THE NGDLE

We Are the Architects

Malcolm Brown

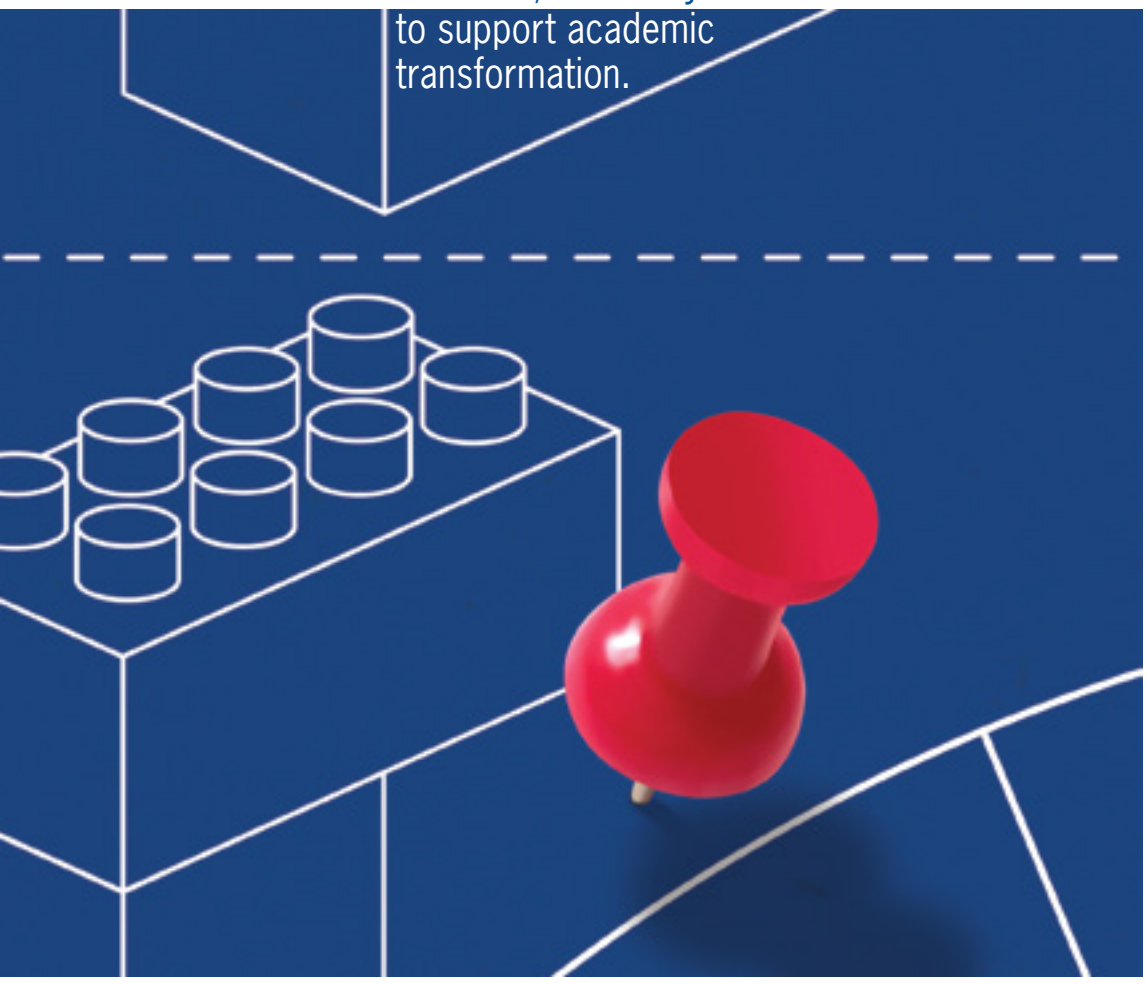
In April 2017 the **next generation digital learning environment** (NGDLE) framework celebrated its two-year anniversary. In the course of those two years, the unpronounceable and mildly unsightly acronym "NGDLE" has developed a life of its own. It did so against all odds. Indeed, Jon Dron at Athabasca University remarked immediately after the release of the 2015 white paper on the NGDLE: "NGDLE is an appalling acronym! By definition, it is unlikely to catch on."[1] In this assertion, Jon was both right and wrong: right about it being appalling, perhaps, but wrong in another respect: it did catch on. As of this writing, a Google search on the term produces close to six thousand hits.[2]

ILLUSTRATION BY STEVE McCRACKEN, © 2017

That said, it is useful to look back and see where this homely acronym came from. The research that resulted in the April 2015 NGDLE white paper[3] was made possible by a grant from the Bill & Melinda Gates Foundation. Both the Foundation and EDUCAUSE were interested in the question of what the next learning management system (LMS) might look like. The research began in the summer of 2014. As all researchers know, a key to doing good research is finding the right question, and the team quickly discovered that a question asking about the next generation LMS was the *wrong* question. Very early in the research process, Randy Bass of Georgetown University pointed us in the right direction when he said in an interview with the research team: "If it's an environment that's somehow being provided by a single enterprise system, then no, stop now. . . . It seems to me it's a worthy goal to ask: 'How is it going to optimize the environment around it for education?'" Clearly, anything that was a *system* (the "S" in "LMS"), in the sense of a one-size-fits-all approach, was by itself a dead end.

So the focus shifted to environments. To address the challenges and opportunities facing higher education, whatever was next would need to be *next generational*, meaning that it requires out-of-the-box thinking and, above all, the ability to support academic transformation—change that is both strategic and institutional in scope.[4] It also needed to be *digital*, since almost everything concerning learning in higher education touches or is enabled in one way or another by digital technology. Further, it needed to be about *learning*, meaning a learner-centered focus, providing the basis for both instructor and learner success. Since it is about learning, it has to offer ways of moving past the fixation on the traditional course and the administration of courses. And finally, it needed to be an *environment*, a setting comprising many interacting components that enable learning of all kinds to flourish. Hence the rather lumbering name for this what's-next thing became the *next generation digital learning environment*. As is most often the case (as also with puppies and kittens), the first name stuck, and so the NGDLE acronym was unleashed on an unsuspecting higher education world in April 2015.

To address the challenges and opportunities facing higher education, whatever was next would need to be *next generational*, meaning that it requires out-of-the-box thinking and, above all, the ability to support academic transformation.



Over the past two years, one point continues to crop up in discussions about the NGDLE. That question is whether the NGDLE argues for or against the LMS. One important aspect of the NGDLE is its Zen-like emptiness. A subtitle we could have bestowed on the white paper (had we thought of it at the time) might have been: "The LMS in the Post-LMS World." Established LMS vendors will argue that even in the context of a component-based architecture woven

together by open standards, a hub will still be needed—a role played by the LMS. In fact, in his article in this issue of *EDUCAUSE Review*, John Baker explains: "The LMS needs to be a *central nervous system* that connects the components (the bricks) in a unified learning ecosystem." Others espouse a radically decentralized approach, which we might call the "we don't have to show you no stinkin' LMS" school of thought: use the tools relevant to you and connect them (or not) as needed.[5]

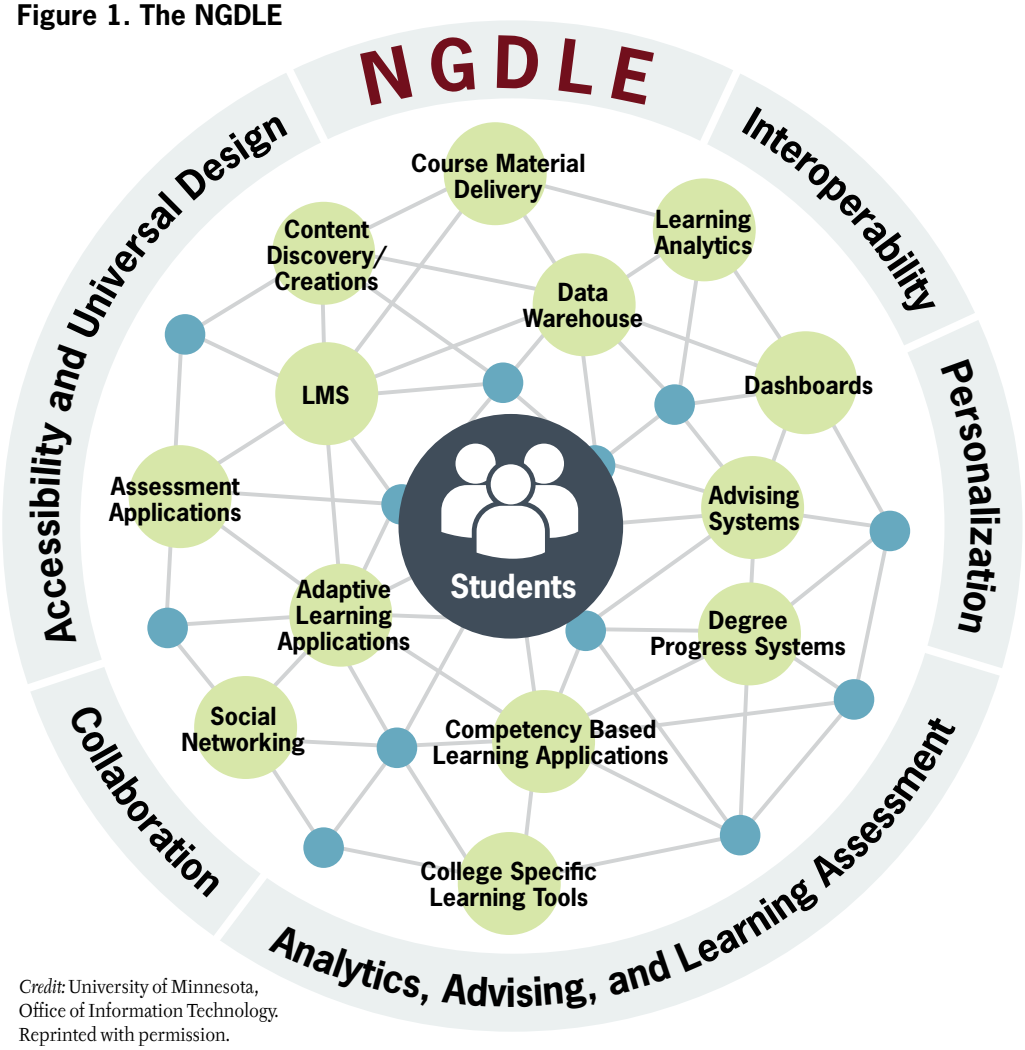
The future role of the traditional LMS is an important consideration and worthy of careful discussion. In practical terms, the LMS will continue to be a hub for most institutional learning environments for the foreseeable future. However, while the NGDLE concept espouses a component-based architecture, it does not prescribe which components. It makes no recommendation on vendor vs. local applications or on commercial vs. open. One institution might use the LMS as a hub, another might not. In short, it is up to individual institutions (or possibly consortia of institutions) to decide which components best serve their learning needs and requirements. In light of the NGDLE's aspiration to serve as a framework that enables institutions to address their very diverse learning needs, it must remain agnostic in this respect. The key in the NGDLE framework is not the to-be-or-not-to-be LMS question but, rather, the importance of interoperability on many levels, a characteristic that enables a diversity of function and a coherent environment experience. Stephen Laster's article in this issue explores this cornerstone idea of interoperability based on open standards.

The NGDLE vision of a web or network of educational applications has been captured graphically by the University Learning Technology Advisors (ULTA) at the University of Minnesota. Figure 1 shows the LMS as a component of the network. Just how the LMS operates as a hub and fits into the larger network is left as an exercise for each institution.

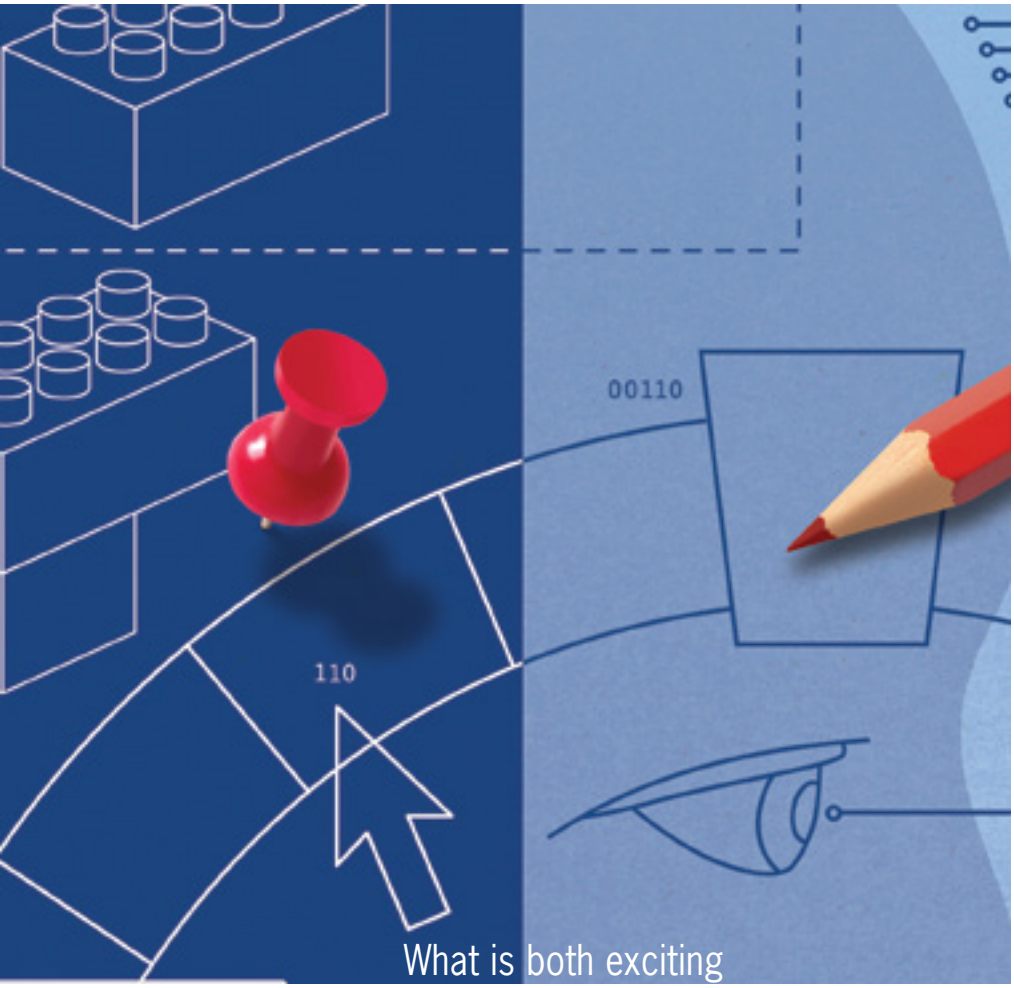
So now let's look to the future: What's ahead for next generation digital learning environments? First, I would urge us to think "next generationally" in a way suggested by Phil Long and Jon Mott in their article here. We should think not only about how to build a true digital learning environment in a technical sense but also about our strategic destinations. What new directions and opportunities might something like the NGDLE afford our institutions? Might it even encourage us to fiddle with our paradigms of higher education?

Also ahead is a lot of inventive and innovative work. Michael Feldstein concludes his article in this issue right at this point. I would add that this venture will require "all hands on deck" if we are to make meaningful progress. All of us, from all walks of higher education, will need to work in concert in order to make progress.

Figure 1. The NGDLE



Credit: University of Minnesota, Office of Information Technology. Reprinted with permission.



What is both exciting and daunting is that the shift to a component-based approach provides an unprecedented opportunity to shape, rethink, plan, and design our digital learning environments.

To be more specific, I believe we need to address the following four areas:

- *Interoperability*. In the 2015 white paper, we remarked that "interoperability is the linchpin of the NGDLE." I haven't come across anyone who disagrees with that idea. But that doesn't mean that interoperability will magically unfold before us. We'll need to do a full-court press on the development and implementation of open standards. Certainly IMS Global's role is obvious and conspicuous. But the rest of us have important roles to play as well. We'll need to establish an effective dialogue with the vendor community. We'll also need to attend to our procurement practices to ensure that we are effectively articulating and insisting on the right academic components to do the job. Wherever we can, we should band together into consortia and other kinds of cooperatives to make progress in this area.
- *Enterprise IT, the CIO, and the IT Organization*. All too often, we see enterprise information technology and academic information technology as operating on separate planets. But enterprise IT, along with the CIO and the IT organization, has an important role to play with respect to making progress toward learning environments based on application components. Indeed, on the enterprise side there is talk about "next generation enterprise," which suggests a point for the academic and the enterprise folks to initiate dialogue.[6] As Vince Kellen suggests in his article, there is a vital role for the campus CIO as a strategic planner who can help form the alliances and institute the practices needed to make progress.
- *Learning Data*. I think we'll see the most conspicuous progress over the next two years in the area of learning data. Standards like Caliper and xAPI finally provide a kind of Esperanto for learning data. The combination of the component-based approach and these standards affords an unprecedented opportunity for the collection and analysis of learning data, all in service to learner success. As this issue of *EDUCAUSE Review* goes to press, there are institutions already out of the gate that are beginning to implement learning data "networks" on their campuses. I would suggest that there is an opportunity to accelerate our thinking and planning with respect to the range and extent of learning analytics at our institutions. We should all be holding discussions on this point.
- *We, the Architects*. I've made this point elsewhere, but what is both exciting and daunting is that the shift to a component-based approach provides an unprecedented opportunity to shape, rethink, plan, and design our digital learning environments.[7] An architect is a proactive agent who looks to plan structures and environments to accommodate future usage. By taking the component approach, we can all adopt an architect's perspective and work to design the learning environments we want and need.

In the months ahead, EDUCAUSE will be working with the higher education IT community to promote the realization of next generation digital learning environments. We will be devoting space at our events and in our publications to discussing, sharing, and brainstorming about ways to move ahead. As you gain insights in this area and make progress toward your goals, we encourage you to share those insights. We welcome all ideas from you, our community members and fellow architects.[8] ■

Notes

1. Jon Dron, "EDUCAUSE Looks Beyond the (Current) LMS Environment: Is It a Future We Want?" *Athabasca Landing*, May 12, 2015.
2. Granted, a few of those hits relate to a book on Spanish linguistics. "NGDLE" is also an abbreviation for *Nueva Gramática de la Lengua Española* (Madrid: Espasa Libros, 2009).
3. Malcolm Brown, Joanne Dehoney, and Nancy Millichap, *The Next Generation Digital Learning Environment: A Report on Research*, an EDUCAUSE Learning Initiative (ELI) white paper (April 2015).
4. In the discussions of the NGDLE over the past years, observers have frequently stated or implied that the NGDLE is not "next generational" because the idea of component-based environments is not new and dates back at least a decade. For example, Clint Lalonde wrote: "While it is being tagged with "Next Generation," it is an idea that has been around for awhile now" ("NGDLE and Open Edtech," *ClintLalonde.net*, February 25, 2016). One could also argue that other predecessors of the NGDLE are the E-Learning Framework, the Open Knowledge Initiative (OKI), and the work that Michael Feldstein describes in his article in this issue of *EDUCAUSE Review*. No doubt there are other antecedents. Our use of the term "next generation" was not meant to exclude the acknowledgment that the NGDLE framework stands on the shoulders of giants, as the expression goes.
5. See Simon Thomson, "An Edtech Future without More Edtech," *Digisim*, November 4, 2016.
6. One of the EDUCAUSE Top 10 IT Issues for 2017 is "Next-Gen Enterprise IT: Developing and implementing enterprise IT applications, architectures, and sourcing strategies to achieve agility, scalability, cost-effectiveness, and effective analytics."
7. Malcolm Brown, "6 Implications of the Next-Generation Digital Learning Environments (NGDLE) Framework," *Transforming Higher Ed* (an *EDUCAUSE Review* blog), June 27, 2016. See also Rob Abel, Malcolm Brown, and Jack Suess, "A New Architecture for Learning," *EDUCAUSE Review* 48, no. 5 (September/October 2013).
8. One venue for sharing your ideas is the EDUCAUSE blog *Transforming Higher Ed*. If you have an idea for a blog post, please contact me at mbrown@educause.edu.

© 2017 Malcolm Brown. The text of this article is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

Malcolm Brown (mbrown@educause.edu) is Director of the EDUCAUSE Learning Initiative (ELI).

Why IT Matters to Higher Education

EDUCAUSE review

AWARDS

er.educause.edu

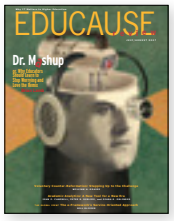
Fifteen APEX Awards for Publication Excellence, including four awards for "Magazines & Journals, Print (over 32 Pages)"

Twelve MAGGIE Awards, including two for "Associations, Nonprofit/Trade (Print) Magazine"

Eight Tabbie Awards, including five for "Best Single Issue"

Nine Azbee Awards, including "National Top Ten, General Excellence, Magazine of the Year"

Ten Magnum Opus Awards for Outstanding Achievement in Custom Publishing, including two Silver Awards and two Gold Awards for "Best All-Around Association Publication"



Six Ozzie Awards for Excellence in Magazine Design, including a Bronze Award for "Best Use of Illustration"

EDUCAUSE Review, the flagship magazine of EDUCAUSE, takes a broad look at current developments and trends in information technology, how they may affect the college or university as an institution, and what they mean for higher education and society. In addition to EDUCAUSE members, the magazine's audience consists of presidents and chancellors, senior academic and administrative leaders, non-IT staff, faculty in all disciplines, librarians, and corporate leaders. The magazine has a print bimonthly circulation of 22,000 and a monthly online readership of 100,000+.