

Research: College undergrads study ineffectively on computers

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In the space of one generation, college students have gone from studying with highlighters and wire notebooks to laptops, netbooks and, now, iPads.

But despite the prevalence of technology on campuses, a new study indicates that computers alone can't keep students from falling into their same weak study habits from their ink-and-paper days.

"Our study showed that achievement really takes off when students are prompted to use more powerful strategies when studying <u>computer</u> materials," said the University of Nebraska-Lincoln's Ken Kiewra, an expert in study methods and one of the authors of the study.

The research, published this week in The *Journal of Educational Psychology*, found that students tend to study on computers as they would with traditional texts: They mindlessly over-copy long passages verbatim, take incomplete or linear notes, build lengthy outlines that make it difficult to connect related information, and rely on memory drills like re-reading text or recopying notes.

Meanwhile, <u>undergraduates</u> in the study scored 29 to 63 percentage points higher on tests when they used study techniques like recording complete notes, creating comparative charts, building associations, and crafting practice questions on their screens.

Kiewra, a professor of educational psychology, calls the method SOAR:



Selecting key lesson ideas, organizing information with comparative charts and illustrations, associating ideas to create meaningful connections, and regulating learning through practice. It complements how the brain processes information, he said.

"Learning occurs best when important information is selected from less important ideas, when selected information is organized graphically, when associations are built among ideas and when understanding is regulated through self-testing," Kiewra said.

The study was built upon two experiments. In the first, undergraduates were questioned about how they study computer-based materials. In the second, they read an online text and then were asked to create on their computers some study materials that reflected their preferred (and likely weak) way to study. Or, they were prompted to use all or parts of SOAR study methods.

The latter group of studiers scored higher on tests measuring fact and relationship learning than the first group.

Kiewra authored the new study with former UNL graduate student Dharmananda Jairam, at Penn State University, and said the study shows that as undergraduates spend more and more study time on computers, it will be vital for them to learn better ways of processing and then making use of information.

Teachers and designers of instructional software may want to take note of the study's findings, as well.

"Teachers need to help students dispel crippling studying myths such as highlighting, outlining and rehearsal, and instead teach them strategies that help them succeed," Kiewra said.



Provided by University of Nebraska-Lincoln

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