

The Goldilocks Principle of Course Navigation

How Quality Matters Is Just Right



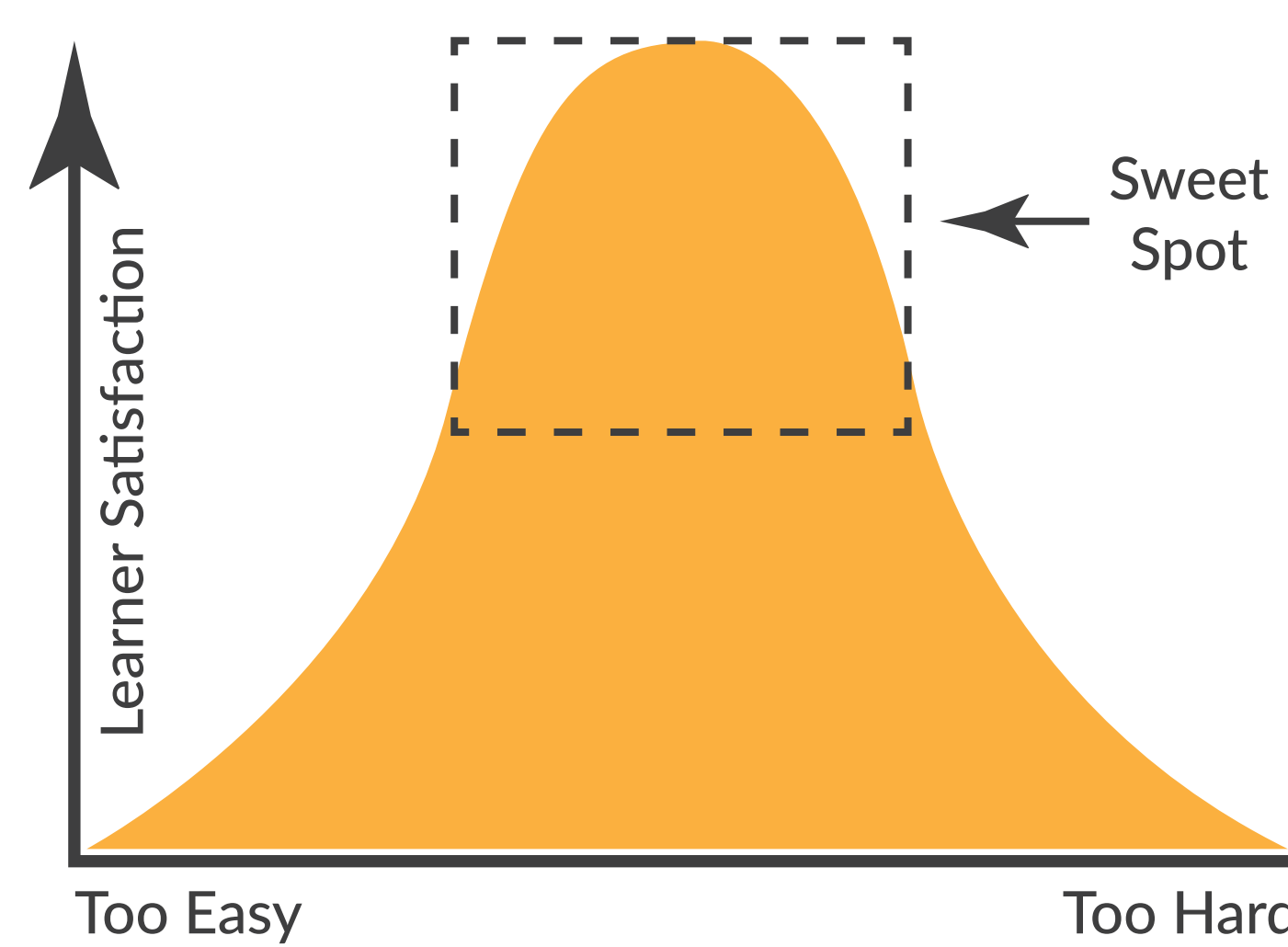
Background

Learning Management Systems (LMS) serve to accommodate the growing load of student enrollment in higher education programs: as a way to increase instructor and student connectivity, by providing a hub for learning resources, allowing a stream of data and analysis for systems learning, and increasing student engagement. Dependency on LMS for virtual delivery of learning content and use continues to increase (Allen and Seaman, 2016). Likewise, the ubiquity of Internet use, which involves frequent interface with user experience design, holds the power to shape reading habits and student perception when exploring educational content in LMS, especially in terms of readability, usability, and findability (Morville, 2005). According to recent figures from Pew Research Center (2018), “roughly nine-in-ten” adults are online in America. Furthermore, current waves in the LMS industry push for user experiences that more closely mirror those of consumer and social media software (Edutechnica, 2018). User experience is not learner experience, but learners in a LMS course occupy the internet’s neighborhood. Higher educational students, accustomed to internet user experience and web design must quickly adapt reading habits to a learning management system, designed explicitly built for a higher cognitive load, and sustained intellectual engagement and activity. This project seeks to understand how dominant visual aspects of web design influence how individuals read and navigate in a LMS. In short, what is the margin of “just right” in between reading for quick reference and avoiding an unnecessary overload of working memory while learning online?

Methodology

Static images were provided from four different LMS interfaces: Blackboard, Canvas Desire2Learn, and Sakai. Seven different course home pages from five different institutions were represented in a “click test.” Each participant was shown four different images of a course and expected to complete the first task needed to begin the work for each course from the home page. Responses were measured in terms of success and the amount of time it took to complete the first step to begin a course on each page.

The Goldilocks Principle



Goal

To look for the Goldilocks Principle by conducting a usability test in different LMS settings to analyze indicators of successful navigation and differentials between or within LMS systems in an effort to find a margin between manageable cognitive load and intellectual rigor.

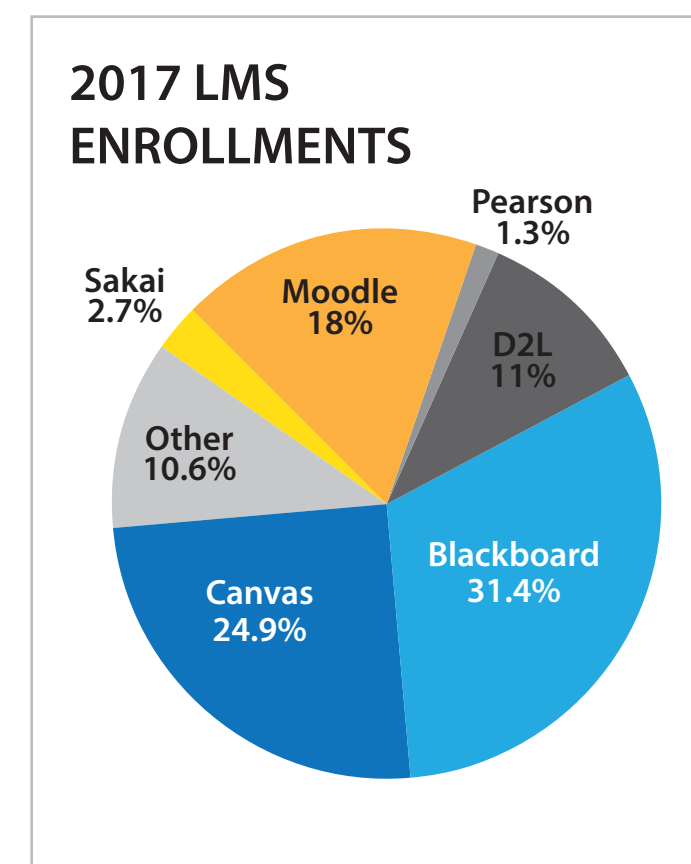
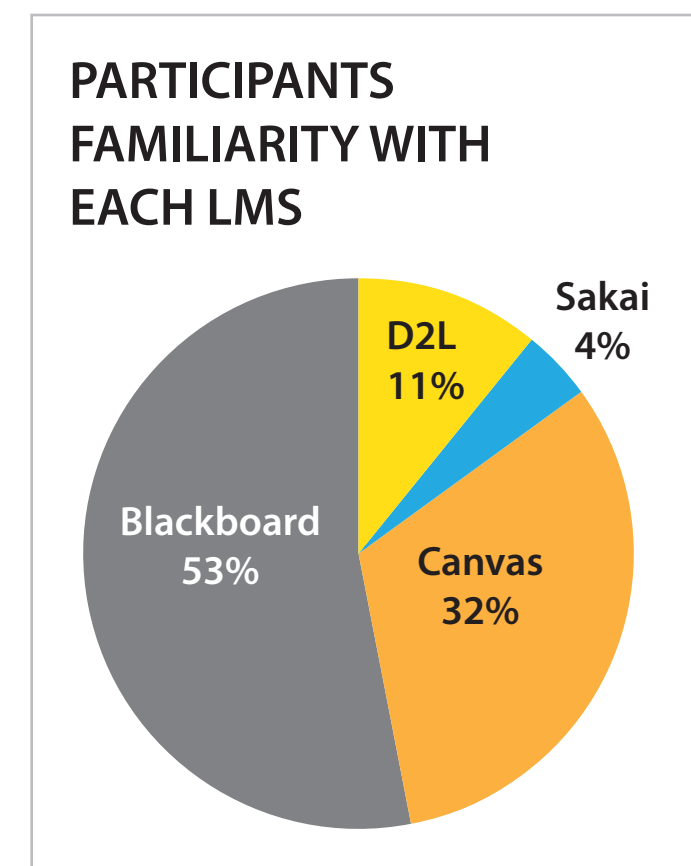


Figure 1: Spring 2018, 500+FTE students, www.edutechnica.com

Findings

120 different participants completed the click test with the success rate ranging from 91% to 36%. The test was bifurcated into two groups. Only one image was shown to both A and B groups. The completion time for each test ranged from 10s to 33s. In an initial, pre-test, question about participant familiarity with LMS, responses seemed to align with the popularity of each LMS, being comparable to the number of users in each system and indicating no bias toward any one LMS.

Who was tested

120 total participants, having the following characteristics:

Age	Gender	Education
18-25: 21	Female: 40	Post graduate degree: 15
26-39: 45	Male: 60	Some postgraduate work: 5
40-59: 27	Unknown: 20	College Graduate: 52
60-74: 7	TOTAL (participants): 120	Some College: 23
Unknown: 20		High school graduate: 5
TOTAL (participants): 120		Unknown: 20
		TOTAL (participants): 120

Usability Test A

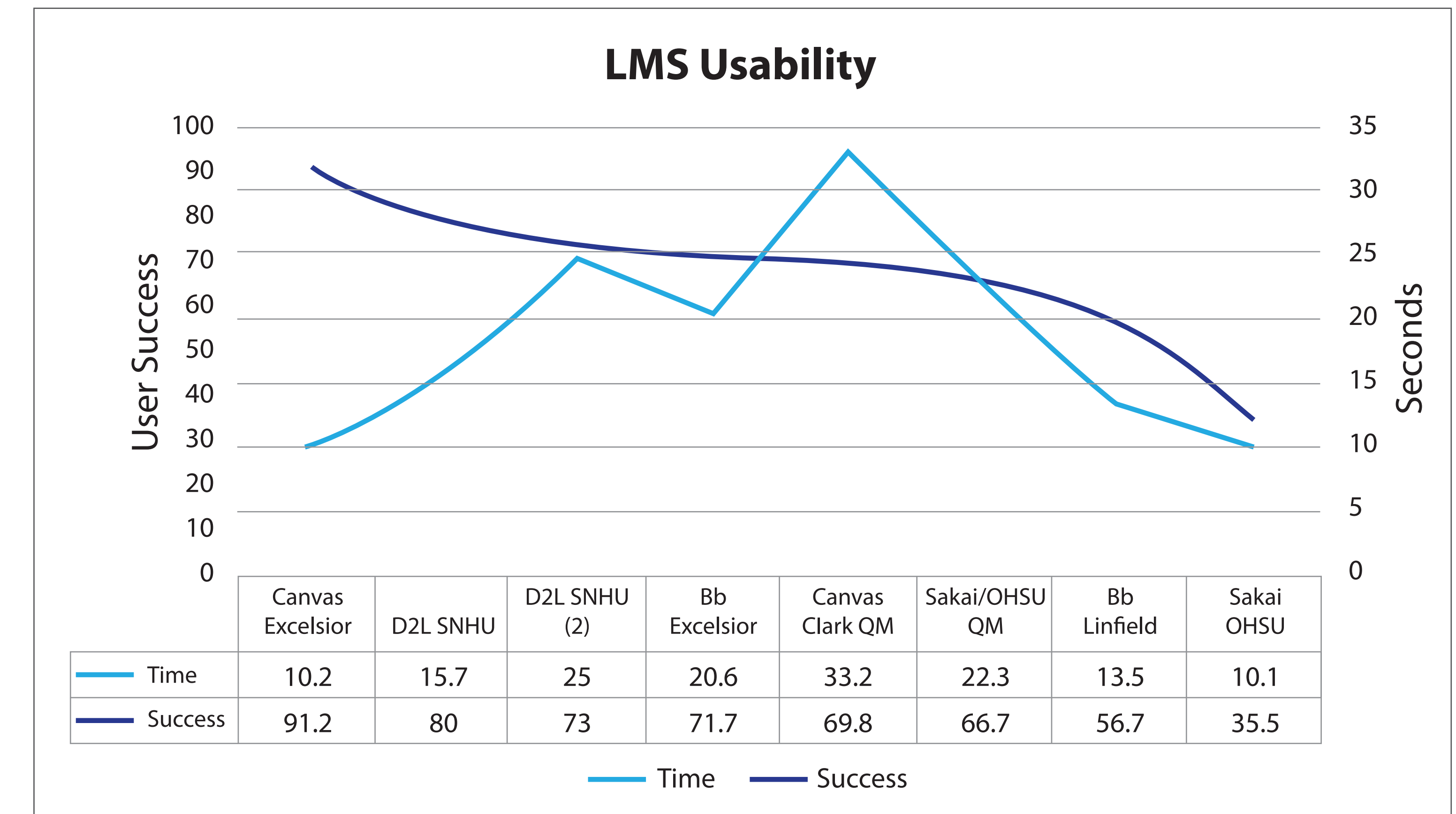
You are about to begin a course. Click on this page where you would go to start.

LMS/Institution	Percent successful	Time Spent
Blackboard/Excelsior	72%	21s
Canvas/Clark College *QM	70%	33s
D2L/SNHU	80%	16s
Sakai/OHSU *QM	67%	22s

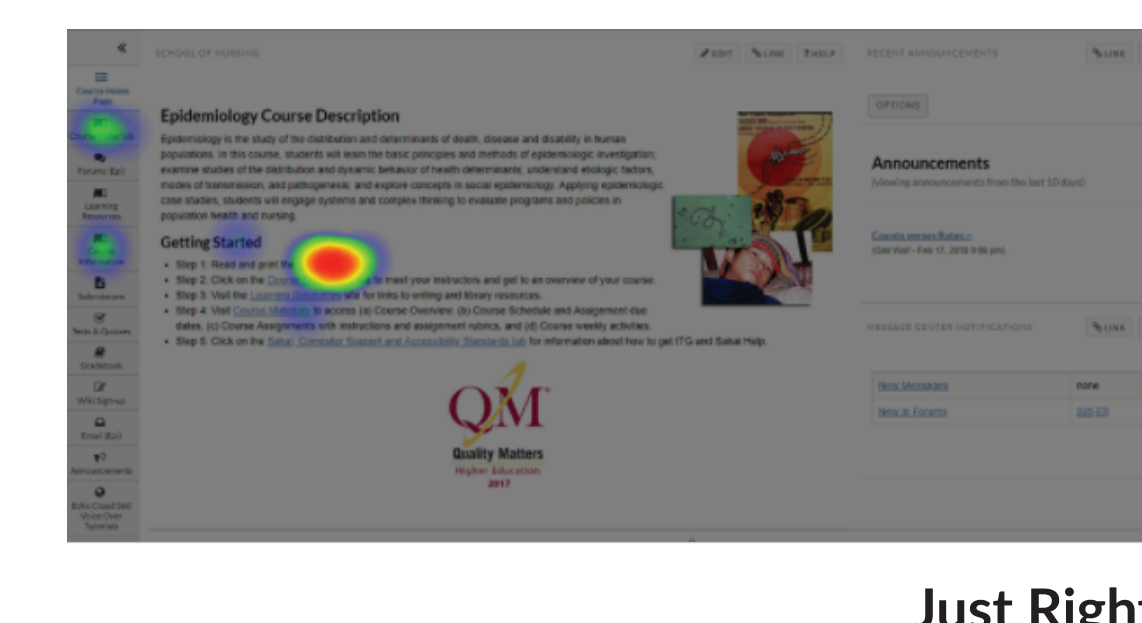
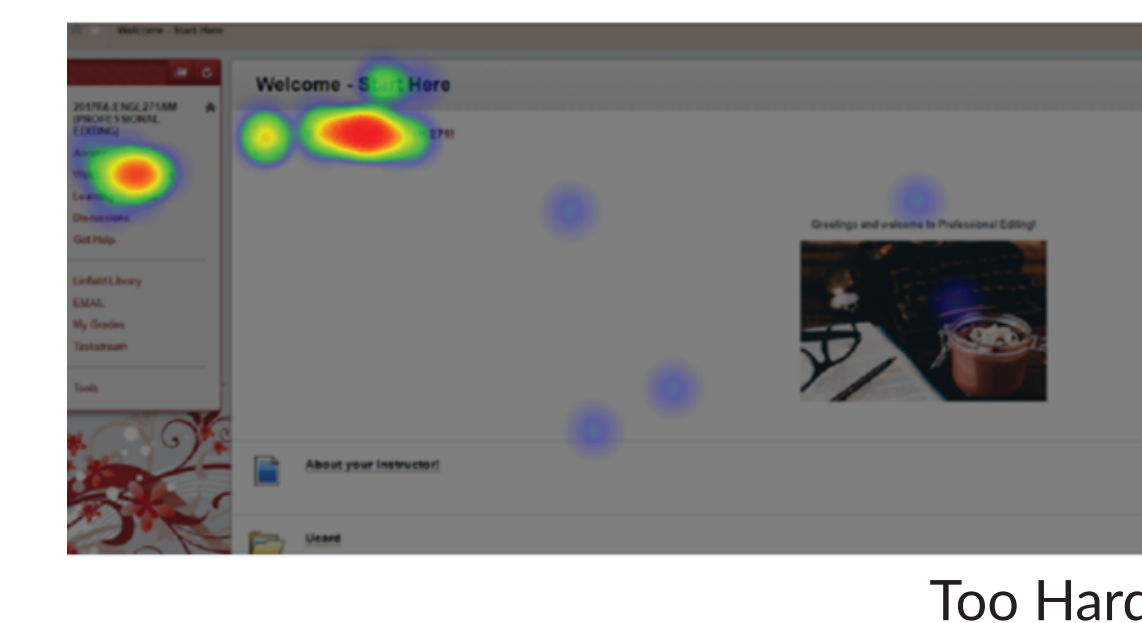
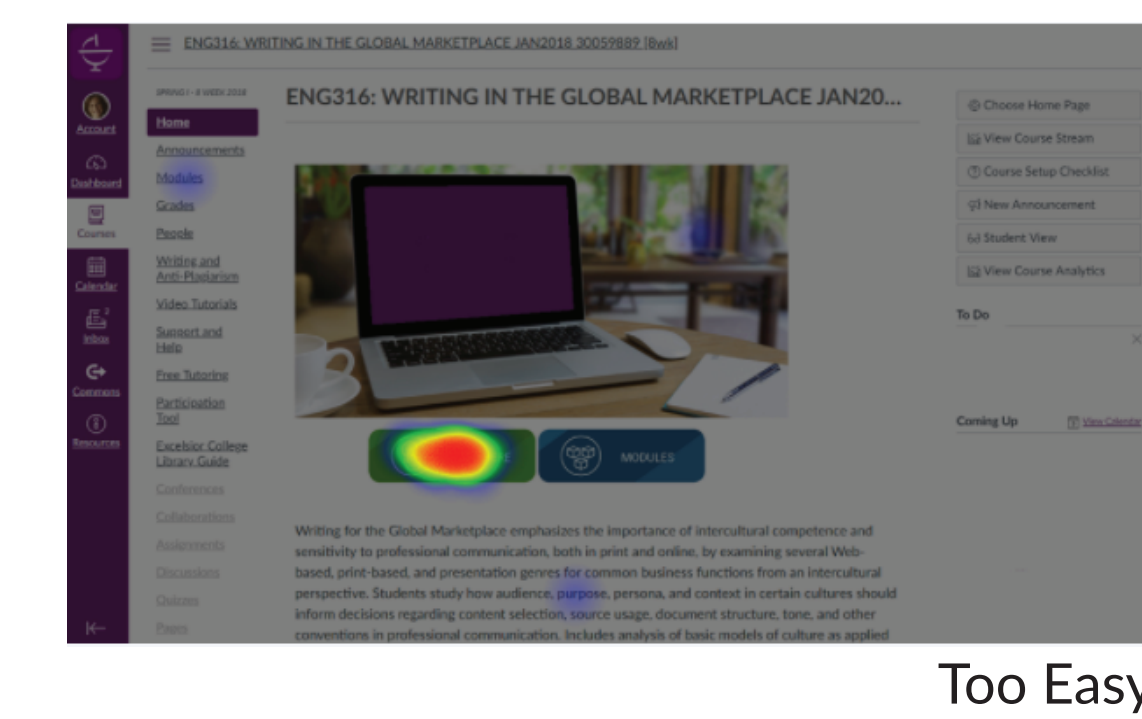
Usability Test B

You are about to begin a course. Click on this page where you would go to start.

LMS/Institution	Percent successful	Time Spent
Blackboard/Linfield	57%	13s
Canvas/Excelsior	91%	10s
Sakai/OHSU	36%	10s
D2L/SNHU	73%	25s

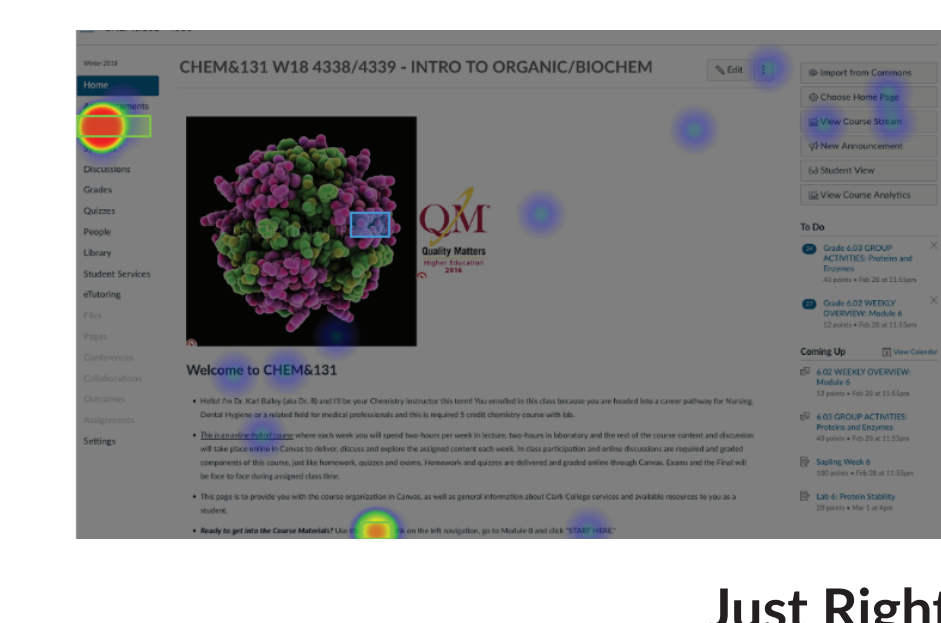


TOO EASY ● Lack of Content
TOO HARD ● Ill-structured Design



Conclusions

- Individual course design had a greater effect on navigation and usability than the LMS.
- The most successful overview page included a large green Start button; users took the least amount of time to perform the task, which may suggest disengagement with reading content.
- The two Quality Matters courses had a high success rate and most time spent on page.
- Usability is not learnability; learnability of a LMS is not learnability of course content.
- Quality matters!**



References

Allen, Elaine I and Jeff Seaman. 2017. "Digital Learning Compass: Distance Education Enrollment Report 2017." Babson Survey Research Group and Quahog Research Group, LLC.

Edutechnica. 2018. "LMS Data - Spring 2018 Updates." Edutechnica.com. https://edutechnica.com/ (retrieved April 9, 2018)

Michaud, Diane. 2013. Copyright and digital rights management: Dealing with artificial access barriers for students with print disabilities. Feliciter 59, (1) (02): 24-25,30, https://search-proquest-com.contentproxy.phoenix.edu/docview/1286679756?accountid=35812 (retrieved January 10, 2018).

Pew Research Center. 2018. "Internet/Broadband Fact Sheet." PewInternet.org. http://www.pewinternet.org/fact-sheet/internet-broadband/ (retrieved April 9, 2018).

Saenger, Peter. Space Between Words: The Origins of Silent Reading. Stanford, CA: Stanford University Press, 1997.

Svinicki, Marilla. "The Goldilocks Principle: 'Just Right' and Beyond." The National Teaching & Learning Forum 24, no 4 (2015): 10-11.

