Beyond the LMS: What Next-Gen Learning Platforms Should Do

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By Tom Vander Ark (http://gettingsmart.com/author/tom/)

Learning management systems (LMS) were developed 15 years ago to managed digital courseware in higher education. With digital conversions well underway in K-12 schools, a variety of instructional tools including LMS are being adopted. However, the long and varied shifts from group instruction to personalized learning, and from age cohorts to individual progressions makes it hard for EdTech entrepreneurs to match their product roadmap to emerging customer requirements.

As a result (and as frequently discussed (http://gettingsmart.com/2015/01/learning-will-work-near-future-12-features-next-gen-platforms/)) it's harder than it should be to create an effective sequence of learning experiences in K-12. There are three primary reasons:

- Weak demand articulation (i.e., slow shift to digital, varied requirements, tortured purchasing procedures that favor low bids rather than quality articulation);

- Historic underinvestment in EdTech (compared to other $1T sectors); and
- Well intentioned federal, state and philanthropic projects have chilled investment and delayed progress.

At the height of the Great Recession, states like North Carolina received a Race to the Top (http://www2.ed.gov/programs/racetothetop/) (RTTT) grant and launched efforts to build a Instructional Improvement System (IIS). Like other RTTT state grantees, efforts to build IIS have been slow and disappointing. North Carolina uses Pearson's PowerSchools and SchoolNet as the foundation for its school information system, Home Base (http://www.dpi.state.nc.us/homebase/). NC is considering adding a learning management system (LMS) that should provide NC districts with an affordable integrated learning platform. But it will still fall short of what some forward leaning districts are looking for.

After ten productive years as superintendent in two South Carolina counties, Valerie Truesdale joined the Charlotte-Mecklenburg Schools (http://www.cms.k12.nc.us/) (CMS) to lead the innovation agenda. The strategic plan calls for CMS to transform classrooms into "personalized 21st century learning environments for every child to graduate career- and college-ready." In 2012, none of the 165 schools were 100% wireless and the entire school system was still running XP. Lacking the budget for a fast digital conversion, the district launched a personalized learning initiative to build teaching capacity in advance of issuing devices for students. Seeded by a $100,000 grant, and led by Jill Thompson, a pilot group of student-centered schools are systematically building personalized learning (http://pl.cmslearns.org) environments with an emphasis on student ownership of their learning (see Jill's blog on misconceptions (https://insidetheclassroomoutsidethebox.wordpress.com/2015/01/18/dismantling-personalized-learning-myths)). Thought partners in groups such as the League of Innovative Schools and Consortium of School Networking (CoSN) help by sharing strategies that fuel personalized learning efforts.

The experience has allowed Charlotte-Mecklenburg Schools to develop a clear vision of a personalized learning toolset. Teams in pilot personalized learning schools outlined specific use cases and more than 40 specific tasks.

	Students				Teachers				Parents	School
	K-2	3-5	6-8	9-12	K-2	3-5	6-8	9-12		Administration
Accommodations	V	V	V	V	VE	VE	VE	VE	V	VE
Assess Tasks	VE	VE	VE	VE	VE	VE	VE	VE	V	V
Assignments	V	V	V	V	VE	VE	VE	VE	V	VE
Attendance	V	V	V	V	VE	VE	VE	VE	V	VE
Behavior	VE	VE	VE	VE	VE	VE	VE	VE	V	V
Blog	VE	VE	VE	VE	VE	VE	VE	VE	V	V
Calendar	VE	VE	VE	VE	VE	VE	VE	VE	VE	V
Cancellations/ Delays	V	V	V	V	V	V	V	V	V	VE
Class Rank	—	—	—	V	—	—	—	VE	V	VE
Common Core Standards	—	VE	VE	VE	VE	VE	VE	VE	VE	V
Community Service	—	—	—	V	—	—	—	VE	V	VE
Dashboard	V	V	V	V	V	V	V	V	V	V
Export	E	E	E	E	E	E	E	E	E	E
Extracurriculars	—	—	—	V	—	—	—	VE	V	VE
Filter Content	E	E	E	E	E	E	E	E	E	E
Financial Aid	—	—	—	—	—	—	—	—	E	VE
Foreign Language Recording	—	—	—	VE	—	—	—	VE	V	V
"Fun" Widget	VE	VE	VE	VE	VE	VE	VE	VE	V	VE
Goals	VE	VE	VE	VE	VE	VE	VE	VE	VE	V
GPA	—	—	—	V	—	—	—	VE	V	VE
Grades	—	V	V	V	VE	VE	VE	VE	V	V
Graduation Tracking	—	—	—	VE	—	—	—	VE	VE	VE
Health issues	—	—	—	—	VE	VE	VE	VE	VE	VE
Help	V	V	V	V	V	V	V	V	V	VE
List of students	V	V	V	V	V	V	V	V	V	VE
Login/logout	E	E	E	E	E	E	E	E	E	E
Multilingual	E	E	E	E	E	E	E	E	E	VE
Notes	VE	VE	VE	VE	VE	VE	VE	VE	VE	V
Past Information	V	V	V	V	V	V	V	V	V	VE
Playlist	V	V	V	V	VE	VE	VE	VE	V	VE
Photo	V	V	V	V	V	V	V	V	V	VE
Portfolio	VE	VE	VE	VE	VE	VE	VE	VE	VE	V
Recommended Resources	—	—	—	—	VE	VE	VE	VE	V	VE
Record Management	—	—	—	—	—	—	—	—	—	VE
Report Card	V	V	V	V	VE	VE	VE	VE	V	VE

Retention Notes	—	—	—	—	VE	VE	VE	VE	V	VE
Schedule	—	V	V	V	VE	VE	VE	VE	V	VE
Schedule Conference	E	E	E	E	VE	VE	VE	VE	E	V
Standardized test scores	V	V	V	V	V	V	V	V	V	VE
Today's learning objectives	V	V	V	V	VE	VE	VE	VE	V	VE
Transcript	—	—	—	E	—	—	—	—	E	VE

V = View; E = Edit/Create or Perform Task; — Not applicable

(http://cdno2.gettingsmart.com/wp-content/uploads/2015/02/tasks-chart-2-18-15-700pxw.jpg)

Beyond functionality available in many traditional LMS, CMS is looking for 10 capabilities:

1. **Single sign-on:** portal where students can gain access to apps, view assignments and schedule; parents can view student work in order to help them better at home.
2. **Mobile:** device agnostic (laptop, smartphone, tablet) and 508 compliant. Allow voice-to-text and text-to-voice capabilities.
3. **Playlists:** easy construction of ordered digital learning experiences from a large tagged learning object repository
4. **Pathways:** allow students to co-construct learning sequences base on learning preferences.

5.NF.1 & 2 - I can add and subtract fractions and mixed numbers with unlike denominators.
Select 2 choices for your pathway and have your teacher sign off before moving to the next step!

Teacher Checkpoint	I learn better by listening.	I learn better by seeing.	I learn better by writing/creating.
Small Group Conference	Watch the following video on adding fractions with different denominators using fraction bar models. Complete a graphic organizer! Create and solve your own sample problem!	Solve the three problems below using the Virtual Manipulatives app, fraction bars, or fraction magnets to prove your answers! 1. How do you know that 2 1/2 + 3 2/3 > 6? 2. Emily says the answer to 7/9 - 2/6 is 5/3. Is Emily correct? If not, help her understand her mistake? 3. Show the sum of ⅔ + ¾ using a number line?	*What do you know about grizzly bears?* 1. Solve the following:If a large grizzly named Leroy ate 15 3/4 pounds of blackberries along with 11 7/8 pounds of green plants, and he was preparing to hibernate, how many more pounds should he try to eat in that day to be ready when winter comes? 2. Research and watch the video and based on what you know, create and solve two addition/subtraction fraction problems!
Small Group Conference	Watch the video on adding mixed numbers and complete a graphic organizer. Retell the strategy in your own words.	When adding 7/12 + 3/12, why do you add the numerators but keep the denominator the same? When adding ⅞ + ¾, why can you not add the numerators but keep the denominators the same? Explain your thinking in pictures!	Ringling Bros. and Barnum and Bailey Circus are transporting their circus animals by train. However, they have encountered a problem and cannot proceeds as planned. They can put most of their animals in trucks. They have rented 10 ton trucks for the elephants. Which elephants can travel together? How many trucks would be needed to take all the elephants? **BONUS**: After researching, the circus found alternate trucks to use. Use the chart to determine the least expensive way to transport the elephants!
Small Group Conference	Select any of the videos from the list that you would like to review more. Complete a graphic organizer and write a reflection on what you learned. Read your reflection to a friend!	Create a visual poster or presentation to explain how to add and subtract fractions! Be sure to include examples and have a partner view it and solve your practice problems!	Write a letter to your relative preparing a holiday meal. Explain how you would add fractional measurements together for their recipes in order to prepare enough for the family. (ex. combine all the butter for different recipes, how would you add them together?)

(http://cdno2.gettingsmart.com/wp-content/uploads/2015/02/Pathway5.NF_.12.jpg)

5. **Map:** visual roadmap of learning goals and an achievement recognition system (e.g., badging) that allows students to demonstrate competence.

6. **Portfolio:** A portable digital portfolio system section that follows the child through their schooling.
7. **Notes:** individual and collaborative note taking feature in a virtual binder.
8. **Goals:** a visual learning goal tracker that captures each student's aspirations for career and college to spur self-evaluation, self-regulation, and self-motivation.
9. **Co-lead:** support addition of a co-teacher to a class or an assignment.
10. **Groups:** create learning groups quickly and easily (like Edmodo does).

"It is already hard for parents to understand the instructional shift taking place in classrooms," said Thompson. She thinks including parents as key system users is important, "Allowing access to their students portfolio, notes etc. will help them to be able to 'see' what their child is learning."

Another valuable feature, according to Thompson would be college and career awareness and guidance features. (See Core & More: Guiding and Personalizing College & Career Readiness (http://gettingsmart.com/publication/core-guiding-personalizing-college-career-readiness/) for a list of 12 features.)

Truesdale believes that a student-centered digital system that requires each learner to self-monitor and provides affirmation of personal effort and learning will be a game changer for building a student's cognitive and emotional confidence, which are essential skills for success in career and college.

This blog is part of the Learning Platforms Series brought to you by The Bill & Melinda Gates Foundation. For more, stay tuned in for the final published project, Getting Smart on Next-Gen Learning Platforms and check out additional posts in the series:

- How Learning Will Work in the Near Future: 12 Features of Next-Gen Platforms (http://gettingsmart.com/2015/01/learning-will-work-near-future-12-features-next-gen-platforms/)
- 30 Attributes of Next-Gen Learning (http://gettingsmart.com/2014/09/30-attributes-next-gen-learning/)

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3 COMMENTS

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Post Comment

Raymond Rose (http://rmrose.blogspot.com) / February 23, 2015

Tom:

There's another important feature all the Next Generation LMS should have — accessibility. There are legal accessibility issues that are part of LMS design. The easiest one for me to point to is navigation. Every LMS needs to have mouse-free navigation. What that means is, take the mouse and effectively put it in the drawer. You should still be able to navigate to/through the entire course/LMS without that mouse. If that's not possible then the LMS would not be considered accessible to students with mobility disabilities, and the institution using that LMS is subject to finding of discrimination.

Ray

Jess / March 2, 2015

What about social learning and competency-based learning? Platforms like Keiro and Digedu provide elements beyond those of the traditional LMS.

Charles Reigeluth (http://www.reigeluth.net) / March 30, 2015

To truly personalize learning, the fundamental structure of an educational system must change, from time-based student progress to learning-based student progress. Such competency-based education requires four major functions of an LMS:
1) Recordkeeping for student learning: It must offer tools to keep track of what each student has learned.
2) Planning for student learning: It must offer tools to help student and teacher develop a personal learning plan, including designing or selecting projects that will help the student master the standards s/he is working on next.
3) Instruction for student learning: It must offer immersive project learning environments when possible and just-in-time tutorials to aid learning during the projects.
4) Assessment for/of student learning: It must integrate team assessment into the project environment and integrate individual assessment into the tutorials, in a manner similar to the Khan Academy's criterion of 10 practice items in a row correct.

Of course, these four major functions must be seamlessly integrated so as to automatically share information with each other, and other functions, such as calendar, email, bulletin boards, portals, and much more, must also be integrated. A research team at Indiana University has developed a full set of design specifications for this kind of LMS. It is called the Personalized Integrated Educational System (PIES). The preliminary set of design specifications was published in Educational Technology magazine (https://www.researchgate.net/publication/228826443_Roles_for_technology_in_the_information-age_paradigm_of_education_Learning_management_systems (https://www.researchgate.net/publication/228826443_Roles_for_technology_in_the_information-age_paradigm_of_education_Learning_management_systems)), and the updated, elaborated version is currently being submitted for publication.