

Study provides foundation for the future of digital higher education

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George Siemens, executive director of the UT Arlington LINK Research Lab.
Credit: UT Arlington

A new, comprehensive metastudy of the role technology plays in higher education urges universities of tomorrow to capitalize on technologies that effectively support student learning, to embrace blended learning environments, and to customize degree programs to serve the needs of

students in a digital age.

George Siemens, executive director of The University of Texas at Arlington's Learning Innovation and Networked Knowledge Lab, is the lead author of "Preparing for the Digital University: A Review of the History and Current State of Distance, Blended, and Online Learning." The international study offers strategies and important implications for [higher education](#) institutions preparing for the digital wave. It also emphasizes the importance of universities drawing from learning sciences research in preparing new models of teaching, learning, and student assessment.

The [paper is published](#) on the LINK Research Lab website and is part of the MOOC Research Initiative, a project focused on Massive Open Online Courses that was funded by a \$835,000 grant from the Bill & Melinda Gates Foundation and administered by Athabasca University in Alberta, Canada.

The study supports previously published research that has found [online learning](#) to be equally or more effective than in-person instruction. The new study, however, delves further by examining the evolution of learning in digital spaces, including various approaches to credentialing and assessment beyond the traditional grading scale and diploma. Future technology structures that bear no resemblance to current learning management systems are described as part of the tool set for the 21st century education.

"Over the next decade, even the most conservative systems will begin to adopt a greater range of digital technologies to support student learning and university operation in general," said Siemens, an internationally known expert and theorist in the field of digital learning who joined The University of Texas at Arlington last year. "To prepare for this transition, we need to first understand the research of learning in

online/blended/distance spaces."

He added: "This is essentially about building a foundation so that we can get past the 'but does online learning work' argument that often arises in the conversations. It works. Now, institutions must begin preparing their system for the digital movement."

For their research, Siemens and his team members analyzed 339 secondary studies in the domains of distance education, online learning, and blended learning - a practice that combines traditional face-to-face instruction with online learning - using content analysis and citation network analysis research methods.

"The move to digital education mirrors what has happened in much of society, where control shifts to the end user and reflects their needs and interests, not only those of the institution providing a service," Siemens said. "To meet this challenge directly, universities need to start evaluating and changing existing policies, strategies and practices to benefit from digital learning."

Beyond showing no significant difference in effectiveness of online and face-to-face learning settings, the study provided directions for further research, necessary to better understand what practices work best in online settings. The transition to digital learning offers universities opportunities to reach more students and increase the quality of learning, while providing a range of options to students, the authors said.

Pete Smith, UT Arlington vice provost for digital teaching and learning, said the study will quickly become one of the 'standards' in the scholarly literature.

"It will be widely referenced and will inform research and other researchers for years to come," Smith said.

Siemens is an early originator of open online education who taught one of the first open online courses in 2008 while a professor at University of Manitoba.

Co-principal investigators on the new study are Dragan Gašević, professor and chair in Learning Analytics and Informatics Schools of Education and Informatics at the University of Edinburgh; and Shane Dawson, acting director of the Learning and Teaching Unit at the University of South Australia.

Gašević said many universities are realizing the importance of digital education as a means to enhancing institutional learning and teaching strategies to increase accessibility and flexibility of courses and degree programs through online offerings.

"While there has been a vested amount of research available about the most effective learning and teaching approaches, there have not been reports that systematize that work in a single document," Gašević said. "This study specifically aimed to fill this gap and offers practical sources of information for policy makers, university leaders, academics and researchers."

Dawson said university leaders and educators are increasingly challenged with implementing new technologies to better supplement teaching and learning in order to meet the demands of the contemporary student cohort.

"This study provides critical insights into the types of practices and approaches that have a reported demonstrated impact on the quality of student [learning](#)," Dawson said.

Provided by University of Texas at Arlington

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