



Learn.duke.edu

Discovery Summary

January 2018

Prepared by

Lauren A. S. Hirsh

Information Architect & UX Designer

lauren.hirsh@duke.edu

Table of Contents

Table of Contents	2
Discovery Overview	3
Business Opportunity	3
Stepping beyond toolkits.oit.duke.edu	3
Discovery Approach	4
Learn.duke.edu	5
Learn.duke Overall Goals	5
Rationale	5
MVP	6
MVP Goals	6
Benefits	6
Sections of the MVP Site	7
Issues for Consideration	8
Project Next Steps	10
Phase 1 - Requirements and validation planning	10
Phase 2 - Wireframes, design, build, testing and QA	10
Appendix A. The Designed Learning Experience	12

Discovery Overview

The Creative and User Experience (CrUX) team within Duke Web Services (DWS) was asked to lead a limited product discovery effort with the objective of helping the Office of Information Technology (OIT) and Duke Learning Innovation determine what a Toolkits redesign or replacement should be. Specifically, our goals were to (a) help clarify the business problem and opportunity, (b) understand and align the goals and priorities of the individuals and groups working on this project, and (c) work with Learning Innovation to provide some initial design direction for a new front-end website for faculty and students.

Note that some of the content here (plus more on the future goals for learn.duke.edu) can also be found in the [Github repository](#) and is linked where appropriate.

Business Opportunity

Toolkits was designed to allow Duke faculty, students and staff to create and define online learning communities and then provision access and rights to various online tools and resources. While functional enhancements and some changes to the front-end interface have been made over time, Toolkits remains an underutilized resource, described as “creaky” by its creators.

Learning experiences in higher education are increasingly taking place in applications outside of the traditional learning management system (LMS). All LMS options on the market, including Sakai, are not the most effective tool for facilitating all components of a learning experience. This is why open integration standards like IMS Global’s Learning Tool Interoperability (LTI) are so powerful for faculty; such standards enable faculty to select the best tools for the job and integrate them into the LMS. By using these open standards and expanding our focus beyond integrations only within Sakai, we have an opportunity to reimagine Toolkits to provide adequate support for the kinds of active learning methods and environments that translate to the first class learning experiences Duke wants to encourage.

What we propose is more than merely a redesign. It is a step toward creating *Designed Learning Experiences*¹ and an opportunity to innovate ahead of our peers. The learn.duke project is a starting point for evaluating a way to address the needs of learning communities, with an initial focus on instructors and students in course-based groups.

This document will define minimal goals in order to expand the current service so it will better support the teaching and learning needs of the Duke community as **learn.duke.edu**.

Stepping beyond toolkits.oit.duke.edu

Improving the look, feel and usability of the existing Toolkits front-end website is ultimately of little value on its own:

¹ Learning Innovation describes the “Designed Learning Experience” in a Memo to the Board of Trustees (October 2017). See [Appendix A](#) for relevant excerpt.

- While it should make the app provisioning process somewhat easier for those who already use the website, this is insufficient to increase wider adoption. It will not make tool setup easier for all instructors; our prior work suggests that those who choose to do their course set up in Sakai are likely to continue doing what is familiar to them. (It will not give them a compelling enough reason to visit a separate website and learn an alternative process.)
- It is likewise insufficient to bring our faculty greater awareness of the different tools Duke offers and how they can be integrated to facilitate well-designed learning experiences for groups of learners.
- Nor would it help them more effectively and efficiently select the set of tools best suited to their course content and pedagogy.
- Finally, it does not directly address the student experience and expressed need to more efficiently navigate between tools as they switch course contexts.

Discovery Approach

CrUX began by seeking to understand the problem space from the perspectives of the subject matter experts who have a broader view and better sense of where we are headed. This does not diminish the critical role of customer input in successful design and innovation, and we recommend the learn.duke project take an iterative approach that integrates user testing feedback at many stages.

During the initial kick-off meeting in late October 2017, a range of visions for this new website was discussed—some were grand and others were smaller in both scale and scope. In order to isolate and clarify the various ideas, priorities and concerns for this project as expressed by the different groups on the project team, as well as where those ideas converge, Lauren Hirsh (CrUX) conducted a series of semi-structured interviews and conversations with the twelve people involved with this effort thus far:

- **Learning Innovation**
 - Michael Greene, Justin Johnsen, Chris Lorch, Jolie Tingen, and Heather Valli (*Learning Technology Services*)
 - Shawn Miller and Matthew Rascoff (*Senior leadership*)
- **Office of Information Technology**
 - Mary McKee (*Identity Management*)
 - Charley Kneifel, Mark McCahill, Liz Wendland (*Systems Infrastructure*)
 - Evan Levine (*Academic & Media Tech*)

This was done in conjunction with a review of the current website and UX consulting and brainstorming sessions with Michael Greene, Duke Learning Innovation's head of Learning Technology Tools and Strategy (LTS) team and their designated lead/point-person for this project.

The [learn.duke Github repository](#) is a living document, and the work to break down vague requirements and ruthlessly prioritize features and use cases is ongoing. If this project is approved, CrUX can provide additional assistance with this.

A [learn.duke InVision board](#) has been set up, which contains sources of inspiration, initial sketches and ideas and draft wireframes.

Three higher fidelity [concept wireframes](#) can be viewed on UXPin. These are intended to be a vehicle for further discussion and exploration.

Learn.duke.edu

Whereas toolkits.oit.duke.edu is rarely ever seen by students, learn.duke.edu will reflect Duke's learner-centered approach to the use of learning technology.

Learn.duke.edu will give learners a unified interface for viewing and accessing all the instructional tools used by their learning communities. Toolkits, as it currently exists, isn't meeting this goal, and contributes to communities' reliance on a single solution, like email or the LMS, which aren't the best learning tools for all aspects of a learning community or use unsupported tools - even when a supported alternative exists.

How might learn.duke improve this to accommodate the entire range of learning communities, those that use a single tool, those using multiple supported tools, and those using their preferred, unsupported tools? How might learn.duke encourage our learning communities to more frequently use the best tools to meet their learning goals while taking less energy to do so?

Learn.duke Overall Goals

1. Provide students a unified interface for accessing the tools used by their learning communities.
2. Provide faculty a catalogue of learning technologies for use in their learning communities.
3. Allow faculty to manage membership of and technologies used by their learning communities.
4. Provide information on learning technology management and policies.
5. Let students know what they should do next for their classes.
6. Suggest tool packages, or standard sets of tool combinations, to help faculty accomplish their learning objectives.
7. Solicit suggestions for new tools Duke should support, so Duke can research support, automation and provisioning behind the new tools.

Rationale

Among the most frequent complaints from students at many higher education institutions about their technology-supported learning experiences is that they have trouble remembering where to go to find the content they need when they need it or can't quickly get there, because different instructors are using different tools or using the same tools differently. For instance, a student

may be taking three classes that use Sakai (with one instructor only using Sakai for the gradebook and teaching the rest via another platform), a fourth class managed in a Sites@Duke WordPress site and Box and a fifth via email or Slack. We hear about learners resorting to a myriad of bookmarks saved in their browser to navigate between course contexts. Logging into Sakai provides students with a central starting point for Sakai-based courses, but what if there was a single place students could go to quickly access all content for *all* their courses?

MVP

At his first speech at the University of Chicago in 1956, Dr. Martin Luther King, Jr. told his audience, “We cannot slow up, because we have a date with destiny and we must move with all deliberate speed ... If you can’t run, walk; if you can’t walk, crawl, but keep moving forward!”

The application catalogue (*overall learn.duke goal 2*) need not be comprehensive to begin with. We will start small, with a limited set of tools — the tools that are most often used for courses and those already part of Toolkits.

As time goes on, and Learning Innovation and OIT work together in partnership with academic programs and majors to develop, license and integrate tools that help students achieve learning goals and identify what tools work well in combination, we can begin to include templates for different programs, teaching methods and course structures (*overall learn.duke goal 6*). Tool sets will be in a future phase.

The scope will initially include course groups (SISS course learning communities) only, with the understanding that a future goal is to eventually open this resource to other learning communities.

MVP Goals

The first version of Learn.duke:

- makes it easier than it is currently on the Toolkits website for faculty to manage course groups and select and provision tools for those communities.
- aims to simplify the student experience by making it easier for students to see and connect to the tools that support each of their courses.
- provides users with information on learning technology management and policies.

Success Criteria. We will consider this experiment a success if:

- People use it on a regular basis (students throughout a semester).
- Users find value (assessed based on user feedback; specific measures TBD)
- It is extensible enough to add additional tools without months of extra effort.

Benefits

Students

- only need to go to one website to see:
 - a list of all current semester courses
 - the tools those courses are utilizing
 - course community rosters (and roles)
- quickly jump out to those tools and/or certain places in those tools for a selected course
- personalize tool lists by adding custom URLs and labels

Faculty

- easily view and update course community membership for SISS courses
- single place with tools together to easily provision for a SISS course
- quickly jump out to those tools and/or certain places in those tools for a selected course
- get information about the process for suggesting and approval of new tools
- increased freedom and flexibility to select the right technologies to fit their course design regardless of how they use the LMS
- discover alternative tools for supporting course learning objectives

Administrators

- get better data on which tools are being used most
- get more data on what tools faculty will be using in the upcoming semester, allowing for better resource planning (e.g., Virtual Machines)
- identify unsupported tools already in use at Duke to research adopting/licensing
- proactively identify and work with faculty using unsupported tools with known security, accessibility, copyright or privacy issues
- leverage previously unharnessed educator expertise and experience teaching with different apps (Faculty are already using tools other than Sakai and tools that are not currently supported by Duke. Rather than constrain their teaching and inadvertently encourage them to “go rogue”, encourage faculty to conduct research and collect data that demonstrate how they are getting value out of the tool.)
- give more faculty and student end-users a voice in evolving Duke’s learning technology ecosystem
- decreased dependence on a LMS to provide all functions of course management and learning
- development of APIs that can potentially be used for purposes beyond learn.duke.edu

Sections of the MVP Site

- **Course Tools Launchpad ([/courses](#))**
 - [user stories](#)
 - still need to establish a pilot group (e.g., start with only one or two academic programs? Create a student interest form and start with all courses those students are taking?)
- **Learning App Store ([/apps](#))**

- [user stories](#)
- plan for expansion (faceted search and filter as more get added)
- start with no more than a dozen apps + the option to add custom URLs. The proposed list includes most of the services that are already part of Toolkits as well as Duke Extend and a few apps that are frequently used alongside and/or from within Sakai:

■ Sites@Duke (WordPress)	■ VCM
■ Box	■ Duke Extend
■ Duke Capture (Panopto)	■ VoiceThread
■ Duke Stream (Warpwire)	■ Playposit
■ Email list (Sympa)	■ Piazza
■ Sakai tools (e.g., Gradebook, Assignments)	■ Qualtrics - <i>if can be group provisioned for a course</i>
	■ Add a custom URL
- **Policy Information (/cms)** - information on how learning technologies are managed at Duke. This would be a public facing section.
 - What is LearnTAC and why it exists
 - How tools get added to /apps
 - minimum requirements rubric for adopting new tools, includes items from LI, ITSO, procurement, accessibility, etc
 - provide a single point of contact for vendors and users to start the process of adding an app

Issues for Consideration

Current Toolkits website. The current Toolkits website, toolkits.oit.duke.edu, is used for non-course groups as well as course groups. While the hope is that learn.duke.edu can eventually replace the current Toolkits front-end altogether, it should continue to be maintained for now.

Landing page. CrUX strongly recommends redirecting learn.duke.edu to the login page for /courses. We may want to consider describing the service itself and the tools that it uses on a public-facing subsection or public-facing sites such as learninginnovation.duke.edu and oit.duke.edu.

IDMS Role and Relationship to Group Manager/Grouper. IDMS will continue building this provisional model and making sure that groups are authoritative in Grouper. If it's a course group, faculty will have to manage it on learn.duke.edu. People would be able to view all their groups, including course groups, in Grouper/Group Manager but would manage course groups on learn.duke.edu. For most (faculty), this would be only one visit - just using learn.duke.edu. For some (those that also have non-course groups they manage), they will initially have to go two places: learn.duke.edu for courses and Group Manager for the others. It would be important for IDMS to consult on the development of learn.duke.edu so that in the future, it wouldn't have to be just course groups. They can help with the roadmap for this.

Audience. We need to define with whom we are going to be working with/piloting with first. Perhaps a grad program? Ideally, this would not be a program that uses Sakai for all their courses.

Stakeholders. While initial discussions were limited to a core group actively working on the project, other departments will touch the product. Representative end users should be involved in testing at an early stage. (Note: * indicate stakeholders have already been involved).

1. End users
 - a. Students
 - b. Instructors (Faculty/Grad instructors/TAs)
 - c. Administrative Assistants setting up courses
2. Learning Innovation (LI) *
3. Office of Information Technology (OIT)
 - a. Academic & Media Technologies *
 - b. Identity Management *
 - c. Systems Infrastructure *
 - d. Service Desk (when planning implementation)
 - e. Campus IT staff
 - f. Security
 - g. Project Manager

Development. Learning Innovation and DWS will need to work closely with Systems Infrastructure architects (i.e., Mark and Liz) to ensure harmony between what we want to happen on the front-end and what is planned for the backend. We need to further define development platform and roles. IDMS will consult.

Timeline. Working around the academic calendar makes rollout timeline challenging. We will need to consider carefully what is feasible.

Project Management. There will need to be a project manager (perhaps from OIT PACE) dedicated to this endeavor.

Implementation. Some considerations for implementation include:

- *Training for faculty/students/staff:* who will do this? Probably Learning Innovation, as the functional owner
- *Handling of help tickets:* in early iterations, the project team may need to handle all support. At scale, the OIT Service Desk would need to handle/triage Tier 1 issues (similar to Sakai).
- *Marketing:* Learning Innovation and OIT will need to collaboratively market to be most effective.

Content management. Apps continuously update to include new features. App descriptions and meta data will need to be kept up to date so that faculty can find what they are looking for. There needs to be a cohesive content governance plan to designate responsibility for keeping content up to date.

Relationship to Sakai LMS. We will want to encourage adoption but we should not require faculty to do course setup through learn.duke. We can begin with a generic integration to existing course sites and afterwards concentrate on direct integration with Sakai's individual tools. Faculty who use Sakai will still have to set up Sakai course content in Sakai as the goal of learn.duke is not to replicate the functionality of any particular tool, but to make accessing it easier.

Validation. We recommend an iterative approach. This project plan may take the form of a series of iterative, short sprints to semester-long experiments. Every design is a proposed solution - a hypothesis to be tested. There are some assumptions that have been made that will need to be tested.

Measuring success. We will want to ensure all parties are satisfied with the MVP success criteria set forth above (page 6) and establish how we can/need to measure success.

Project Next Steps

Our overall goal is to incorporate new information as it is learned, further refining functional and design requirements and iteratively elaborating with more detail as the project progresses.

Phase 1 - Requirements and validation planning

Goal: Continue defining the detailed requirements for the product being built

3-4 sprints of the following:

- Workshops (story mapping, use case) to clarify remaining questions that have development and design implications for both MVP and future needs
- Ongoing documentation of functional needs and user flows as ideas are explored
- Iterative wireframe development to document functionality
- Term and content governance documentation
- Develop cohesive testing plans
- Review and iterate with all parties
- Project management/Scrum (PACE?)

At the end of Phase 1, we will be able to determine how and who should build in what platform (In Ruby? PHP-based CMS?) and support the product.

Phase 2 - Wireframes, design, build, testing and QA

Goals: build out and test product

4-5 sprints of the following:

- Continued IA and functional requirement documentation
- Wireframe iteration
- Pattern library creation
- Interaction design
- Visual and user interface design
- Design testing

- Prototype development
- User testing
- Refine and iterate
- Front-end and back-end development
- QA (internal team and external users)
- Project management/Scrum (PACE?)
- Security and accessibility reviews
- Load testing
- Additional development considerations will be defined after platform selection

Appendix A. The Designed Learning Experience

Excerpt from **Learning Innovation at Duke: *Memo to the Board of Trustees***, October, 2017 (p.8):

The Designed Learning Experience. Imagine purchasing an iPhone but never downloading a single app. That is, to some extent, the legacy learning technology environment of the Learning Management System (LMS).

There is increasing recognition that Duke needs learning platforms that integrate modular apps and tools selected and integrated intentionally to support the curriculum and the learning goals of particular programs. The LMS propounds to do this for the whole university, but the enterprise scale is simply too big for the diversity of our learning challenges. On the other hand, building a custom learning solution for each course (or allowing faculty to just pick their own tools) is insufficiently scalable, too confusing for students, and not secure.

We should instead build technology-enabled “Designed Learning Experiences” at the program level. Learning Innovation and OIT would partner with faculty to develop, license and integrate tools that support the program's instructional goals. We’d integrate a modular set of Lego-like ed tech components to offer a custom learning platform for each program (e.g., major, certificate, course sequence, online degree). This idea draws on the “Next Generation Digital Learning Environment” concept of Malcolm Brown and colleagues at the Educause Learning Initiative.

Duke is well situated to play a national leadership role in creating the Designed Learning Experience. The strong partnership between OIT and Learning Innovation can form the basis of the team that will deliver this model. Online and hybrid programs in our professional schools need more from technology than we are able to provide through standard Learning Management Systems. So we have both the supply and the demand for this new approach.

