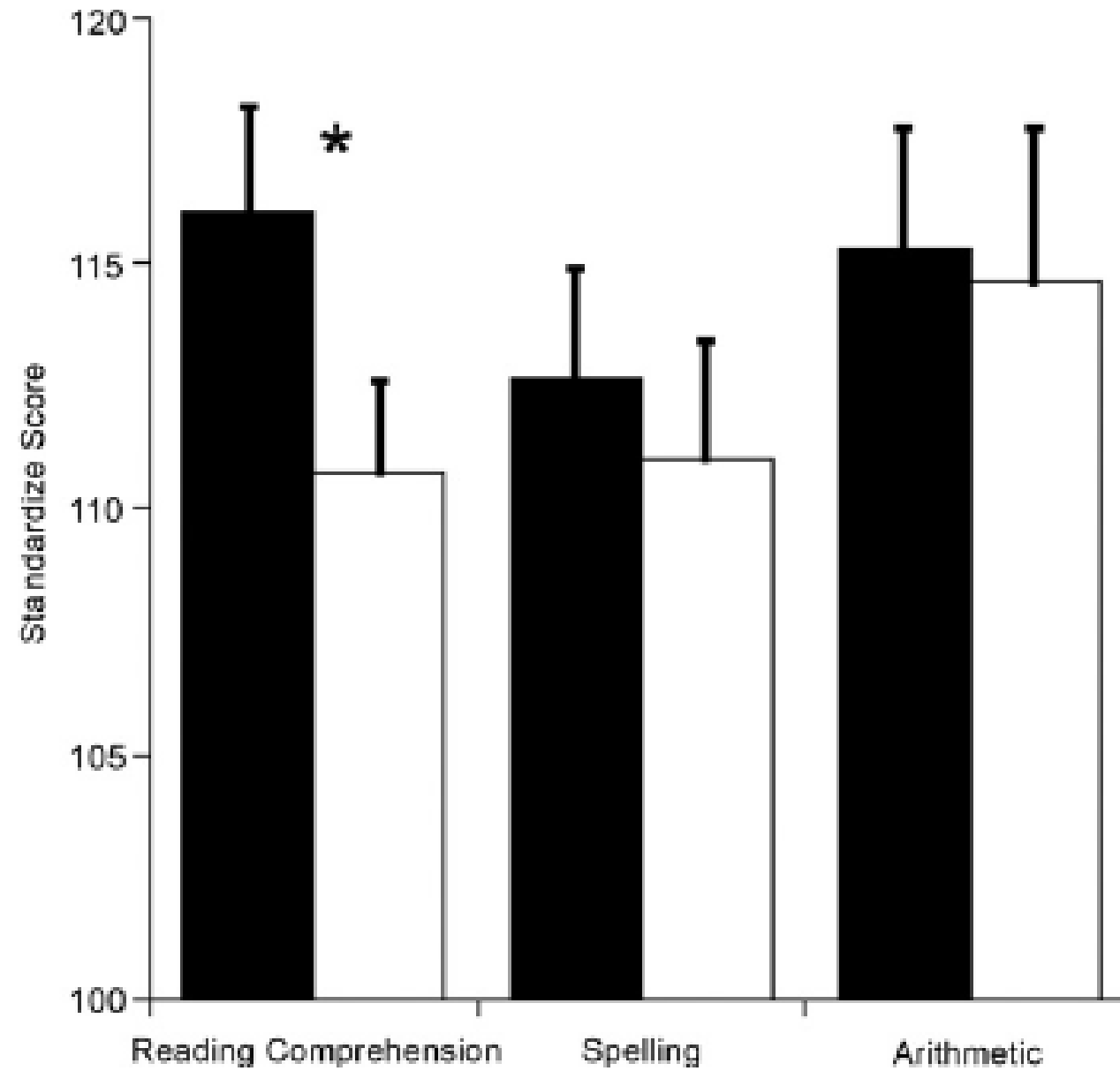


Blackwell, L. S. et al. (2007): "Implicit theories of intelligence predict achievement across an adolescent transition: a longitudinal study and an intervention". *Child Development* 78 (1), 246-263.

Salir a correr unos minutos puede producir los mismos efectos que una pequeña dosis de los fármacos Concerta o Prozac, pero provocando un mayor equilibrio entre neurotransmisores y, por supuesto, de forma más natural y saludable.

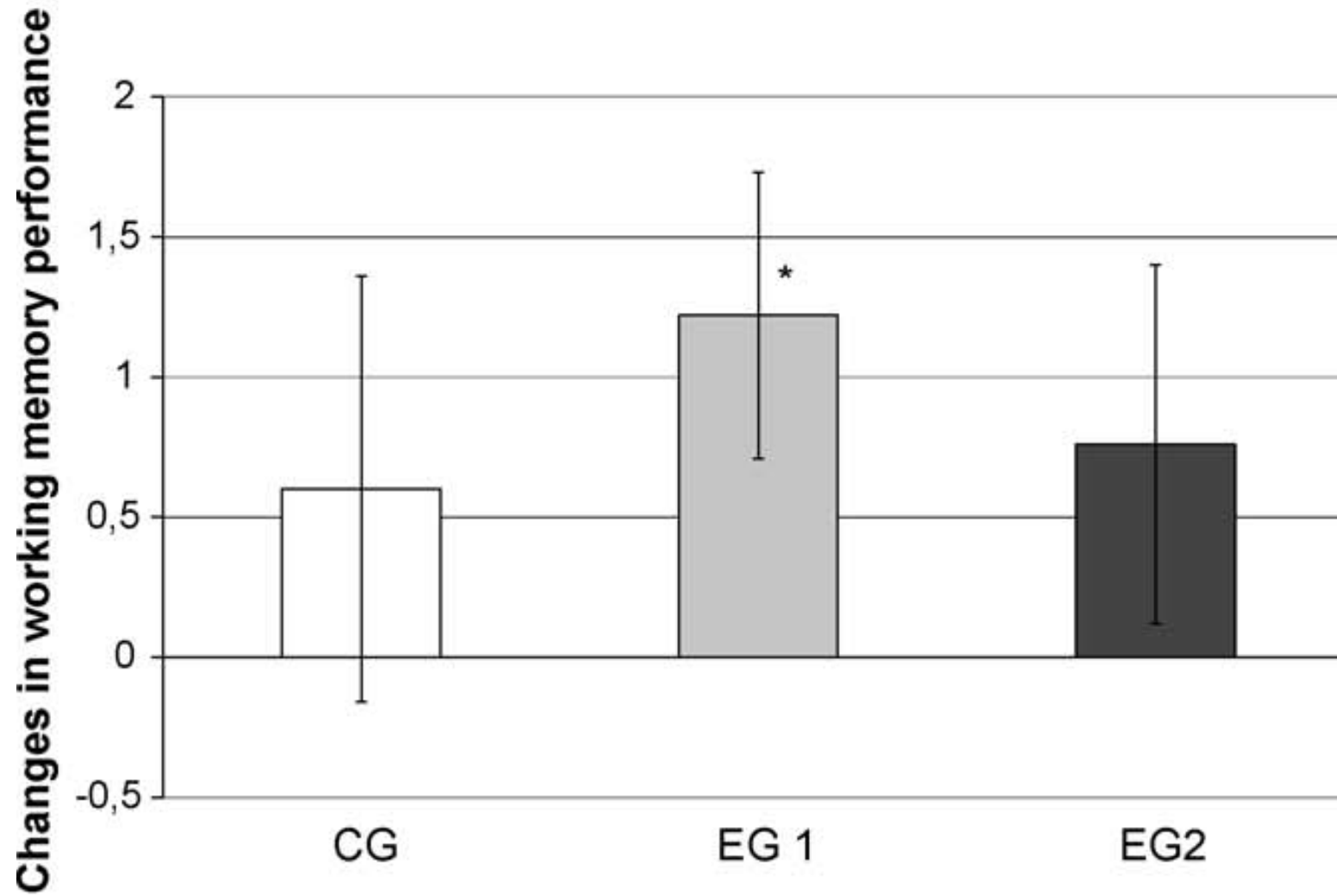
John Ratey. *Spark! The revolutionary new science of exercise and the brain.*



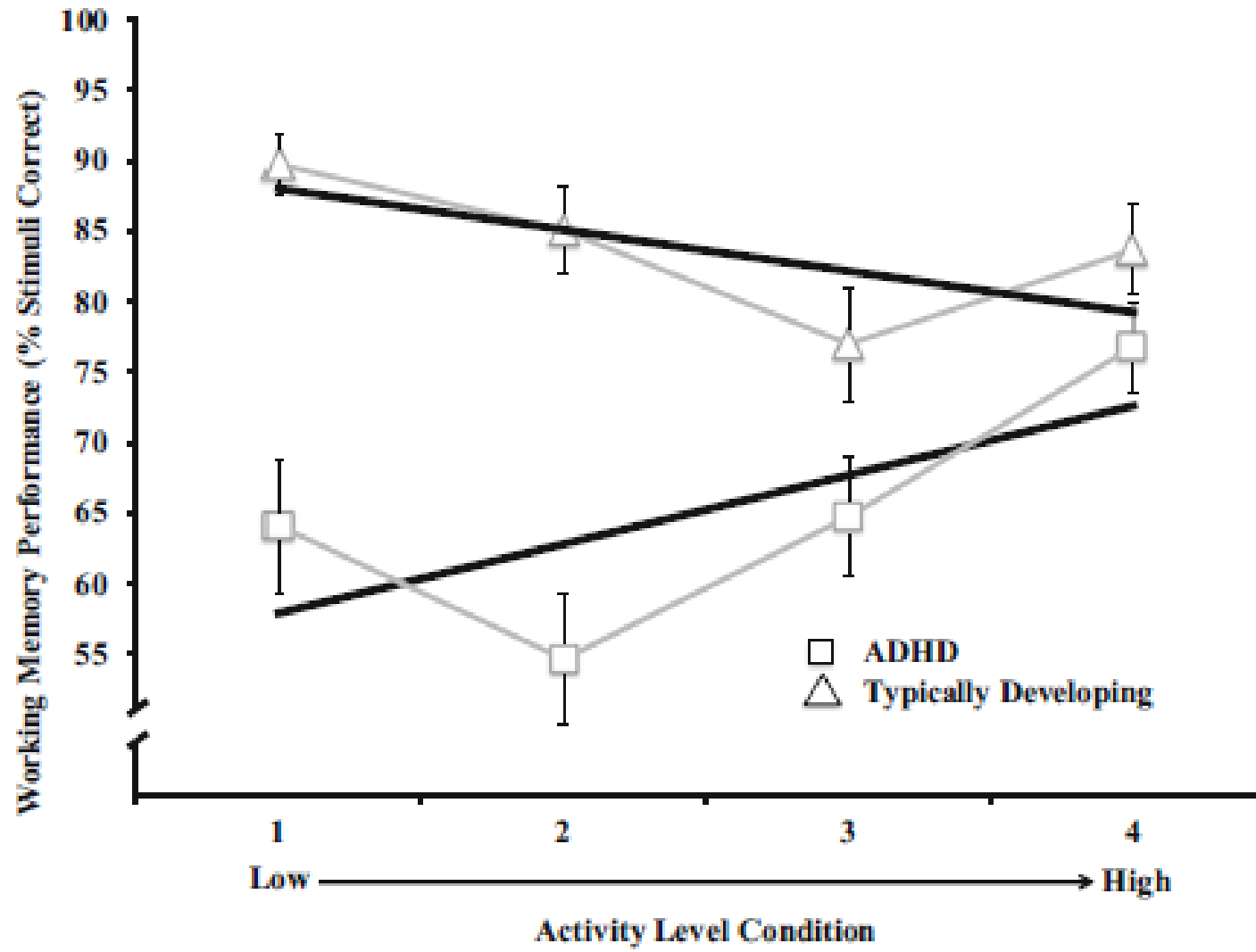


. Hillman C. et al. (2009): "The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children". Neuroscience 159, 1044-1054.

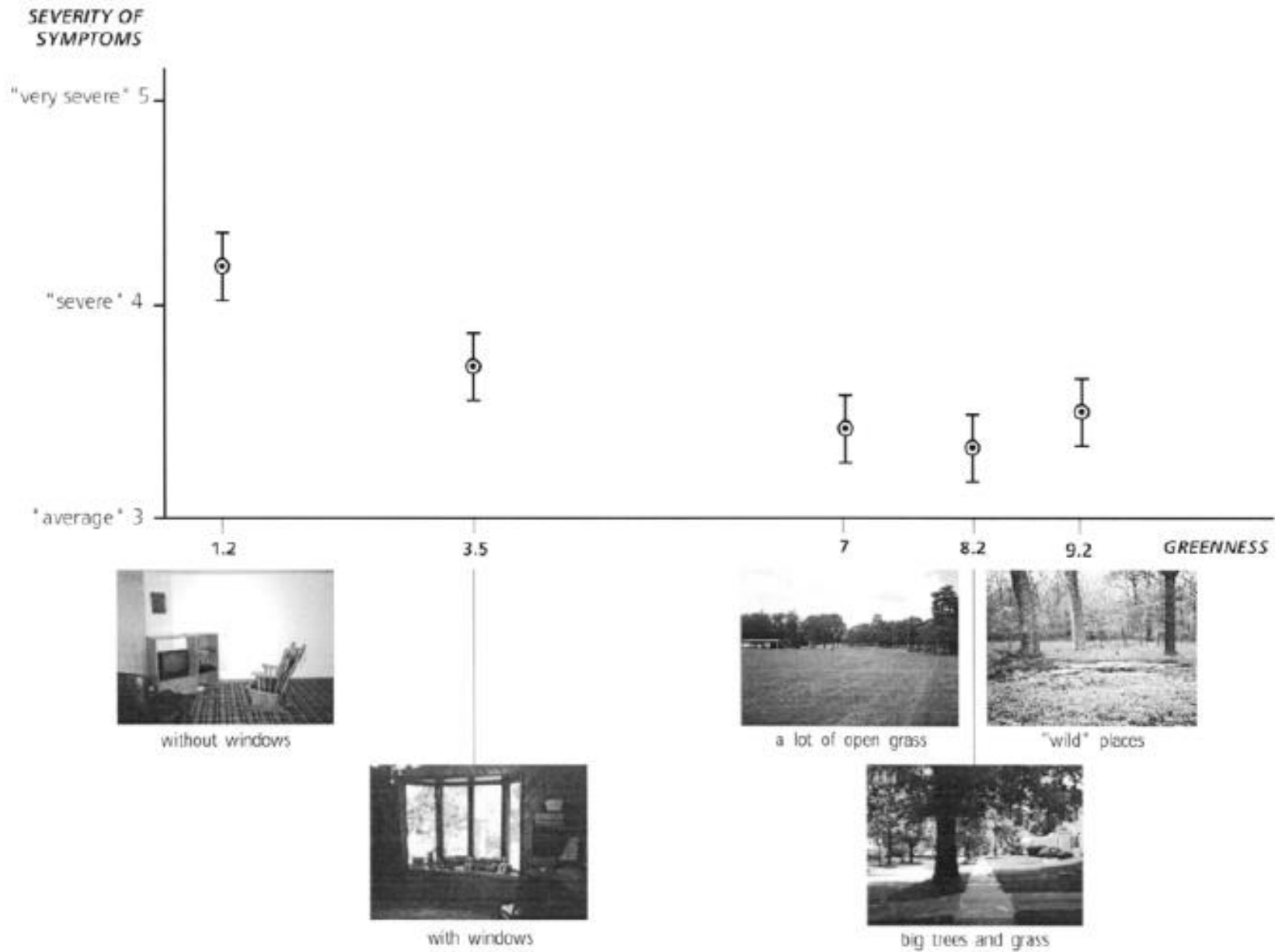
Estrés y memoria de trabajo



Manipulación



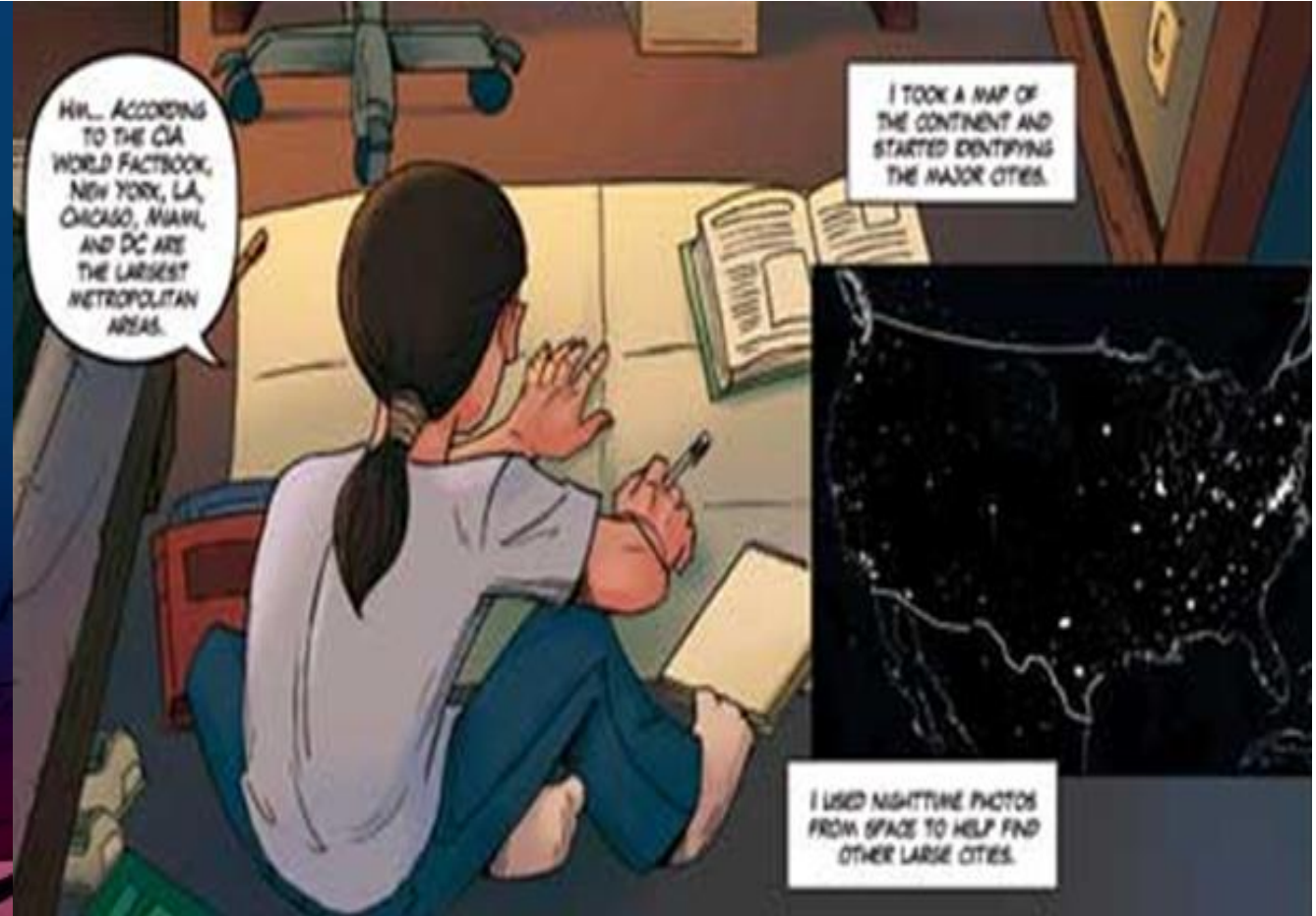
Naturaleza



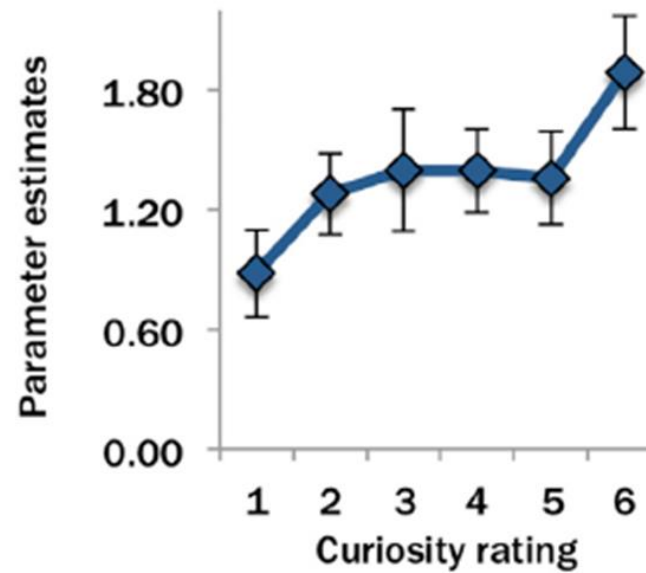
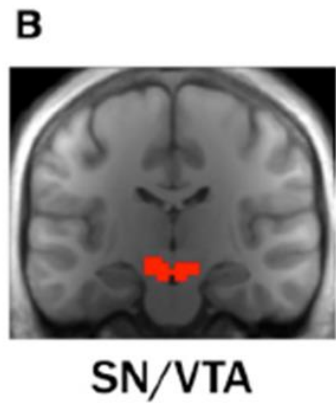
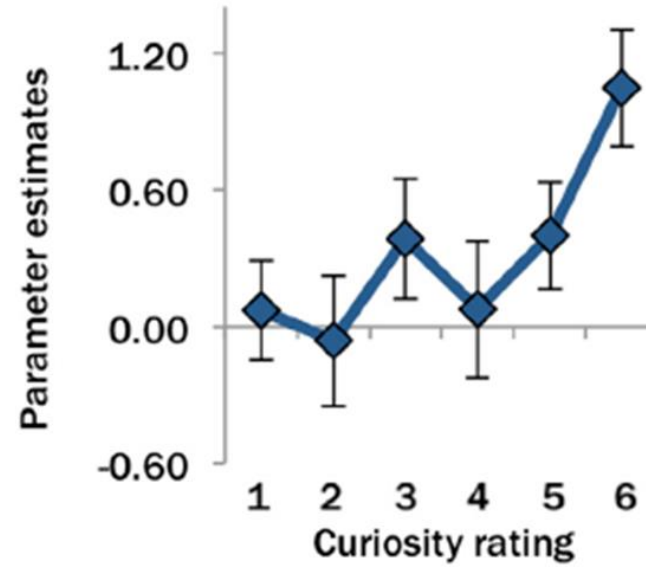
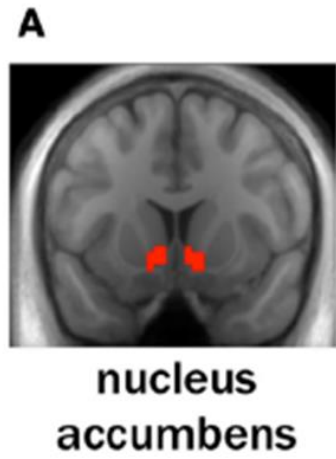
Patios escolares

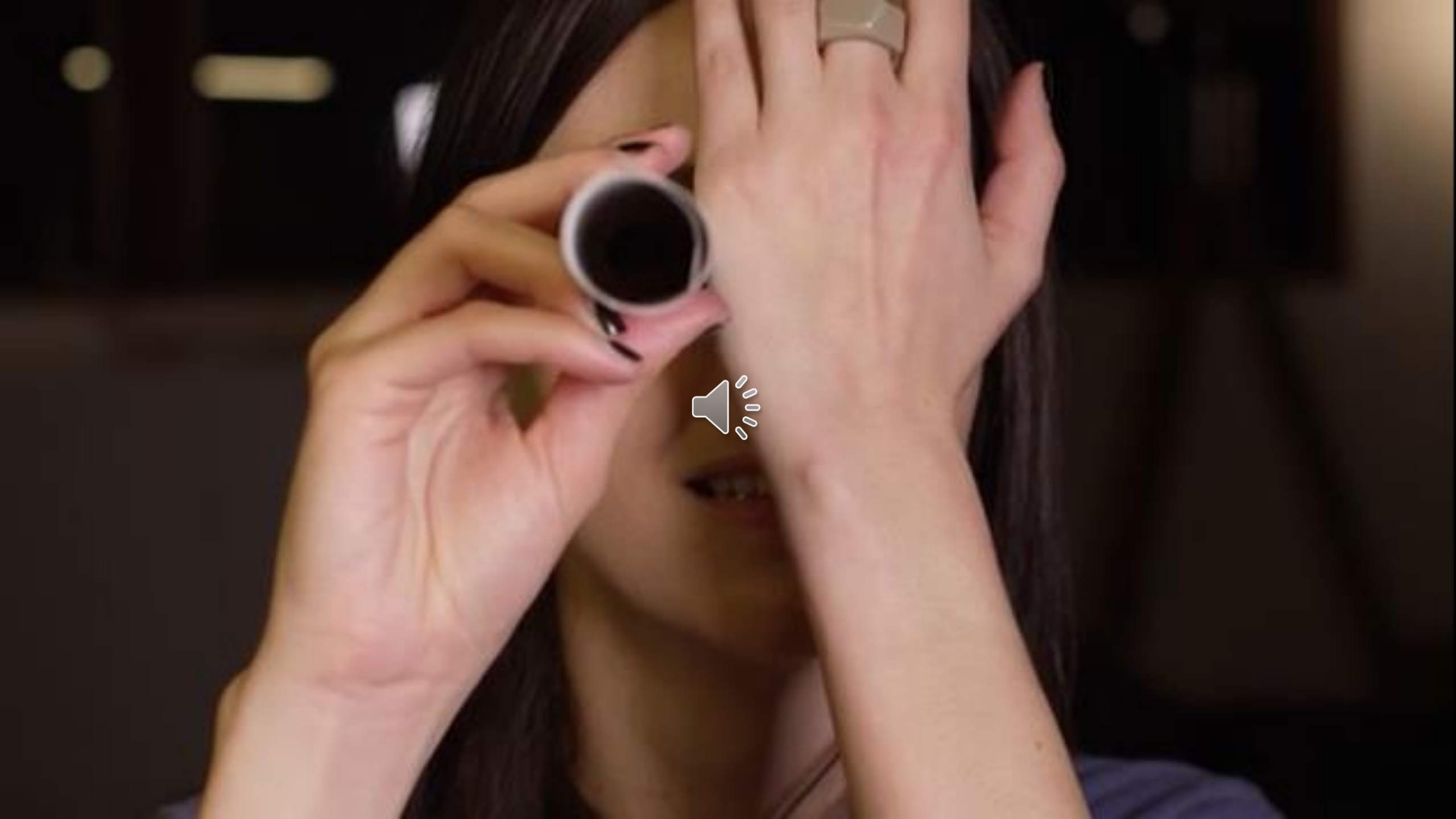


Gamificación

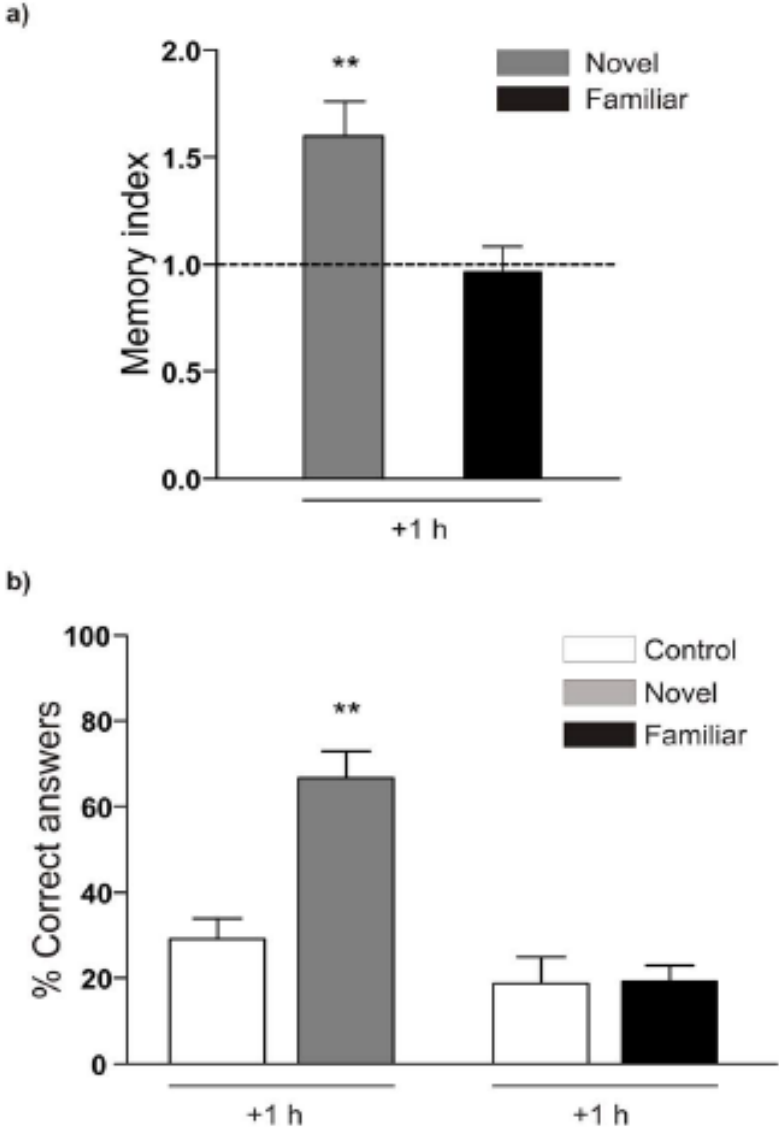


Motivación





'Efecto sorpresa'



Ballarini F. et al. (2013): "Memory in elementary school children is improved by an unrelated novel experience". PLoS One 8(6):e66875.

Proyectos ApS (Aprendizaje-servicio)



Docencia compartida



Ranking de Hattie 1-10

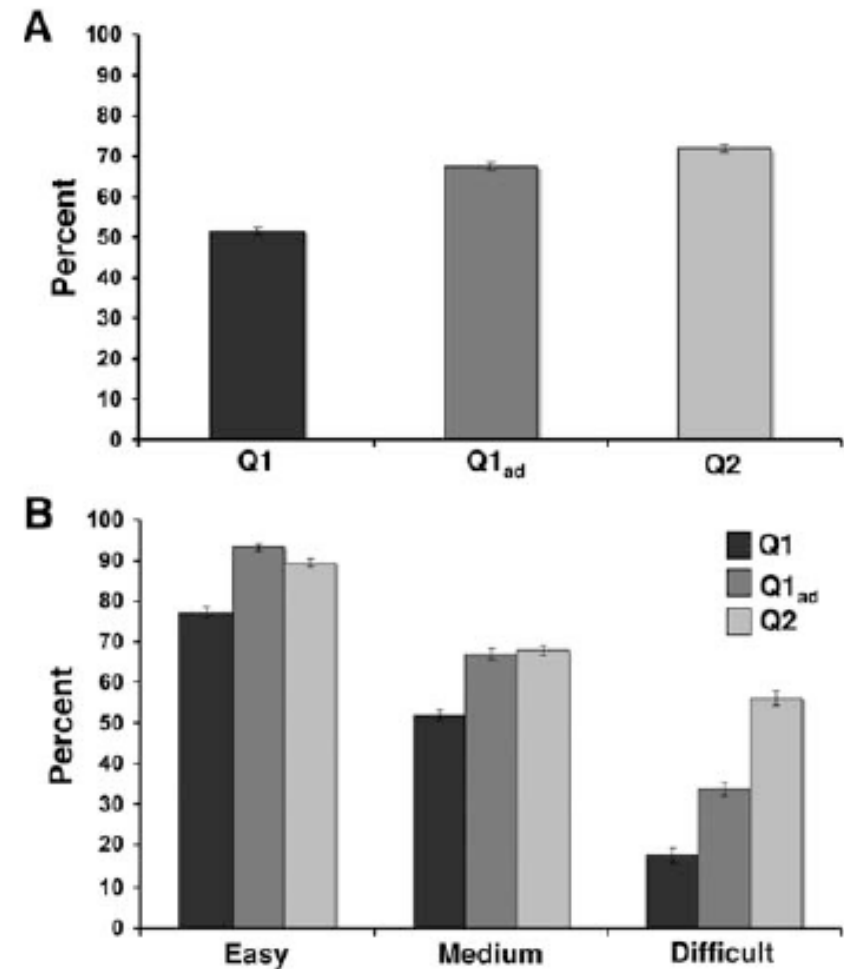
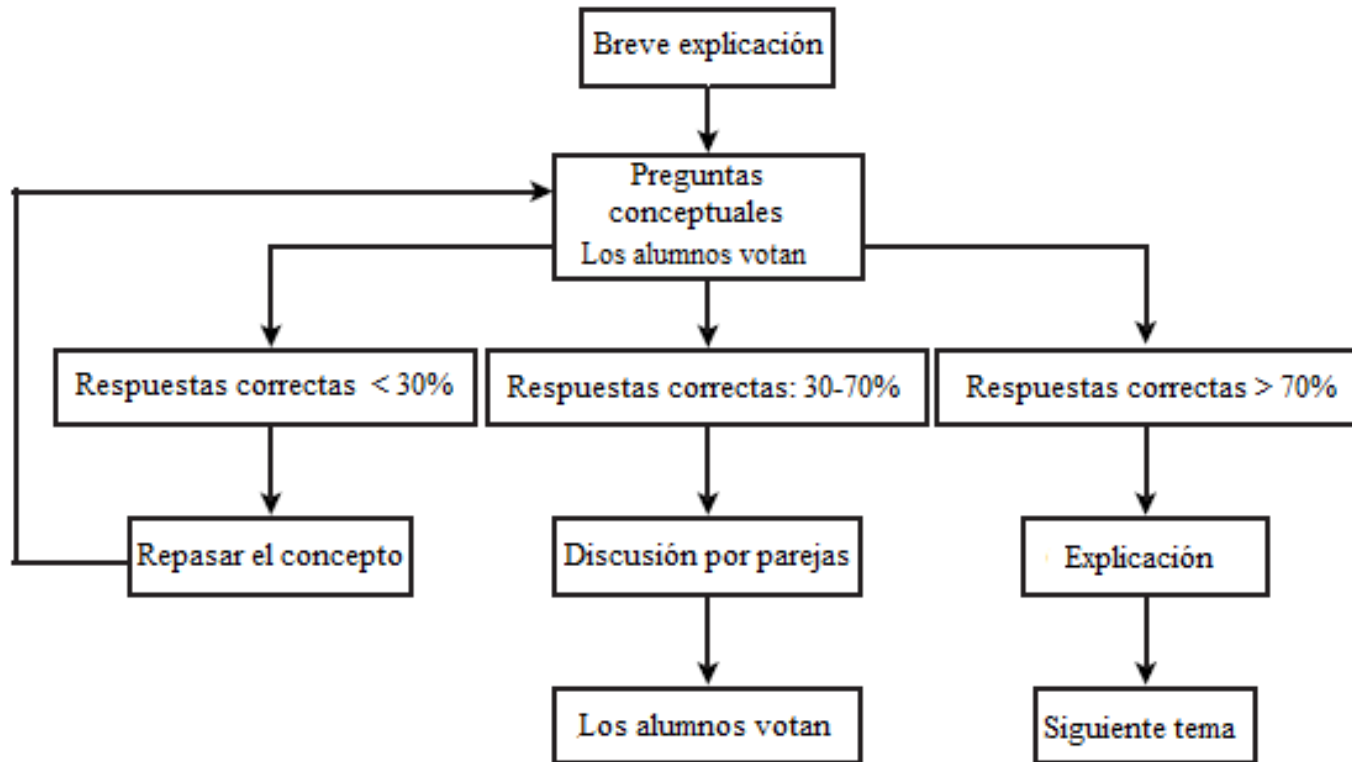
Source of Influence	Aspect	Factor	Effect Size
Teaching: Student Learning Strategies	Learning Strategies	Strategy to integrate with prior knowledge	0.93
Student	Prior Knowledge & Background	Prior ability	0.94
Curricula	Other Curricula Programs	Conceptual Change Programs	0.99
Teaching: Teaching/Instruction Strategies	Teaching/Instruction Strategies	Jigsaw method	1.2
Student	Prior Knowledge & Background	Piagetian programs	1.28
Teaching: Teaching/Instruction Strategies	Strategies Emphasising Learning Intentions	Cognitive task analysis	1.29
Teaching: Teaching/Instruction Strategies	Strategies Emphasising Feedback	Response to Intervention	1.29
Student	Prior Knowledge & Background	Self-reported grades	1.33
School	Leadership	Collective teacher efficacy	1.57
Teacher	Teacher Attributes	Teacher estimates of student achievement	1.62

Trabajo cooperativo

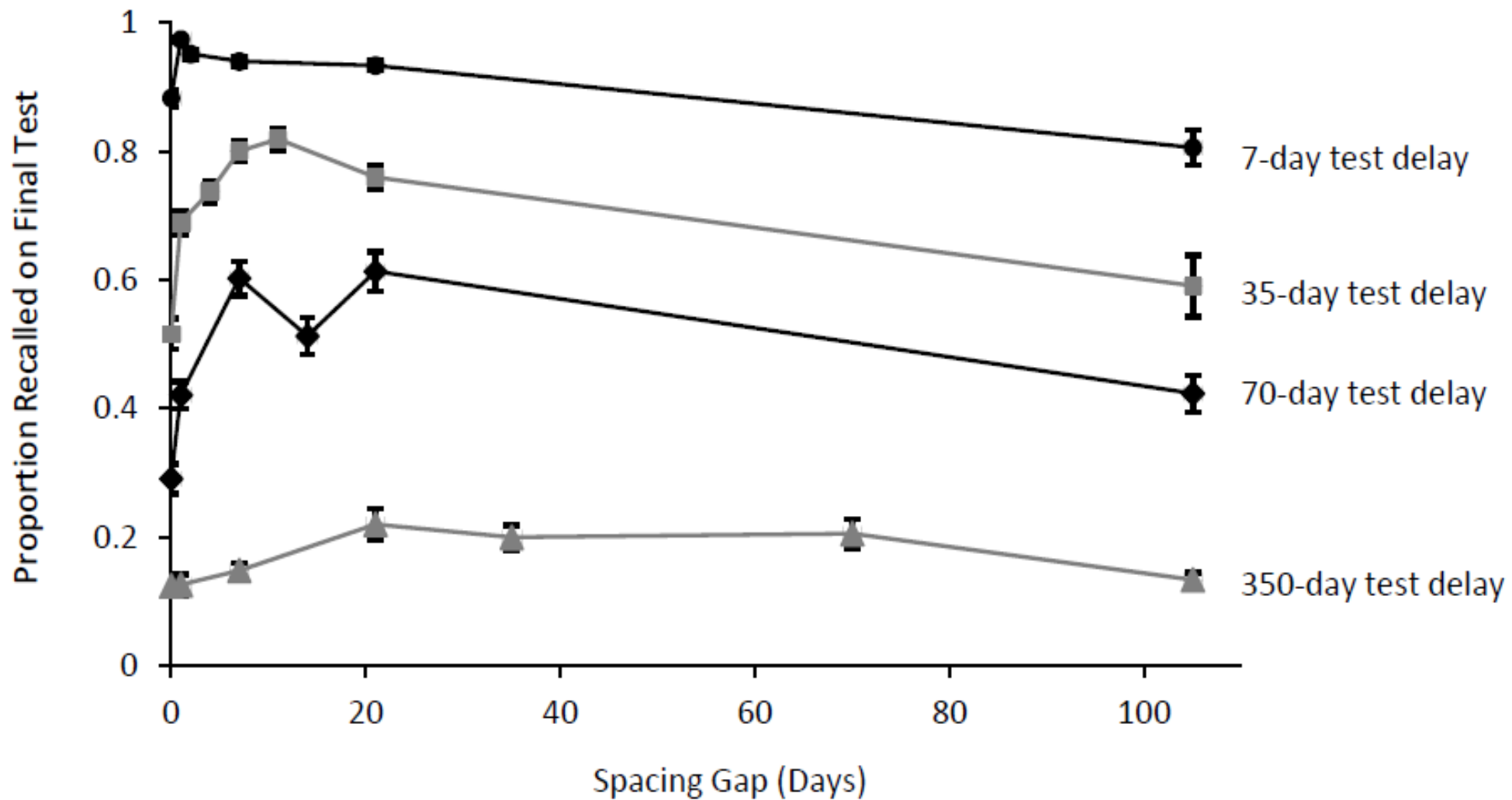




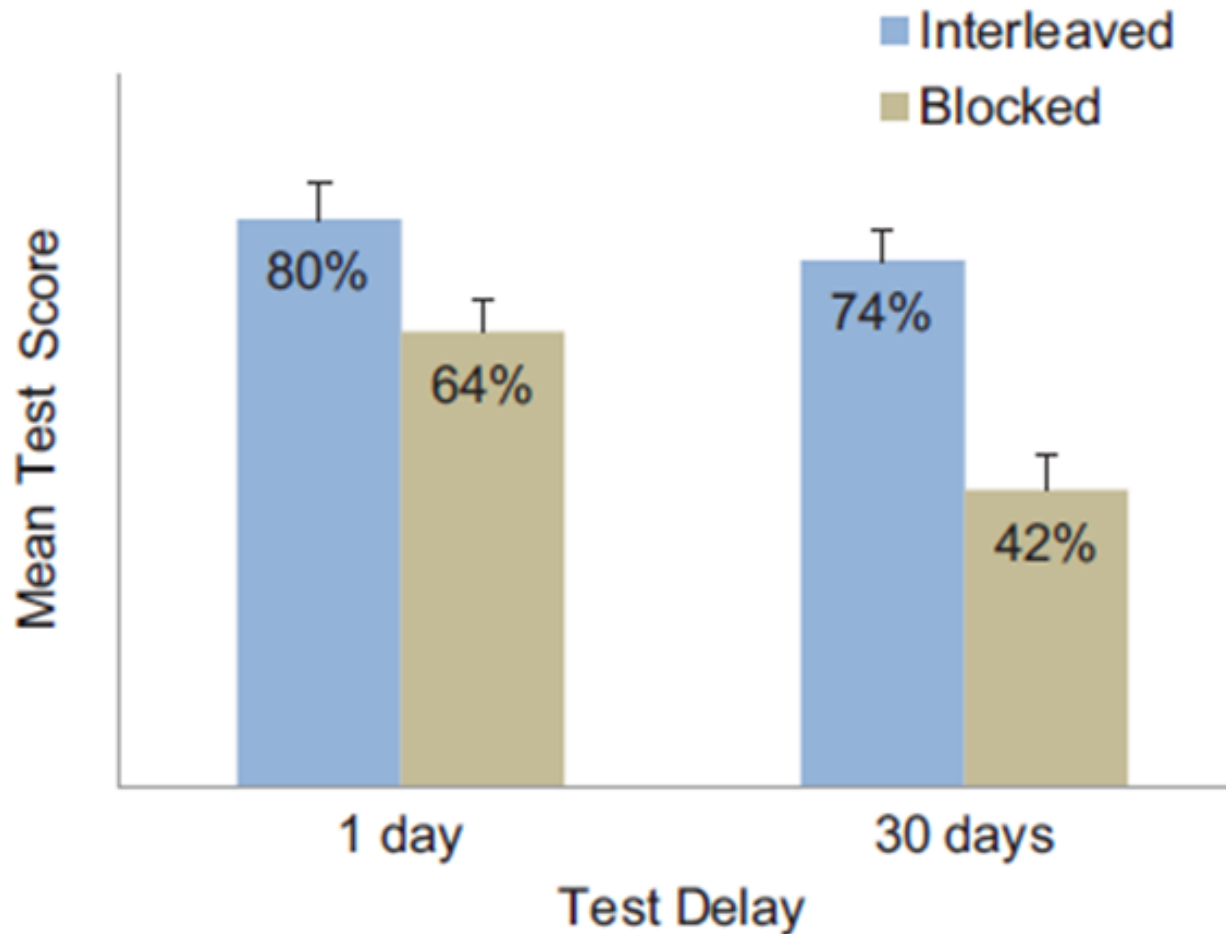
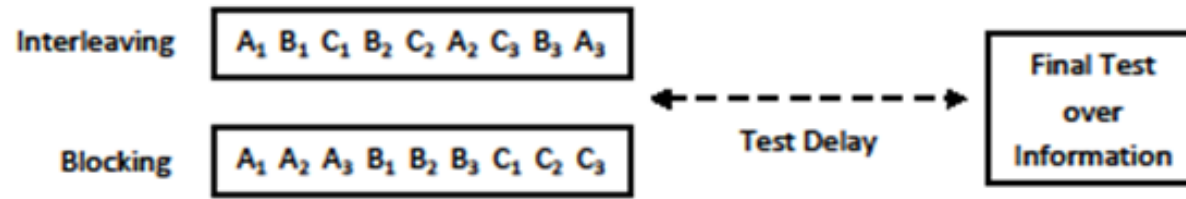
Peer instruction



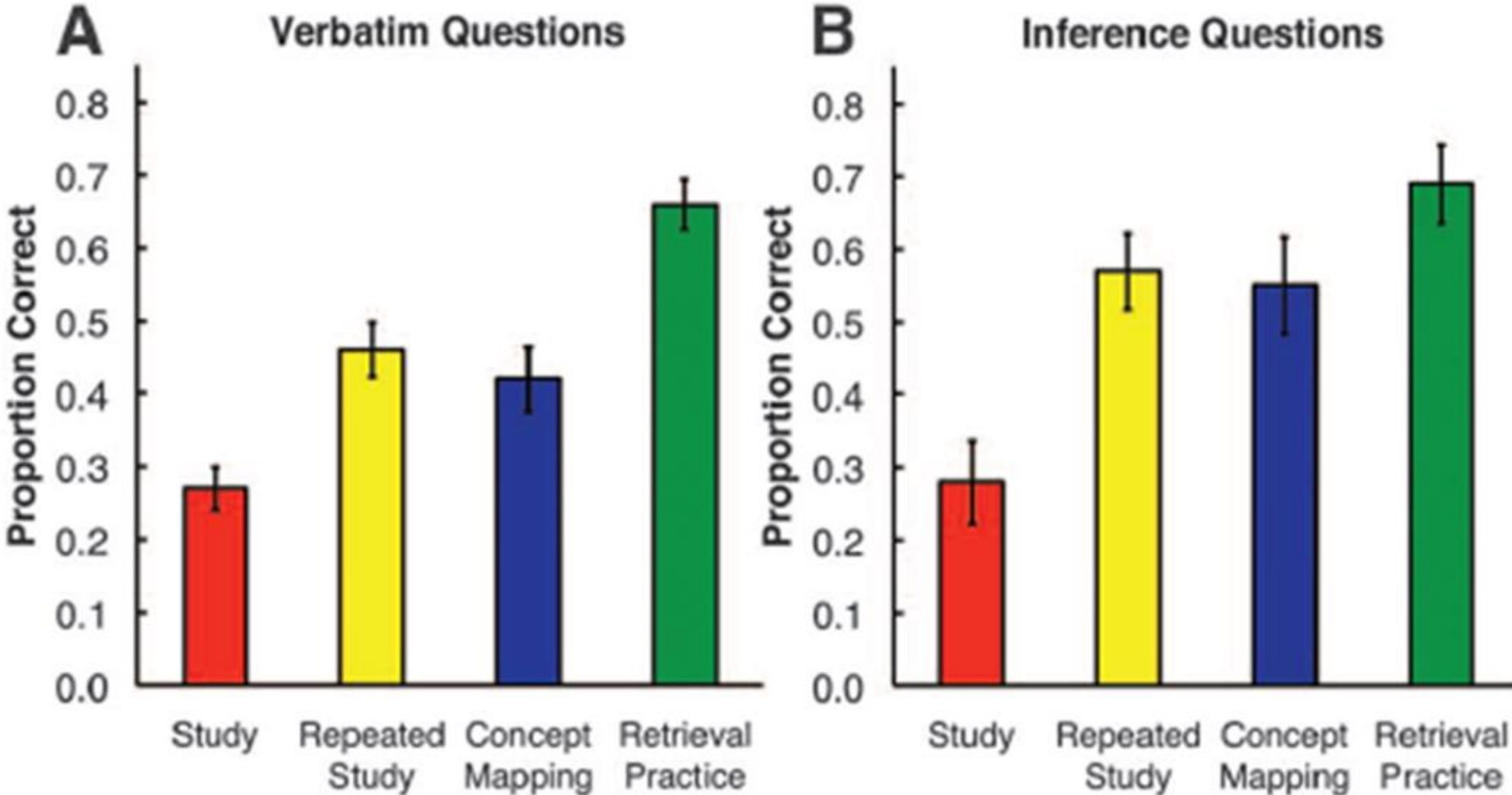
Práctica espaciada



Práctica intercalada

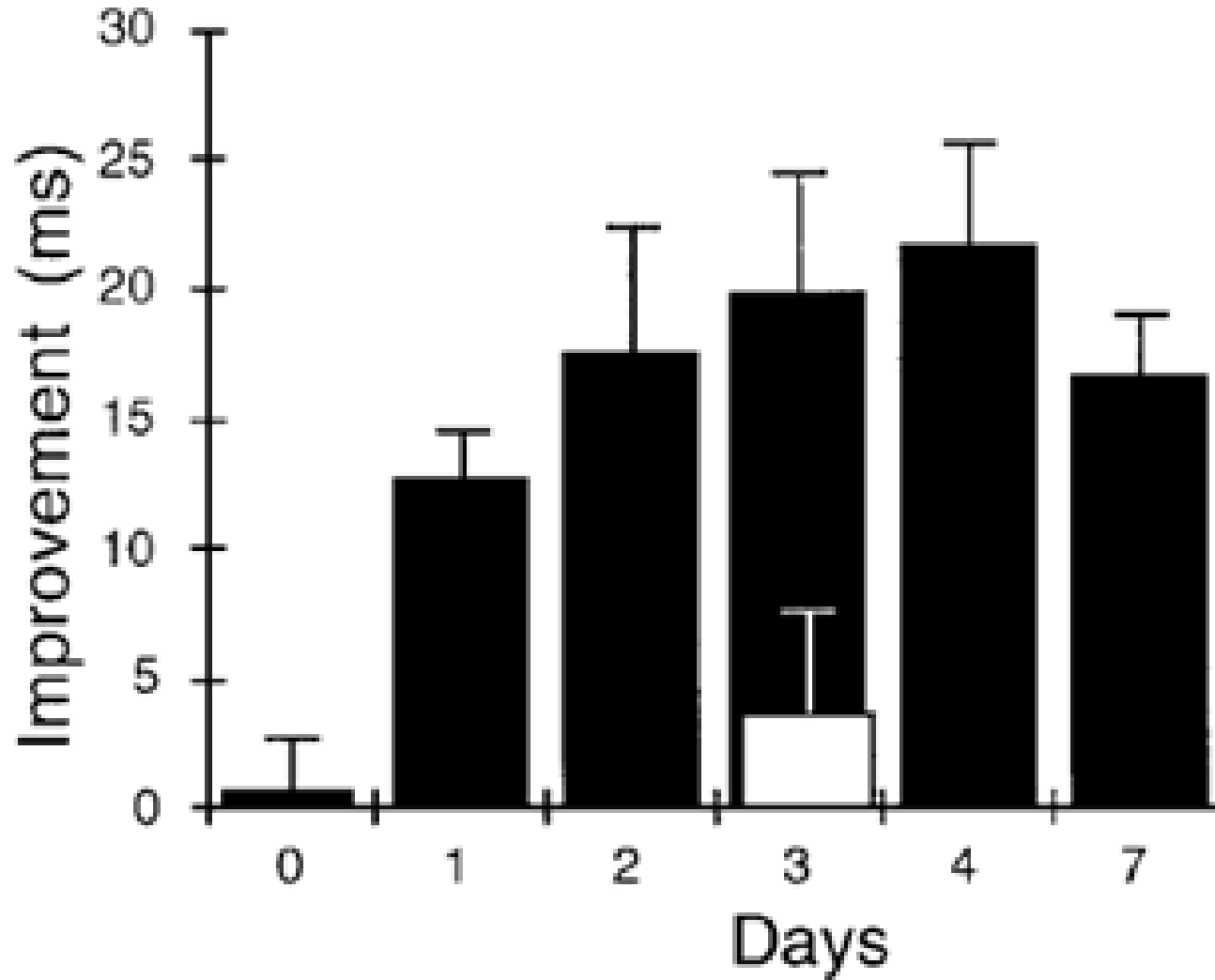


Efecto del test (práctica del recuerdo)



Karpicke J. y Blunt J. (2011): "Retrieval practice produces more learning than elaborative studying with concept mapping". Science, 311, 772-775

Sueño



Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness

Anne-Marie Chang^{a,b,1,2}, Daniel Aeschbach^{a,b,c}, Jeanne F. Duffy^{a,b}, and Charles A. Czeisler^{a,b}

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Edited by Joseph S. Takahashi, Howard Hughes Medical Institute, University of Texas Southwestern Medical Center, Dallas, TX, and approved November 26, 2014 (received for review September 24, 2014)

In the past 50 y, there has been a decline in average sleep duration and quality, with adverse consequences on general health. A representative survey of 1,508 American adults recently revealed that 90% of Americans used some type of electronics at least a few nights per week within 1 h before bedtime. Mounting evidence from countries around the world shows the negative impact of such technology use on sleep. This negative impact on sleep may be due to the short-wavelength-enriched light emitted by these electronic devices, given that artificial-light exposure has been shown experimentally to produce alerting effects, suppress melatonin, and phase-shift the biological clock. A few reports have shown that these devices suppress melatonin levels, but little is known about the effects on circadian phase or the following sleep episode, exposing a substantial gap in our knowledge of how this increasingly popular technology affects sleep. Here we compare the biological effects of reading an electronic book on a light-emitting device (LE-eBook) with reading a printed book in the hours before bedtime. Participants reading an LE-eBook took longer to fall asleep and had reduced evening sleepiness, reduced melatonin secretion, later timing of their circadian clock, and reduced next-morning alertness than when reading a printed book. These results demonstrate that evening exposure to an LE-eBook phase-delays the circadian clock, acutely suppresses melatonin, and has important implications for understanding the impact of such technologies on sleep, performance, health, and safety.

sleep | chronobiology | phase-shifting | digital media | electronics

The use of electronic devices for reading, communication, and entertainment has greatly increased in recent years. Greater portability, convenience, and ease of access to reading materials

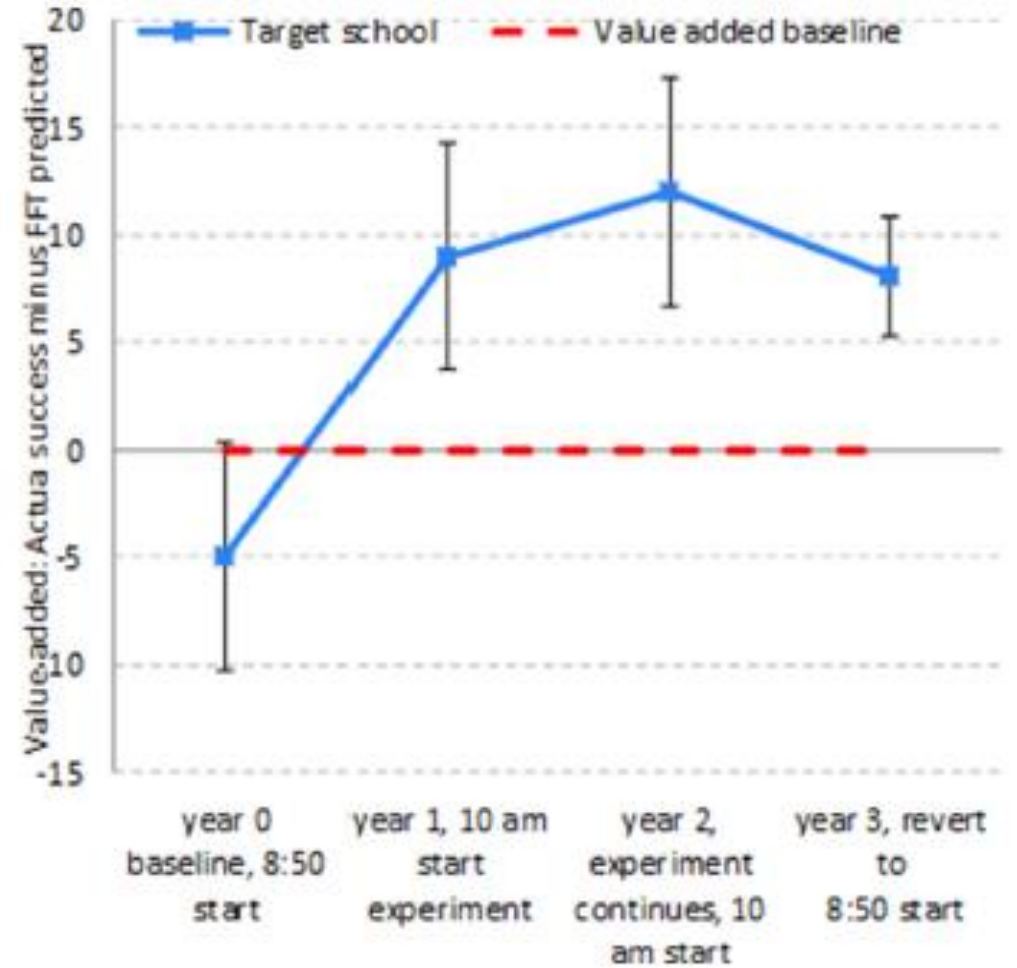
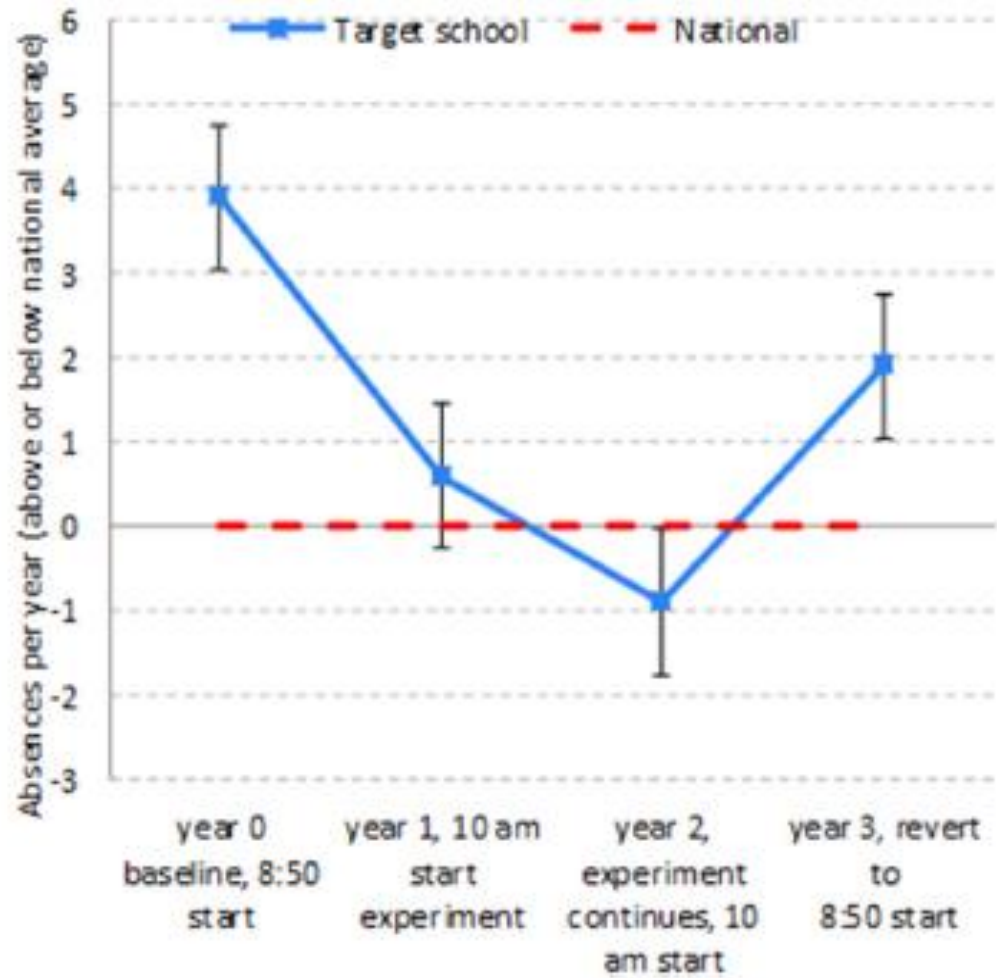
sleep, and subjective and objective measures of sleepiness both in the evening while reading and the following morning.

Results

Twelve healthy young adults (mean \pm SD: 24.92 \pm 2.87 y; six women) completed a 14-d inpatient protocol. The randomized, crossover design (shown in Fig. 1) consisted of two conditions: (i) reading an LE-eBook in otherwise very dim room light for \sim 4 h before bedtime for five consecutive evenings, and (ii) reading a printed book in the same very dim room light for \sim 4 h before bedtime for five consecutive evenings. All participants completed both reading conditions but were randomized to the order. Hourly blood samples were collected during portions of

Significance

The use of light-emitting electronic devices for reading, communication, and entertainment has greatly increased recently. We found that the use of these devices before bedtime prolongs the time it takes to fall asleep, delays the circadian clock, suppresses levels of the sleep-promoting hormone melatonin, reduces the amount and delays the timing of REM sleep, and reduces alertness the following morning. Use of light-emitting devices immediately before bedtime also increases alertness at that time, which may lead users to delay bedtime at home. Overall, we found that the use of portable light-emitting devices immediately before bedtime has biological effects that may perpetuate sleep deficiency and disrupt circadian rhythms, both of which can have adverse impacts on performance, health, and safety.



Kelley P. et al. (2017): "Is 8:30 a.m. Still Too Early to Start School? A 10:00 a.m. School Start Time Improves Health and Performance of Students Aged 13-16". *Frontiers in Human Neuroscience* Dec 8;11:588





¿Brindas por el cambio?

