

New teaching tactics? Verbal and spatial skills may be inextricably linked in the brain

Conventional testing can underestimate a student's learning ability. Sociocultural barriers, test anxiety and differences in rates of brain development can skew results. In principle, neuroscience tools that allow observation of brain activity might better characterize learning gains. But neuroscience and education have not always formed fruitful partnerships.

[New research](#) that more profitably pairs the two fields suggests that when students use spatial skills in the classroom, the benefits extend beyond spatial understanding to other kinds of thinking, such as mentally deciphering a problem using words.

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Because it's unethical to shoehorn students into classes they don't want to take—for research, anyway—the investigators took a different tactic. Students had the option to take a “[Geospatial Semester](#)” course in which they built and assessed geography-based data sets using digital resources. The researchers matched students who chose the geospatial course to peers who selected a different but equally challenging science course, creating two groups that were as similar as possible.

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The students in the geospatial class started out with lower reasoning and similar spatial thinking scores to their counterparts in the other class. But after the geospatial course ended, the students in that group had improved significantly more than their peers on most of the measures.

The most intriguing result for the researchers supported the mental model theory: these students' improvements in verbal reasoning tracked with their improvements on the spatial tests, which suggests that where spatial thinking sharpened, so did verbal reasoning.

[This is an excerpt. Read the original post here.](#)