Tens of millions of students are filing back into classrooms, bringing with them a long list of hopes and concerns related to the academic year ahead. Besides the inevitable adjusting to new social and learning routines, students, as well as their families, teachers, and school administrators this year will be faced with challenges related to early start times, new peer groups, pandemic-related learning losses, and more. This collection of research published in the journals of the Association for Psychological Science (APS) in 2022 and 2023 may provide some insights.

**For Whom (and When) the Time Bell Tolls: Chronotypes and the Synchrony Effect**

*For Whom the School Bells Toll: New Psychological Research for the New Academic Year*

August 24, 2023

Sleep-deprived teenagers aren’t the only ones who still feel groggy when the school day starts—and for good reason. Attention and memory are compromised at off-peak times of the day. According to the synchrony effect, performance in several cognitive areas is optimal when a person’s performance times
align with their peak circadian arousal (i.e., their chronotype). Circadian rhythms and chronotypes vary across individuals—in morning chronotypes, arousal rises and peaks early in the day, but in evening chronotypes it rises and peaks in the afternoon or early evening—and vary with age (e.g., older adults appear likely to have morning chronotypes). May and colleagues suggest that failure to consider the synchrony effect may be a factor in issues such as school timing, replication difficulties, and assessing intellectual disabilities associated with apparent cognitive declines related to aging.

**Adding Up Peer Beliefs: Experimental and Field Evidence on the Effect of Peer Influence on Math Performance**

Sherry Jueyu Wu and Xiqian Cai
*Psychological Science*

The gender–math stereotype refers to the prevailing notion that men are inherently better than women at learning mathematics. Unfortunately, when peers and classmates express such gendered beliefs, they can actually hurt girls’ performance in math, this research suggests. Wu and Cai studied middle-school classes where more classmates reported believing that boys are innately better than girls at learning math. Not only did girls perform worse in math and boys better, but this peer exposure also increased students’ likelihood of believing the gender–math stereotype, increased the perceived difficulty of math, and reduced girls’ aspirations. The researchers obtained similar effects with college students and showed that the effect was both immediate and long-term.

**The Impact of School Closures on Learning and Mental Health of Children: Lessons From the COVID-19 Pandemic**

Deni Mazrekaj and Kristof De Witte
*Perspectives on Psychological Science*

Just how extensive was the impact of school closures during the COVID-19 pandemic on children’s learning and mental health? Reviewing the relevant literature, Mazrekaj and De Witte found that the scale and length of school closures likely resulted in a substantial deficit in children’s learning and a deterioration in children’s mental health. Their policy recommendations for ensuring children’s learning and psychosocial development in the future include paying more attention to students from marginalized groups, implementing evidence-informed and personality-tailored mental-health and social- and emotional-learning programs in schools, and avoiding generational labels.

**The Temporal Dynamics of Brain-to-Brain Synchrony Between Students and Teachers Predict Learning Outcomes**

Ido Davidesco et al.
*Psychological Science*

For good and bad alike, the social dynamics between students and teachers can profoundly impact students’ engagement, learning, and well-being. The groups’ brain-to-brain synchrony—or lack thereof—might be similarly impactful, this research suggests. During a lecture, Davidesco and colleagues recorded electroencephalography (EEG) data from nine groups—each with four students and a teacher.
They found that students whose brain responses were more similar to those of other students and to their teacher showed better performance in immediate and delayed tests. Moreover, students answered more questions correctly when the questions corresponded to specific lecture segments in which their brain-to-brain synchrony was higher. The findings also highlight the potential benefits of collecting brain data from learners in ecologically valid settings.

**Growth-Mindset Intervention Delivered by Teachers Boosts Achievement in Early Adolescence**

**Tenelle Porter et al.**  
*Psychological Science*

When teachers provide growth-mindset interventions, their students’ real-world grades can improve, this research suggests. Porter and colleagues tested a teacher-delivered intervention for U.S. adolescents in Grades 6 and 7 (1,996 students and 50 teachers) that was designed to both impart growth-mindset beliefs and create a supportive classroom environment where those beliefs could flourish. The intervention improved the grades of struggling students in the target class by 0.27 standard deviations, or 2.81 grade percentage points. The effects were largest for students whose teachers endorsed fixed mindsets before the intervention.

**Interleaving Retrieval Practice Promotes Science Learning**

**Faria Sana and Veronica X. Yan**  
*Psychological Science*

Mixing up topics on quizzes might be a cost-effective strategy to promote classroom learning. Across 4 weeks, students in Grades 9 through 12 took a weekly quiz in their science courses. Questions were either blocked by concept (e.g., AAABBBCCCC) or interleaved with different concepts (e.g., ABCABCABC). On a final test, taken one month after the final quiz, students performed better on items that had been on interleaved quizzes than on concepts that had been on blocked quizzes. Moreover, they performed better on concepts that had been quizzed than on concepts that had not, replicating the known benefits of retrieval practice.

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