

# **The Effectiveness of Canvas for the Students and Faculty of IU Bloomington**

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## **Introduction**

Indiana University – Bloomington (IUB) is the flagship campus of Indiana University that serves undergraduate, graduate, doctoral, professional, and lifelong students. IUB has the mission of creating, disseminating, preserving, and applying knowledge (Indiana University – Office of the Vice Provost for Undergraduate Education, 2022). This is achieved by IUB’s commitment to research, scholarship, arts, creativity, and having an impact on and serving the greater community. This paper will look at the effectiveness of Instructure’s Canvas™ which is the chosen learning management system (LMS) that is used to optimize the scholarship component of the mission of IUB.

A LMS is a software-based platform or web-based technology used for creating, managing, and delivering courses, quizzes, assignments, and files for educational courses and outcomes (United States – Department of Education, 2021). Many of the issues in higher education that have come up can be solved with technological solutions such as an LMS (Burrack & Thompson, 2021). Majority of the LMS on the market support integration with traditional face-to-face courses, hybrid courses, and fully 100% distanced courses. Higher education institutions can utilize LMS to plan, assess, monitor, and assess in the progress of student learning.

In the higher education community concerned with educational technology there is much debate over which LMS is the most effective for university institutions. Canvas™ by Instructure is a cloud-based platforms that is in most of these conversations and is noted to be best for “easy learning and productivity” (Research, 2022). Some of the key features of Canvas™ noted by several different organizations or researchers is the content creation, gradebooks, privacy, customizations, security, integrations, and cloud hosting (United States – Department of

Education, 2021; Research, 2022; Alier, et al, 2021; Burrack & Thompson, 2021). Cloud computing as it is known in the modern context arrived in mainstream vernacular in 2006 and Canvas™ quickly reacted to this and was able to capture 40% of the market share as seen in Figure 1 (Massachusetts Institute of Technology, 2011; Review, 2022; Alier, et al, 2021).

IUB is not recognized as an early adopter of new innovative technology when looking at the other institutions in the Big Ten (B10) Conference (Full List in Appendix I). IUB is risk averse when making university-wide changes and often allows other B10 member institutions to adopt new technology first and IUB can observe before making the transition themselves.

Canvas™ was implemented after a two-year-long transition at the University of Michigan in the Fall of 2016, at Ohio State University in Spring of 2017, at Penn State University in Spring 2016, and at the University of Wisconsin in Spring of 2017 (The Michigan Daily, 2016; The Ohio State University - Office of Distance Education and e-Learning, 2016; Pennsylvania State University - Provost and the Vice Provost for Information Technology, 2011; University of Wisconsin - Madison - Information Technology, 2016). Canvas™ was fully functioning at IUB in the Fall of 2017 which follow suit of both B10 institutions, the Ivies, and majority of higher education institutions (Instructure, 2019).

The heuristic evaluations and usability tests that were conducted for this paper were done so to determine if Canvas™ meets the stated functions of “connects teachers, tools, ideas, and students, and then stays out of the way..., and makes teaching and learning easier, enabling you to take education to a higher level” that can be viewed on One.IU (Indiana University, 2022).

## **Goals, Methods, and Considerations**

### **Goals:**

The goal of the project is to cover the major target audience for this product, which is students and instructors, in order to evaluate the product from two different perspectives. This goal was achieved by conducting Usability tests to understand how users interact with the product which would help us pinpoint the useful features as well as understand the struggles during the use. Furthermore, heuristic evaluation helps to improve usability by reducing design flaws without having to directly interact with the users. These procedures will help us understand the integration of Canvas™ at IU.

### **Methods:**

The Usability tests were conducted in person where we asked participants to use Canvas™ on their preferred system and asked questions as they performed their tasks. The choice of participants for Usability tests were novice users which was an intentional decision as an expert user would not be able to provide the flaws compared as they would have been habituated with their routine use of Canvas™. As we conducted the interviews, we asked the users to Think aloud as they performed the task which helped us understand the thought process of the user. The heuristic evaluation was done by sending out a google form to the evaluators with questions including the Likert scale as well as open-ended questions. The choice of heuristic evaluators were expert users of Canvas™ as they would provide detailed feedback on overall effectiveness. The timeline of sending the heuristic question to the evaluators was done after we conducted the usability tests. The reason behind this was conducting usability tests provided us with a clearer idea about the expectations and the goals of the user, therefore helping us to better design our custom heuristics.

## **Considerations:**

There were some considerations that we kept during and after finishing up with our interviews and evaluations. Firstly, due to ethical concerns we decided not to reveal any personal information about the participants by keeping them anonymous, which would also respect their privacy. Furthermore, will observing the Canvas™ account of the users during the Usability tests we decided to reveal any information that we observed such as information of the students for the Associate Instructor or grades of the graduate student. Finally, we understand that each participant would have personal bias and preferences which the majority of target audience might not have therefore, we generalized the likes and dislikes of the participants with some practical consideration.

## **Procedures & Results**

### **Heuristic Evaluations**

The results of a heuristic evaluation yield a good but not necessarily optimal result as compared to the exact method approach, but the latter is of too great of magnitude to be feasible which is why heuristics are used for real optimization problems (Marti & Reinelt, 2022). One thing that has been noticed is that different researchers apply heuristics differently than others (Romancyia & Pelletier, 1985). For the purpose of this paper the definition of heuristic evaluation is a process where experts use conventional guidelines to measure the usability of a user interface in interviews often with walkthroughs (Interaction Design Foundation, 2022).

### **Heuristic Sub-Questions**

<b>Match Between System and the Real World</b>	
Overall Rating for the Section	
1 Worst.	10 Best
Are the names of menu buttons names easier to follow or intuitive?	
Does the title show which page you are correctly?	



<b>Navigation Across the Website</b>	
Overall Rating for the Section	
1	10
Worst.	Best
Does using one section help you understand other sections on Canvas?	
Is it difficult to move on to different section on Canvas?	
Easy to understand your location on the site (breadcrumbs)	
Is there a limited number of buttons & links?	
Is the navigation consistent?	
Does the organization of information make sense?	
Does the screen size and resize appropriately?	
<b>Overall</b>	
Any other thoughts?	

## **When/Where/Whom**

The heuristic evaluations were both received from the evaluators on November 7, 2022, in the afternoon at 3:30PM EST and 4:00PM EST. Heuristic Evaluation #1 was conducted with a recent graduate of the Master of Public Affairs Program in the O'Neill School of Public and Environmental Affairs who is now a Data Analyst for the renewable energy company Invenergy in Chicago, IL. Heuristic Evaluation #2 was with an Adjunct Instructor in the O'Neill School of Public and Environmental Affairs and a Data Engineer at the University Information Technology Services (UITS) for Indiana University in Bloomington, IN. These two evaluators were selected as credible experts by meeting the criterion of more than 2+ years of experience with Canvas™, working in the technology sector, and having experience using other LMS at either IUB or at other higher education institutions.

## **Process for Heuristic Evaluations**

<b>Match Between Systems and the Real World</b>	
Allows for professors and students to be more in-sync regarding course expectations and how to meet learning outcomes.	
<b>Consistency and Standards</b>	
Although there is a certain level of customization on the professor side students should be able to navigate each course by different professors.	
<b>Flexibility and Efficiency of Use</b>	

How long it takes users to get habituated to determine efficiency.
<b>Execution of Daily Tasks</b>
Because the main purpose is for regular use and execution of daily tasks is the highest priority and desired outcome for Canvas.
<b>Navigation Across the Website</b>
How the users navigate through their tasks and is the navigation intuitive and seamless for flow paths and progression.

Each of the heuristics that were evaluated were selected for the reasons that are stated above to assess the effectiveness of Canvas™. Due to scheduling issues and timing constraints the heuristic evaluations were conducted through the survey administration software Google Forms rather than the preferred method of in-person. The advantages of this method of conducting the heuristic evaluations are that all responses were captured exactly as the evaluator intended. The Google Form was constructed to include a likert scale of 1-10 to evaluate each of the heuristic sections as a whole and each sub-question included an open-ended paragraph section for the evaluator to record their response. Heuristic Evaluation #1 included more information that allowed for an assessment of Canvas™ as they included more detailed answers for each sub-question whereas the evaluator for Heuristic Evaluation #2 chose to respond in the binary yes-no format as if it was framed as a closed-question. The combination of detailed open-ended responses and binary yes-no responses provided insight in certain ways but created an inconsistent range of responses. Heuristic Evaluation #2 only including binary responses is a limitation of this analysis of the effectiveness of Canvas™ as it does not provide specific details for which to derive conclusions and recommendations.

The results of the heuristic evaluation responses showed that the cons could be simplified to say that the flow path was not helpful as the user gets lost and cannot easily determine their location on the page, the help menu button is not helpful as the evaluators would prefer targeted help buttons for specific pages in Canvas™, and evaluators would like to have the ability to

navigate back to the starting page of each section instead of being taken all of the way to the main homepage. The identified pros from the heuristic evaluations are that the menu button labels, language used, and task specific buttons are clear to understand and intuitive, it is easy to move around the Canvas™ page and the overall organization is clear, and that the color scheme is consistent, and the evaluators liked how the main navigation buttons are always available in the menu on the left side of the screen. Both heuristic evaluators have said that Canvas™ is a much more effective LMS than others that are being sold on the market.

## **Usability Tests**

Usability testing involves evaluating a design's usability with a sample of people who represent the intended audience. It usually involves observing users as they attempt to complete tasks and can be done for different types of designs. It is often conducted repeatedly, from early development until a product's release. For Canvas™ we focused our Usability tests on the 2 major target audiences which are instructors and students. Both of our tests were conducted in the learning commons at Wells Library which was a little over 90 minutes. These participants provided us with two different perspectives that would be useful to assess the overall effectiveness of the product.

Our first test participant was an Associate Instructor who teaches the course Interpersonal Communication: A Cultural Approach at the Anthropology department who has used Canvas™ for 4 months and does not have any prior experience in using any similar product. The second participant for our Usability test was a second-year graduate student pursuing his Master's in Data Science who has been using Canvas™ for a little more than a year and who also does not have any previous experience with using any similar application. Both participants were

interviewed while they were using Canvas™ and they were asked to Think Aloud as they performed their tasks on the website.

The interview started with them answering a few Pre-screening questions, which included questions about their background, the platform on which they use the application, operating system, frequency of use, etc. After getting answers for these questions, we get the context of how the participant interacts with the product. The next set of questions was categorized as In-test questions which included questions regarding how they use Canvas™, the task they perform, how they navigate, the troubles they face during the interaction, etc. This set of questions was a guideline of what needed to be asked but we did not stick to just these questions as most of the important insights that we received were from the follow-up questions. We concluded the interview with the Post-test questions where we asked for their feedback on various features and functionalities of Canvas™ such as asking them to rate Canvas™ based on aesthetics, navigation, the difficulty of use, etc. Following are the tasks that were performed with the Usability test participants.

### **Usability Test Tasks**

#### **Pre-Screening Questions**

- *How long have you used Canvas?*
- *What is the operating system in which you use Canvas?*
- *Do you use Canvas on your mobile device?*
- *Which do you prefer?*
- *How often do you use Canvas?*
- *Had you used Canvas before coming to IU?*

#### **In-Test Questions**

- *Are you usually already logged into Canvas?*
- *How do you feel about the process of logging in?*
- *What features of Canvas do you most often use?*
- *What feature is the best on Canvas?*
- *What feature is the least effective on Canvas*
- *If you could redesign something in Canvas, what would it be?*
- *Walk-through of your typical day on Canvas?*

#### **Post-Test Questions**

- 
- *What would you like to see added to Canvas?*
  - *Rate the difficulty of Canvas*
  - *Rate the Aesthetics of Canvas*
  - *Rate the Navigability of Canvas*
  - *Rate your overall experience with Canvas*
  - *Rate your overall opinion of Canvas*
  - *Any other thoughts to include on Canvas?*
- 

### **Usability Test 1 – Associate Instructor**

The information that we collected from the Pre-Screening questions was that the user preferred to use the application on their laptop instead of their Mobile phone, the operating system that they used was Windows, and they used Chrome browser. Further, we came to know that there were two different ways of using Canvas™ one was during their class in a different system and the other was outside the classroom which was on their personal computer. We asked them to take us through a walkthrough of their daily tasks which prompted us to ask follow-up questions.

Starting with in-class use of Canvas™, there were majorly two tasks that were performed in Canvas™ which were attendance and discussion. They were fairly satisfied with the Attendance feature as they liked having an option to mark for lateness, assigning seating feature (for discussion groups), and having option of Calendar to be able to change the status on a particular date if required. Further they used the discussion section in which they preferred to make some changes such as they would prefer to have such as the discussion section to show real time update of the student's submission and preferred to have a feature to turn off discussion notifications.

Outside the classroom they used Canvas<sup>TMTM</sup> for grading, setting up modules, making announcements, and uploading slides and course materials. The feature that they liked here was the Speed grader where they could grade assignments without accessing submissions for

individual students. For the modules section, one major problem they faced was that sometimes uploading assignments to modules did not reflect on the assignment section, so they had to upload the assignment twice in such cases other than that they liked the student view feature in this section. For announcements, most of the tasks were straightforward and easier to follow, but they said they would like to have a feature to post announcements to all their classes from one place. For uploading materials, they prefer to use Google Drive instead of the files section in Canvas™ because the file section did not allow to make changes dynamically to the slides and docs that were uploaded. At the end, their overall rating of Canvas™ was 7.5/10.

### **Usability Test 2 – Graduate Student**

The Pre-screening questions for our graduate student participant revealed some information such as they prefer to use Canvas™ in Chrome browser on the mac operating system, their frequency of use was daily, they majorly used Canvas™ on their personal computer except when they are checking their grades and feedback on their assignments. Similar to our first participant we asked them to take us through their daily tasks and requested them to think aloud as they carried out their tasks.

Starting with logging into Canvas™ the List view of the Dashboard was the most liked feature of Canvas™ for this user. The tasks for which the user usually used Canvas™ was to access the course materials via modules, get course files, submitting assignments, check grades, and accessing videos on Kaltura media. Starting with accessing course materials they found the organization of the modules easy to follow, although that depends on how instructor arranged it. Next, files were one of the most used tabs was the organization of the file hierarchy was intuitive and they liked the design of this section, but they would prefer a notification when any new file is being uploaded into this section. There was one feature that annoyed the user every time they

submitted their assignment which was that they were not able to view the Problem after the assignment was submitted when accessed through the dashboard. The user had a neutral stance for the grades and Kaltura media section which they use on rare occasions.

The user had some troubles when viewing the grades and feedback on their Mobile phone. The issue was when they viewed their feedback, they were unable to view the problem and their submission altogether therefore they had to check the problem and then come back to the feedback section to check the comments. Finally, we asked them to rate their overall experience with Canvas™ which was 7/10.

### **Conclusions & Recommendations**

The recommendations for Canvas™ to incorporate to further success at IUB are to include a notification system for feedback on assignments and uploads to files, an AI help chat box to create a utilized help feature, and to create a tutorial course or video on how to use Canvas™ to ease the steepness of the observed and evaluated initial learning curve of Canvas™. The overall sentiment regarding Canvas™ is that it is an effective and easy to use LMS for both students and faculty to achieve the scholarship component of the IUB Mission.

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## Appendix

## Appendix I.

## *Big Ten Universities List*

University of Illinois  
Indiana University  
University of Iowa  
University of Maryland  
University of Michigan  
Michigan State University  
University of Minnesota  
University of Nebraska-Lincoln  
Northwestern University  
Ohio State University  
Pennsylvania State University  
Purdue University  
Rutgers University-New Brunswick  
University of Wisconsin-Madison



## Appendix II.

### Usability Test #1 Notes - Vivek

- Class During Atlindr, Canvas and files
- Editing, grading, assignment, call screen, reviewing, discussion.
- Anything like canvas - Not used products like this before
- Familiar with canvas
- Folder view : was easier, than screen
- Check student view
- \* Module is posted. Students can't
- Files: Reading section : Module <sup>turn on</sup> to check the reading

Good feature: Publish Module to look at canvas

When figure out:  
(student view)

Good	Bad.
- Attendance - Mark all.	- Publishing.
- Grading - Speed grades manual (Sequence)	keep track of most stuff.

Walk through

- Protect the Duo Security in unknown system
- Personal Computer: Password/ID can be so easy.

Class

- Slides on drive:

⇒ Student in the AZ Instruction site  
(by director)  
to download materials for the class.

⇒ Default template : Able to make changes e.g. office hours, timings.

⇒ Choose to hide the buttons on other features.

⇒ Is good feature:

Attendance

⇒ Feature for lateness.

- Starting feature.

- More option for calendar

⇒ Attendance features

### Files : Slides

- No edit feature for file & for on canvas. (Using Drive Instead)

### Discussion

- Buttons : to be more real time.

- Options : Like -

- Buttons checkbox given for team.

### - Feature Notifications management

Module: Creating: e.g. Assignment post separately  
not under modules

- Modules Uploading assignment in modules does not come correctly under the assignment section.

- Published exam forum are still or impeded to other sections.

### Affair Class

Assignments: by

- Download submission: (For prof. who prefer feedback by paper)

Speedgrader

Grade book → Student → Assignment

↓

Therefore, use Speedgrader.

Prefers:

→ Notifications: for in-pdt comment  
↓ in comments: For student

- Submission: Late days. (~~Takes  
for a few  
the student~~)  
Gradebook
- Color coded for grades to be dropped.
- Color coding: The colors are not better.
- For hiding & releasing, changing different grade.
- Announcement
  - Schedule Assignments.  
~~Bad feature~~
  - Post to: All Section selected (cannot send announcement to multiple sections)
    - => Multiple announcement
      - Can't be scheduled.

### Inbox

- No's [2] showed intent of index even after reading.
  - Better to use ~~less~~ announcement from students.
- 
- Student & Prof: To Do list can be separate
  - Canvas: Student ~~area~~ / Professional (Use word)
  - Quiz

### Group Score feature (Protocol to be added)

- In the group section itself instead of elsewhere.
- Exam: Assign to party (function)  
add 1.

- student view by  
→ Protect a particular Student.
- Buttons Unprotected for Student
  - - Module upload  $\rightarrow$  Not available in assignment
  - - Not signed when Exam grade updated
  - - Difficulty = 2  
Assistan<sup>n</sup>. = 9.5
  - - Product rating - Satisfactory
- One thing to say = Have course update  $\rightarrow$  L1.
- - Took a week to get used to
  - - Assignment service - help/fu for assignment.

5:03pm

pre-screening

role for canvas → instructor  
using since August 2022 (student and AI)

no mobile use

uses windows

difficult to use mobile

uses canvas ~ 1 per day  
has classes M W

attendence, assignments, course  
materials, announcements

extensive NW

building exams → files

multicourse announcements

reviewing discussion posts

easier to understand instructor  
mode

steep learning curve

does use student view

↳ great feature

computational linguistic student  
interspersed commun. for anthro. AI

everything has a publish option  
feedback from previous instructors

large learning about the  
beginning

locked features

shows what the student view

attendance best feature  
most effective  
speed grader → sequence format

publishing is the least effective  
too complicated of a hierarchy

### Walk through

go straight to canvas (not one.u)  
prefers campus computers require  
authentication  
(usually is logged in)  
does the logging in before class  
uses slides for class

canvas does not allow to save  
changes dynamically

two courses

has a canvas course to learn  
how to teach

given a template by Director

modified the home section  
could change (her discretion)

course details, office hours

also changed the navigation (left)  
keeps the panel clean  
and selective

what could have been easier  
to customize?  
no troubles here :)

arrive at class 10 min before  
to set up attendance, slides

discovered the mark all after day 1

they can make and set a  
scaling chart that can be  
available to students to see

can go back to previous days

teaches from slides in Drive

Discussion

several diff. options

Files

has to edit externally

so uses  
Google  
Drive

does not dynamically update  
discussion posts

REALLY LIKES

↳ users must post before seeing  
replies

all notifications go to email  
either all or nothing

would prefer if could select  
notification management

In Class

discussions

attendance

→ tedious

checks student view for accessibility

modules is good for students to  
map out what they're doing  
but cumbersome for instructors  
very confusing → can upload never diff. headings  
sometimes must upload twice

uploads to modules creates a mess  
of publish and unpublish

imports from class to class  
defaults to publish

prefer Speed Grader  
class dependent  
very theoretical assignments  
seeds feedback through  
Speed Grader  
can download submission button  
bridge an age gap  
but also preference personal

w/o Speed Grader 3 step process  
tedious and repetitive

can hide/unhide grades

Speed Grader has more space  
to view → no notification

can comment both directly in  
the assignment and the side

instructors do not get notifications  
from inside document

would prefer a comment  
notification for both student  
and instructor

SpeedGrader shows when submissions  
are late

Gradebook colors (statuses)  
dependent on the class Red  
shows the assignments "dropped"  
assigned by Canvas  
duplicates are shown in blue  
this can be changed / altered  
lots of colors to keep track of

not sure what it shows when  
the overall grade is hidden  
popup windows → students have  
a different view

layout of the gradebook a  
lot easier

Gets announcements ready a  
few days in advance  
schedules for a day and a time

option to post to all sections  
but only one (only shows the  
section that is in)

Does not work for all sections

↳ use multicourse announcement

↳ warning message

Assigned as 2 courses not  
as sections

A lot of inbox messages

Responds to students who use  
inbox by inbox

Does prefer inbox b/c less  
emails to sort through

cannot filter down to each student

confusing w/ showing #s for messages  
in thread

multicourse announcement vs. message

↳ on homepage  
and shows as unread

Shows To Do for Grading in each section

when in Homepage shows her  
submissions and her assignments  
to grade → universal design

Is canvas more student friendly  
or instructor friendly?

both but uses more b/c instructor  
learning the instructor side  
helped teach the entire site

wishes for customizing in Canvas  
but can see that would  
create too much confusion  
or complicated

iPhone → HEIC files  
not submittable type on canvas

Courses section → easy for putting exams

Groups → assign people

easy drag and drop

Test student (default for Canvas)

↳ does not do anything

Canvas could do something better

Assigning things to Test Student

to help → modifiable Test Student

Test Student can only see assigned to everyone

What would she do for students  
on Canvas?

clear up the difficulty of syncing up

modules, quizzes, exams, and assignments

6:38 pm

Example of how they're not in sync

re upload everything → multiple places  
one way connection publishing and unpublishing

### Exams

can make changes to questions and points  
but not after started or post exam

hassle → default ones and create own

Outcomes → canvas built in

### Rate Canvas 1-10

Difficulty ( $\downarrow \uparrow$ ) 2

Aesthetics (ugly pretty) 9.5

Overall ( $\times \checkmark$ ) 9.5

Navigability (easy hard) 7.5

would change dynamic features  
does not overwhelm in feature offering

### Grading

can set a rubric (range of points)  
only downside is create for each  
not super easy w/ theoretical

### Appendix III.

#### Usability Test #2 Notes - Vivek

UT-2 (Student) MS. DS

Screaming question

- Role : Student
- How long : 3 sems.
- Mac,
- Both - phone & laptop.  
    ↓                          ↓  
    → Grades.                 Assignment  
    → Feedback                 Docs, Videos  
                                  Online Scans  
                                  → Timeline

Phone: Assignment & Feedback can't view together bad design.

Browser: Tab open, views everyday  
(Especially, while canvas)

Chrome Browser

- ⇒ Goes to one.iv → Canvas.
- Logged in mostly.
- ⇒ List View preferred  
(Don't know card view)
  - Used to the list view
    - Assignments - Submitted

## Tasks

Calendar : Just sum beginning.

Courses  $\Rightarrow$  Offline

$\Rightarrow$  Home Page : Points all

Forum use  
grading, syllabus (ant class) &  
zoom link.

People : + During group assignments  
+ projects &  
- know about the TD.

Frag. vsp:  
Assignment, files, quizzes, grades

People : Bio - A Format is  
preferred.

- Instead of opening new  
tab for each person, a  
collapsible dropdown would  
be helpful.

## Assignments : Most used Tab.

- Better to click in the browser.

\* - After Submission, can only view pdf & doc. not other files like html.

good After submission, cannot view the questions from the dashboard view - Have to go through assignment section.

Good to have - Would like to know number of quizzes. Features with modules showing the no. of quizzes & assignments.

Offline : Modules → Resources. (less used)

## Files : Second Most Frequent

- Good naming convention required  
→ Usually for lectures.

- Any notification service in files would

- be helpful to access it at a time.
- - A good transition while previewing files.
- - Prefer  $\Rightarrow$  Preview  $\Rightarrow$  Download
- Discussion - Helpful - can't view previous discussion
- Online Modules:
  - course.
  - - Don't like when modules and are opened in the same tab closing all the other views.
- Grades
  - - Each assignment - prefer scores instead of a '✓' & then clicking on it to view scores.
  - - Didn't know - can enter 'what if' scores.
  - - Prefer to see the class median & avg.

- No column names the feature

Picture feature : Dashboard View  
(Good for knowing upcoming stuff)

- Not anything like canvas used before.

Kaltura Media : To view lecture & video.

One thing to Add :

- Weekly Assignment View

- Navigating commands : F.S  
1 - easy  
10 - diff..

- 1 month to get used to.

- A tutorial would be helpful.  
before ~~am~~ using first time.

Overall rating : 7

Assignment Section : Clickable  
Upload button is not visible.

Offline class - Doubts about common help from parents.  
~ Online - ask friends.

5:35 pm

2<sup>nd</sup> year  
Masters of Data Science

11/4

3 semesters using Canvas

Uses Mac

Uses both

- mostly laptop for assignments and videos, files, submissions
- checks grades on mobile
- checks timelines for assignments on both but prefers laptop

Assignment feedback on mobile

- can't see the assignment properly → scrolls → but more convenient

Issues with checking assignments after they've been submitted

Usually doesn't close Canvas

but accesses at least everyday

Prefers keeping it open → timeline

Walkthrough

Uses Chrome

Accesses through one.in

Dashboard is in List View

Didn't know card view existed

↳ looked at both and liked list because shows to do

this view lets you look into future to see what is coming up

Doesn't use Groups  
 Calendar in the beginning but  
 not a fan

Uses Courses in the left menu  
 Inbox for sending page

Offline course

Home and Syllabus are the same  
 ↗ weird

Read all information the first time  
 and that's really it

Prefers all text there and not  
 a dropdown so reads everything  
 b/c might not if there dropdown

Uses the Home/Syllabus page for  
 zoom links, grading policy,  
 and semester schedule

Uses list view Dashboard for Assignments

People tab to view people for  
 assignments or team creation ✓

Uses files, assignments, quizzes, and  
 grades a lot → most of the time  
 ↗ IU Photo Roster

Include more information on people  
 would prefer collapsible bio information

Assignments (most used tab across courses)  
looks for feedback here if it  
cannot be accessed by mobile  
↳ prefers mobile though  
the computer is a larger view  
can only view pdf or docs in  
the preview (html must be  
downloaded again)

Information about the Assignment  
is not available when accessing  
through Dashboard → has to  
go through Subject → Assignments  
Undated Assignments → complete on  
your own time  
Likes that you can switch between  
the assignment views

If you haven't completed / started  
module can't see the upcoming  
quizzes in Assignments  
↳ hard to plan based on this  
hard to know the amount  
of time

would like to know # of things  
customizable to better the learning  
In online courses the modules tab  
is more heavily  
b/c need hierarchy by week for  
the expectations

1/4

## Offline Course / Modules

modules was supplementary  
Notes they don't include Modules  
tab and you'd find in Files

can only preview pdf and docs

## Files

is alphabetic  
but has to go through to find  
what is inside

## Better naming convention

Assignments

Datasets

Lecture Slides

Does not get a notification when  
files are added → would like  
Professor accesses the slides for lecture  
from the Files tab

Uses keys to try to scroll down  
and switches files without  
much notice

Prefers to preview files then download  
→ horrible naming scheme

would prefer to be able to see  
videos on the Pages → what's next

hesitant to go back and forth in  
Modules

doesn't mind discussion locks  
↳ original ideas and fresh  
mind b/c not seeing others  
until submitted

### Modules

wishes that Quizzes would open in  
a new tab  
Would also like dropdown  
doesn't want the tab to close

### Quizzes

some courses have quizzes in its  
own tab some are in modules

### Grades

difference b/w mobile and web  
in completed and ✓ and 10/10  
has to access grades on web  
b/c shows 10/10 ONLY

Do you use Grade Testing what if  
could be useful but doesn't  
use

Didn't know about it

wishes could see min, median, max  
for the grades

feedback icon is not very intuitive  
no column headings to know or not

most valuable → dashboard view  
can see the plan for 10 days

Does not use all the features on  
Canvas

Has not used anything like Canvas  
before

Could access lecture videos from the  
Kaltura Media Gallery but mostly  
to ensure full understanding of  
the topic

If could change one thing about  
Canvas would be  
dashboard list view  
Week view (not just TODAY)

navigate canvas  
1 easy      10 hard      7.5/10

steep learning curve  
took about 1 month and would  
ask others for help  
short little tutorial video

6:54 pm

1/4

## Overall opinion of Canvas

easy access to the course  
and can better the experience  
of learning and the understanding

overall rating of Canvas

1                    10  
en                    FANTASTIC

7/10

Never connected to Google Drive or  
the other option

Uploads from local device

Only uses Drag a file

would ask professor for offline  
class help and roommates/friends  
for online class help

## Appendix IV.

### *Heuristic Evaluation #1 Responses*

<b>Match Between System and the Real World</b>		
Overall Rating for the Section 1 Worst.	10 Best	8
Are the names of menu buttons names easier to follow or intuitive?	Yes	
Does the title show which page you are correctly?	Yes	
Are the tasks of menu buttons consistent with its names or is it confusing?	Confusing	
Do the menu buttons on the left side of the screen help indicate your current location on website?	Yes	
Are all abbreviations and acronyms explained?	No	
Is the language used familiar to the users' language?	Most of the time (90%)	
<b>Consistency and Standards</b>		
Overall Rating for the Section 1 Worst.	10 Best	8
Are the colors consistent across the website or somewhere where it feels out of place?	Consistent	
Is the page navigation similar to the navigation on other pages?	Yes	
Are the main navigation items always available?	No	
Is all information needed at a particular point visually present?	No, ineffective breadcrumbs	
Is the logo in the header displayed on every page that allows for the user to navigate back to the home page?	Yes, but to main home page not course page (I would get annoyed)	
Does the menu contain intuitive sub-menus?	Sometimes but depends on the professor and how they set it up	
Are the icons intuitive?	Yes, but hardly used	
Are the menu labels non-generic?	No, they should have more detail	
Is the size of the texts appropriate?	Yes	
<b>Flexibility and Efficiency of Use</b>		
Overall Rating for the Section 1 Worst.	10 Best	3

Does the flow path help you accurately understand your location in a section?	Zero flow path. I get lost in the thick of it
Does the system allow for experts to use shortcuts?	Yes, but sometimes hindered my task
Does the system allow for customization?	Yes, changed my colors with coding. Other than that no
Does the system allow users to approach tasks in multiple ways to suit their working style?	Yes, but all ways are unclear. Lacks direction. Doesn't match my working style
Can experienced users take advantage of features designed to speed up commonly performed actions?	Yes, but still complex way to perform actions. Have to remember how. Sometimes different based on other professors set up
Does the system allow for the user to go back through the flow path, or does it take the user back to the beginning?	No, when hit back button taken to home page
Does the user have good control of the interface?	No, that's professor side. I can't customize
<b>Execution of Daily Tasks</b>	
Overall Rating for the Section 1                    10 Worst              Best	4
Can the user access the features from multiple origins?	Yes, but very confusing
Are the desired features accessible over multiple platforms? (Web and Mobile)	Absolutely not, application doesn't accomplish much
Is information provided in a logical order?	No, because no uniformity between course
Is feedback provided immediately based on user actions?	Sometimes, sometimes get confetti right away sometimes it takes a while to show and sometimes I don't get an email for a little while
Does the system provide the user with access to help?	No, I don't think the help button is helpful
Are the links clear and follow conventions?	Yes, easy to follow
Is help available on every page?	No, tigers (timeline) no help in general
<b>Navigation Across the Website</b>	
Overall Rating for the Section 1                    10 Worst.              Best	7
Does using one section help you understand other sections on Canvas?	Yes, because certain amount of uniformity
Is it difficult to move on to different section on Canvas?	No, it's not. Easy to move around
Easy to understand your location on the site (breadcrumbs)	They do in some sections but not all. Not consistent

Is there a limited number of buttons & links?	For the most part, but depends on how the professor sets it up and especially how they utilize the files section
Is the navigation consistent?	Yes, pretty consistent but sometimes assignments are in modules instead of assignments and you have to do some digging (grab your shovels kiddies)
Does the organization of information make sense?	Yes, it does
Does the screen size and resize appropriately?	No, makes the screen look jumbled when you make it bigger or smaller
<b>Overall</b>	
Any other thoughts?	Better than blackboard

### *Heuristic Evaluation #2 Responses*

<b>Match Between System and the Real World</b>	
Overall Rating for the Section 1 Worst.	10 Best
Are the names of menu buttons names easier to follow or intuitive?	Yes
Does the title show which page you are correctly?	Yes
Are the tasks of menu buttons consistent with its names or is it confusing?	Yes
Do the menu buttons on the left side of the screen help indicate your current location on website?	Yes
Are all abbreviations and acronyms explained?	Yes
Is the language used familiar to the users' language?	Yes
<b>Consistency and Standards</b>	
Overall Rating for the Section 1 Worst.	10 Best
Are the colors consistent across the website or somewhere where it feels out of place?	Yes
Is the page navigation similar to the navigation on other pages?	Yes
Are the main navigation items always available?	Yes
Is all information needed at a particular point visually present?	Yes

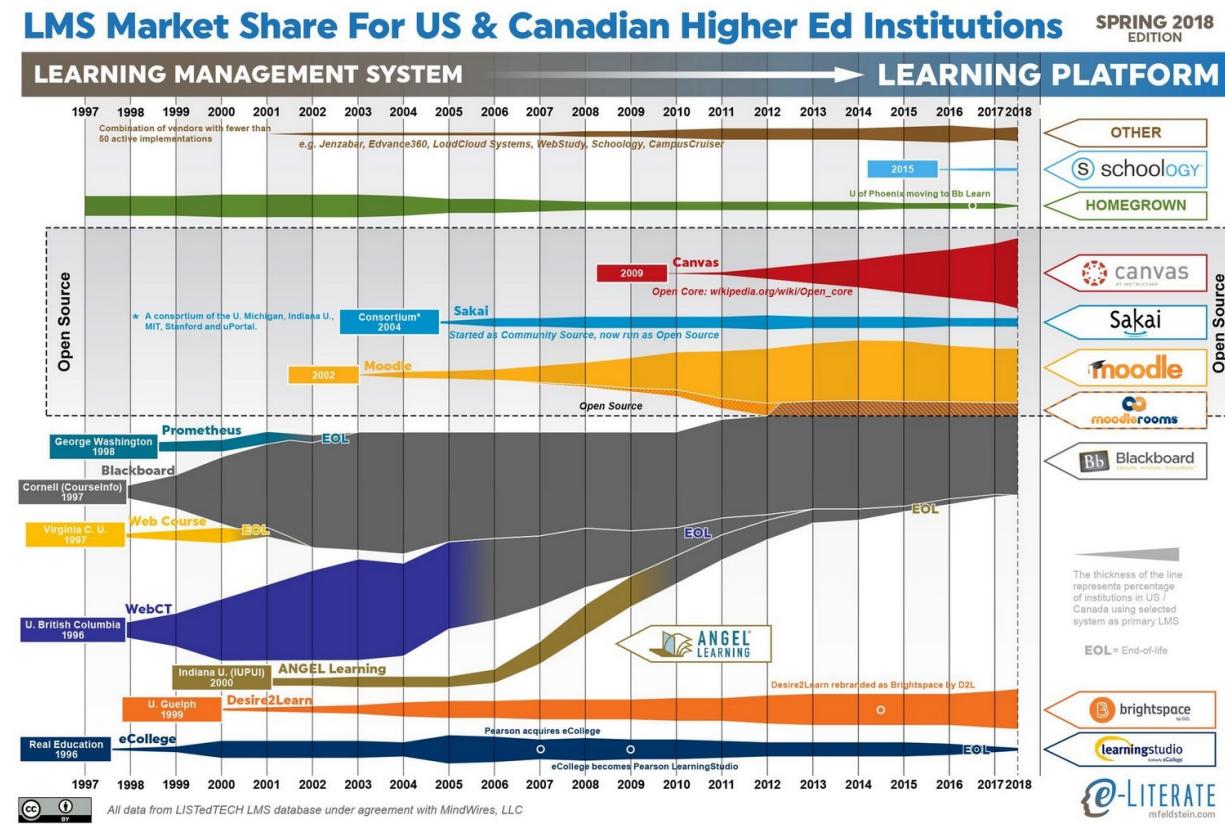
Is the logo in the header displayed on every page that allows for the user to navigate back to the home page?	Yes
Does the menu contain intuitive sub-menus?	Yes
Are the icons intuitive?	Yes
Are the menu labels non-generic?	Yes
Is the size of the texts appropriate?	Yes
<b>Flexibility and Efficiency of Use</b>	
Overall Rating for the Section 1                    10 Worst.              Best	8
Does the flow path help you accurately understand your location in a section?	Yes
Does the system allow for experts to use shortcuts?	No
Does the system allow for customization?	Yes
Does the system allow users to approach tasks in multiple ways to suit their working style?	No
Can experienced users take advantage of features designed to speed up commonly performed actions?	No
Does the system allow for the user to go back through the flow path, or does it take the user back to the beginning?	Beginning
Does the user have good control of the interface?	No
<b>Execution of Daily Tasks</b>	
Overall Rating for the Section 1                    10 Worst              Best	8
Can the user access the features from multiple origins?	No
Are the desired features accessible over multiple platforms? (Web and Mobile)	Yes
Is information provided in a logical order?	Yes
Is feedback provided immediately based on user actions?	Yes
Does the system provide the user with access to help?	Yes
Are the links clear and follow conventions?	Yes
Is help available on every page?	Yes
<b>Navigation Across the Website</b>	
Overall Rating for the Section 1                    10	9

Worst.	Best	
Does using one section help you understand other sections on Canvas?	No	
Is it difficult to move on to different section on Canvas?	No	
Easy to understand your location on the site (breadcrumbs)	Yes	
Is there a limited number of buttons & links?	Yes	
Is the navigation consistent?	Yes	
Does the organization of information make sense?	Yes	
Does the screen size and resize appropriately?	Yes	
<b>Overall</b>		
Any other thoughts?	Simple but easy to use interface	

## Appendix V.

### Figures

Figure 1.



Tony Bates. (2018). LMS Market Share for US and Canadian Higher Ed Institutions.  
<https://tonybates.wpengine.com/wp-content/uploads/LMS-market-trends-2.jpg>