
# Canvas Usability Assessment and Evaluation

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"You never sent out an announcement?"

"The discussion board won't let me post!"

## When you ask a teacher how virtual learning is going so far.


"I didn't revise because I never saw the feedback on the first draft of my paper."

"You sent me a message?"

Canvas, a popular online learning platform, concerns and disillusionments immediately began rolling in at the start of Spring quarter 2020 and persisted for the duration of the quarter. The COVID-19 outbreak resulted in universities across the nation moving to an online platform and leaving instructors and students unprepared for this mandatory and urgent transition. Eastern Washington University (EWU) currently utilizes Canvas as its primary online learning platform. As the education field strives to quickly adapt to the changes demanded by COVID-19, a transition for Canvas to become a more abundant online learning platform and remote classroom environment may be necessary. If successful learning is to happen, educators need to better understand the online platforms we are requiring our students to use through the students' eyes.

"Wait... what am I supposed to do this week?"

"I didn't see there was an assignment due!"

As EWU composition instructors, we noted a high volume of questions, concerns, and confusion expressed by students utilizing the Canvas platform despite the fact online learning is becoming increasingly popular, relevant, and has been utilized within the traditional classroom in the past. Students were experiencing challenges accessing Canvas's functions as well as locating and submitting various necessary items, such as due dates, assignments, readings, announcements, and discussion boards. If you were an instructor, student, or working within the higher education institution in whatever capacity for spring quarter 2020, you can most likely relate to the struggles, challenges, and woes of working with an online platform that is not user friendly or an online platform where users have not received adequate instruction. You have experienced the frustration of not only instructing students on the course material but also the functions of the online platform itself. You may also have experienced the frustration of students missing vital course material simply due to misunderstanding the platform's structure, tools, and functions. This is why we constructed and completed a Canvas usability test to better understand student users' challenges and needs in order to offer potential solutions to these problems.

# User Research

For the purposes of this study, the chosen user participant demographic was Eastern Washington University first year English composition students. As English composition instructors and current graduate students at EWU, we have experienced first hand complaints, confusions, and struggles students were facing after classes transitioned to a completely online format due to the COVID-19 pandemic. We decided on several categories we deemed important for determining user demographics. These categories were age, gender, linguistic background (since Canvas is a dominantly English platform), transfer, non-transfer or, international student, new or current Canvas user, internet availability, and the primary device used to access Canvas. To gather general information for these categories and create user groupings, we gathered information from "EWU's Student Enrollment and Demographics Page" and national statistical data. We found there were more females than males and non-binary students, more non-transfer than transfer students, and more students under the age of 25 than students age 25 and over (Student Enrollment 2020). Language diversity was decided after combining the national statistic of about 300 million people speaking English and 60 million speaking another language at home while combining it with EWU's student body nationality (United States Census Bureau 2015; Student Enrollment 2020). Sage Stats' provided information that most households have broadband internet and high speed internet in the Spokane area (Percent of Households with Broadband 2017; Percent of Households with High-Speed 2020). Statistica gave statistical data on the most common devices which led us to laptops, PC's and smartphones being predominantly used while only 30% of study participants used tablets (Statista 2015). User profiles were structured to best match the data gathered.

## User Matrix

| | User 1 | User 2 | User 3 | User 4 | User 5 | User 6 |
|---|---|---|---|---|---|---|
| Age | 18-22 | 23-26 | 27-30+ | 18-22 | 23-26 | 27-30+ |
| Gender | Female | Male | Female | Male | Female | Non-Binary |
| Linguistic | Multilingual | Monolingual | Monolingual | Multilingual | Monolingual | Monolingual |
| Transfer, non-transfer, or international | Non-transfer | Non-transfer | Non-transfer | International | Non-transfer | Transfer |
| New and Current User | New | New | New | Current | Current | Current |
| Internet Availability | Reliable | Reliable | Unreliable | Reliable | Unreliable | Reliable |
| Device | Laptop and cell | Tablet and cell | Tablet and cell | Laptop and cell | Laptop and cell | Laptop and cell |

Figure 1

After creating user personas, we created a participant survey that contained questions pertaining to these user group categories. Based on our user's responses, we chose which users would be participants in our Canvas usability assessment as well as which user group the user would represent. While users did not always fit all the requirements, users fit the majority of categories for their chosen user group.

# Purpose/Test Environment

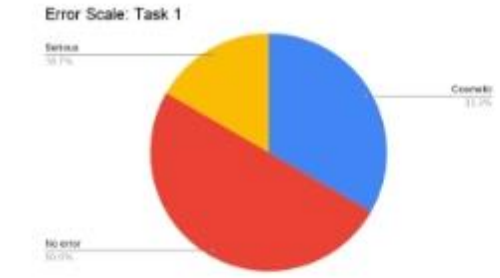

For the purposes of our usability test we strategically chose one practice task and five tasks for users to complete. The tasks were chosen due to common concerns, frustrations, and misunderstandings expressed by students in our English 101 and 201 courses during Spring Quarter 2020. In addition, these tasks were chosen because they are the most common tasks required for users to complete in order to be successful in the virtual learning environment.

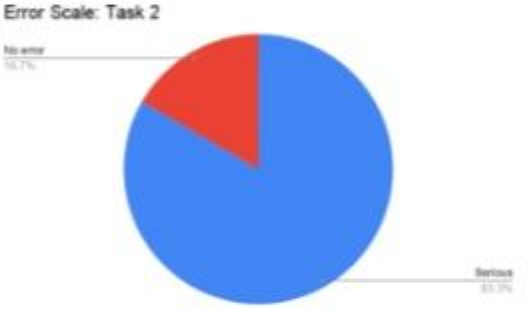
Tasks included finding course modules, submitting an assignment, replying to a discussion board post with specific items i.e. a URL link, an image, an attachment, and a sentence, finding instructor provided detailed essay feedback, competing peer-review essay feedback, and replying to the most recent course announcement.

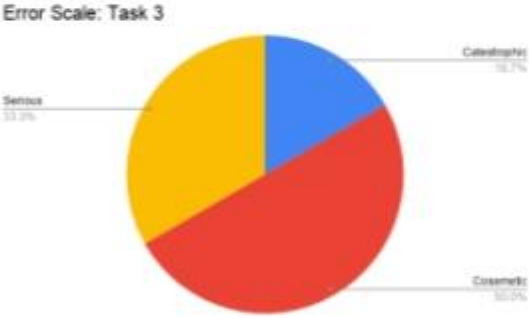

We collected the data for this usability test by recording users' screens via Zoom while they completed each task in a Canvas shell course. The testing was completed remotely utilizing Zoom due to social distancing requirements in Washington State at the time. The screen recording function Zoom offers enabled facilitators to observe how users navigate Canvas, the various ways users understand how to complete a task, and how familiar users are with the Canvas functions and tools.

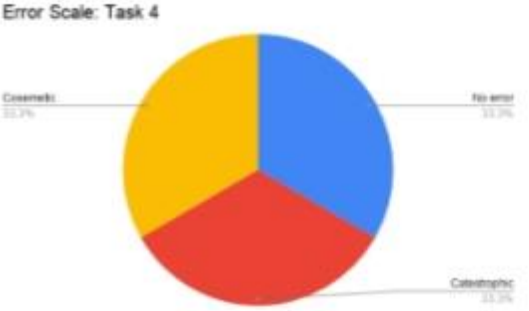
Five users completed the usability testing with a laptop and one user utilized a tablet. We requested users to complete the evaluation with reliable internet and in a quiet well lit space for optimal recording. All users were asked throughout the evaluation to use a think-aloud protocol for the duration of the usability testing. The think-aloud protocol enabled facilitators to take detailed observation notes not only on users' actions, but also on their thoughts, frustrations, and confusion while navigating through the various tasks.

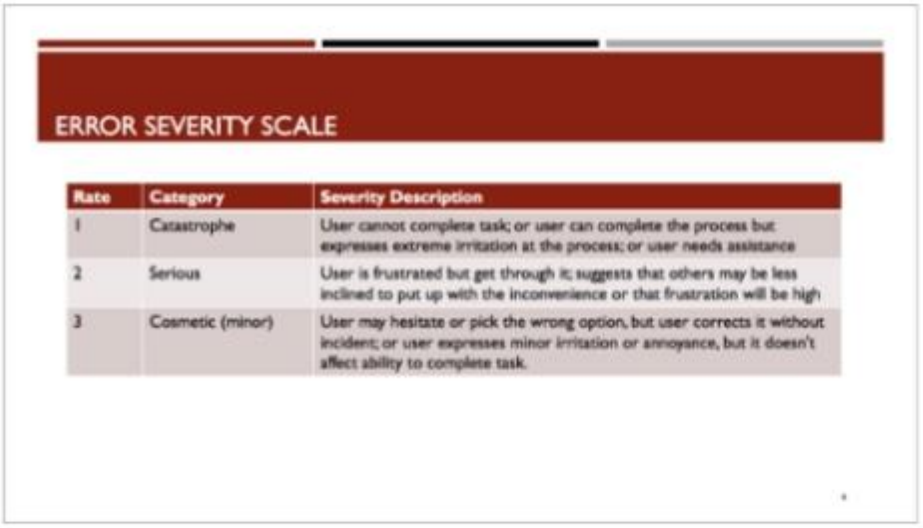
Graphs 2-5



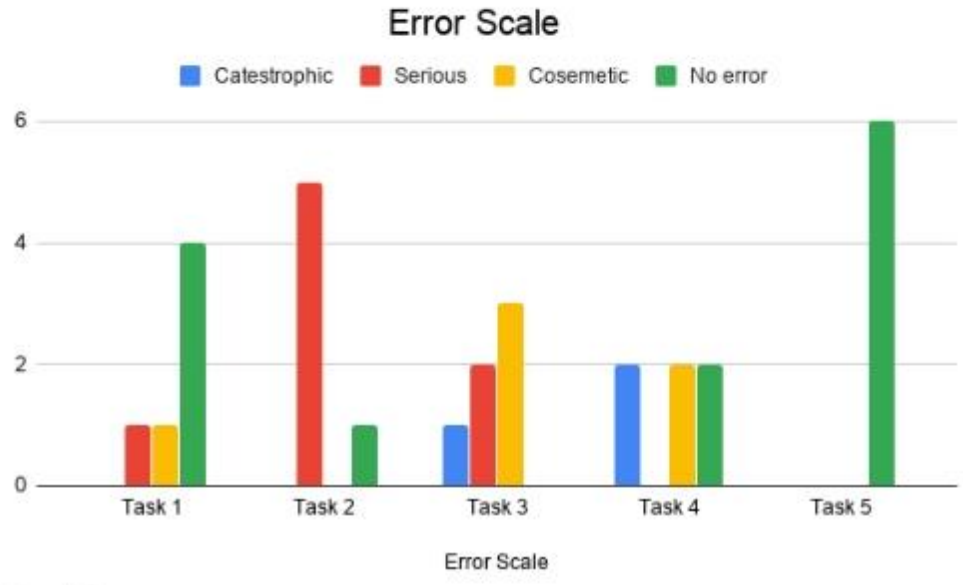
**ERROR SEVERITY SCALE**

| Rate | Category | Severity Description |
|---|---|---|
| 1 | Catastrophe | User cannot complete task; or user can complete the process but expresses extreme irritation at the process; or user needs assistance |
| 2 | Serious | User is frustrated but get through it; suggests that others may be less inclined to put up with the inconvenience or that frustration will be high |
| 3 | Cosmetic (minor) | User may hesitate or pick the wrong option, but user corrects it without incident; or user expresses minor irritation or annoyance, but it doesn't affect ability to complete task. |

Figure 2

# Error Scale

To evaluate our results we used an error scale to evaluate each individual user's experience completing Tasks 1-5 (Figure 1). Users were ranked based on the frustrations, comments, and questions expressed while completing each task. As evidenced by Graph 1, task 2 was the most challenging for users to complete followed by task 4. Graph 1 shows the level of error scale ranked from "No error" to "Catastrophic". The numbers on the right hand side indicate how often the particular error occurred per task. Graphs 2-5 reveal the individual error responses for each task. Please note that task 5 is not included in the individual scale as it had a 100% no error rate.

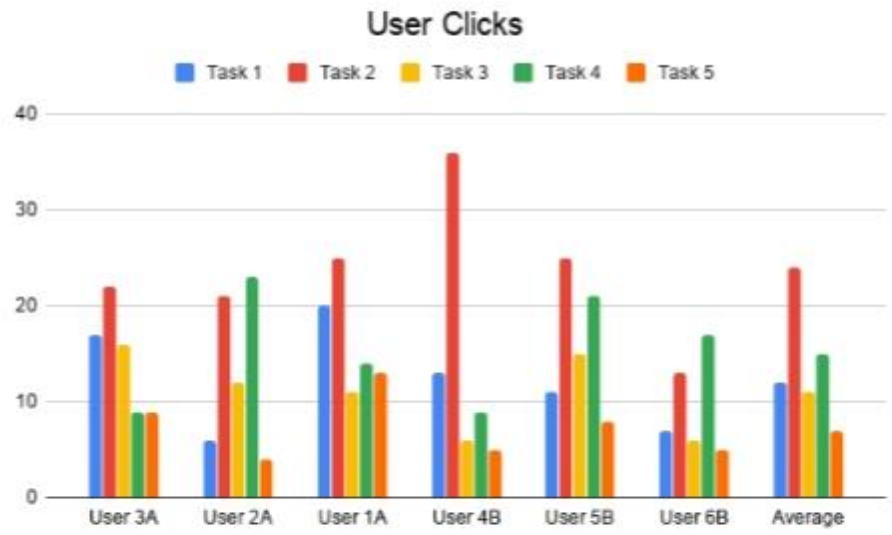



Graph 1

# User Clicks

We also tracked the number of clicks (touchpoints) users required to complete each task. As evidenced by Graph 6 one can see that on average task 2 required the highest number of touchpoints for users to complete followed by task 4. The user clicks are measured in increments of 10 on the left hand side and the average amount of clicks per task is on the right hand side of the graph.

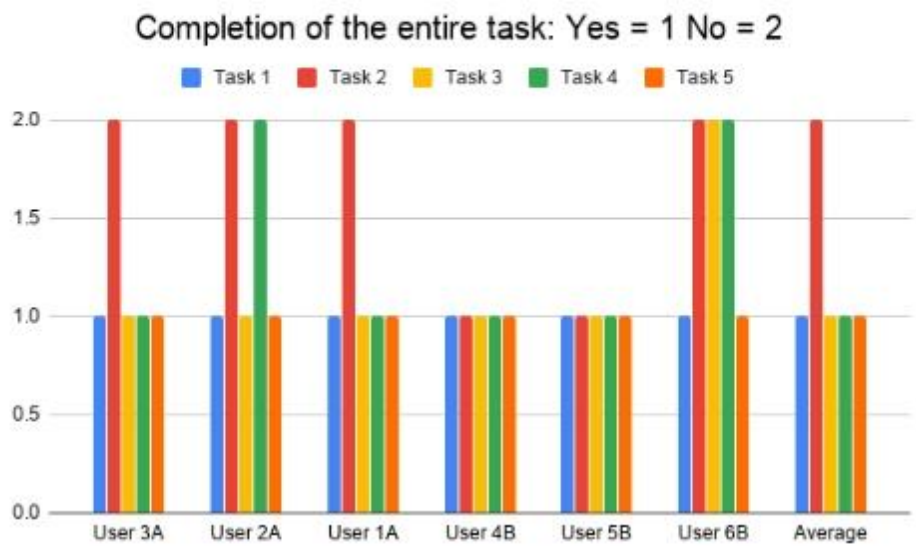
On Average Task 2 followed by Task 4 had the greatest amount of touchpoints




Graph 6

# Completion of Task

We also evaluated to what extent users were able to complete each task. Each facilitator outlined in the observations notes a detailed account of exact areas users struggled with task completion. The observation notes were reinforced through the think-aloud protocol users were reminded to use as users expressed frustration or confusion. You can see on Graph 7 that users most often were unable to complete task 2, followed by task 4. The number 1 indicates "yes, the task was able to be completed" and the number 2 indicates "no, the task was unable to be completed." The bar cluster on the right hand side shows the average rate users were able to complete each task.

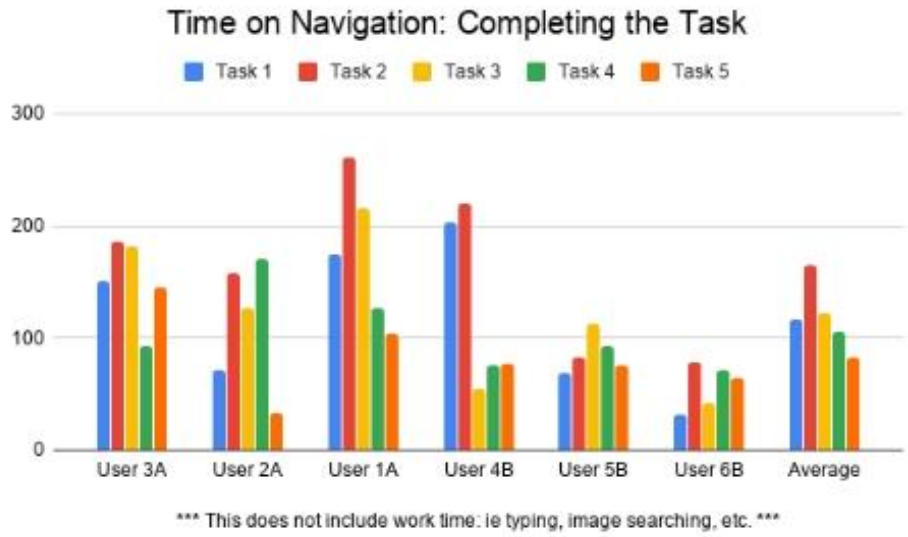



Task 2 was the most challenging for users to complete followed by Task 4

Graph 7

# Time on task

Time on task was the amount of time it took users to navigate each task. It should be noted that this time does not include miscellaneous time that users spent like typing or searching for an image because it did not adhere to the actual navigating and use of the Canvas functions. Graph 8 shows that on average task 2 took the longest amount of time to complete followed by task 3. The time on task is measured in seconds in increments of 100 on the left hand and the average amount of time per task is shown on the right hand side (Graph 8).



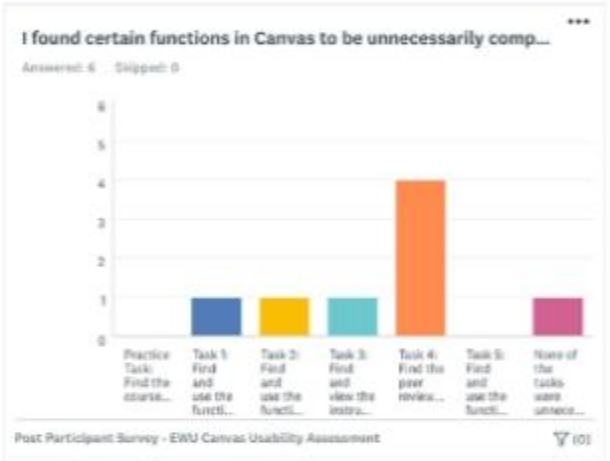

Graph 8

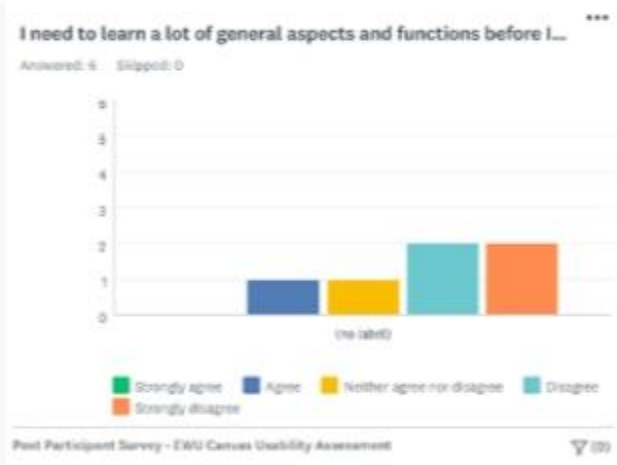
# Post-Test Interview

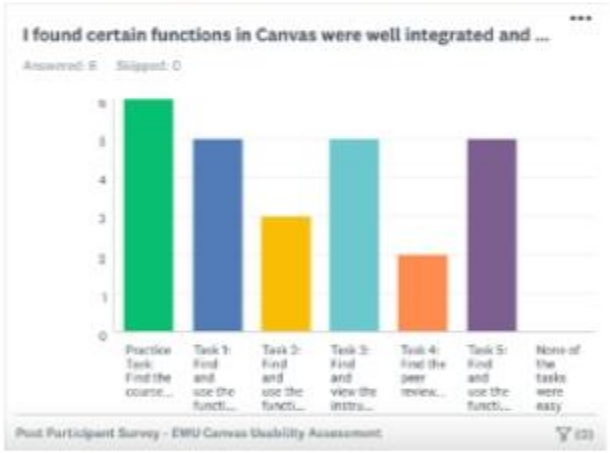
Finally, a brief verbal post interview survey was conducted with each user immediately following completion of the practice task and the five tasks included in our data results. Users were asked to express which tasks they found most challenging as well as which tasks they found to be the easiest. This enabled us to confirm the observations facilitators made while watching users complete each task.

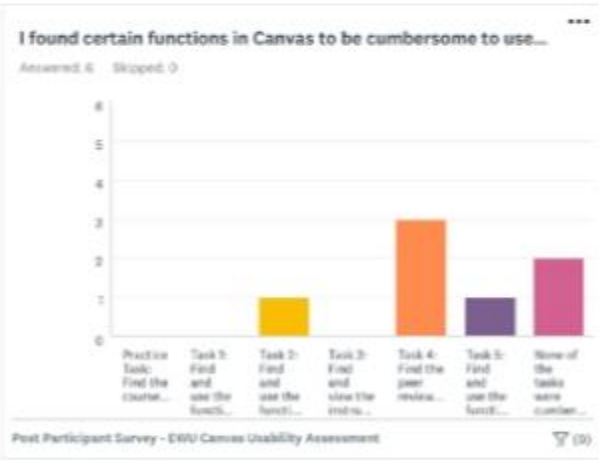
# Post Interview Survey

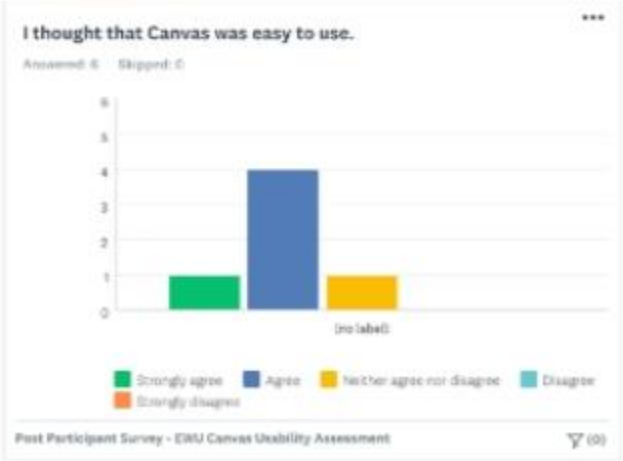
Users were then required to take a post-interview survey (Figure 3-8) where users answered overall questions concerning their experience completing the tasks using Canvas. Our users did state they felt Canvas was overall easy to utilize and did not feel they needed extensive future instruction to be competent and successful utilizing Canvas' functions. However, on average participants found Task 4 to be the most complicated task to complete, the most unusable without prior instruction, and the most cumbersome.

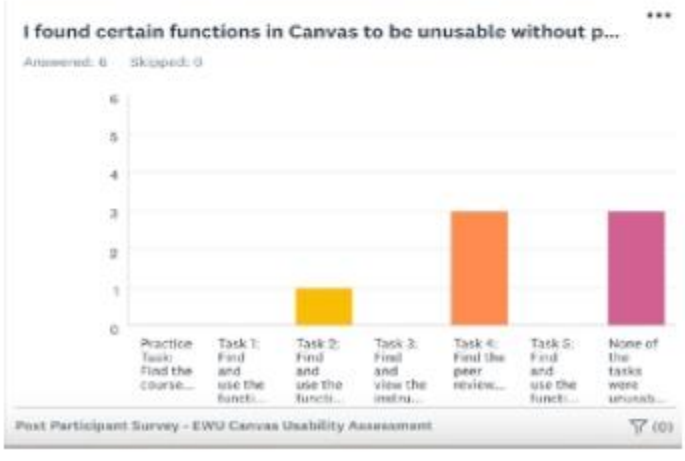



Figures 3-8

# Findings

## Task 1: Find the next assignment that is due on the test course. Submit the test document to this assignment.

Our new users (1A-3A) were confused where to find the next assignment due. They tried to access the assignment through the grades and calendar tab. Since they could not find the assignment there, they looked under the assignments tab. The number of clicks data revealed that new users had more clicks than the current users meaning that they had a harder time navigating the task. New users also took the longest to complete this task. User 4B did find the task puzzling because the user was initially unable to locate the assignment. However, all users were able to complete the task.

## Task 2: Find the next discussion board post that is due. Reply to the discussion board post. Your reply should include a URL link from any website, an image, a sentence, and an attachment of the test document.

The following task was equally challenging for both new and current users (4B-6B). While completing this task, five of the six users felt frustrated. Users 1A, 2A and 4B had difficulty navigating and finding the discussion board assignment. Furthermore, four users struggled the most when it came to uploading or embedding an image and attaching a file. Users 1A and 2A both stated they usually use their phones when uploading an image to a discussion board. Thus, these users were not used to using the actual Canvas website to complete this step. In addition, users 1-3A and 6B did end this task without attaching a file or embedding an image. Four of the six users were unable to complete the task. This means only users 4B and 5B (current users) finished this task successfully.

## Task 3: Go back to the "Personal Narrative First Draft" assignment and access the detailed instructor feedback. Speak out loud 3 comments that were given as feedback.

After searching for the assignment all new users and user 5B got stuck and were not sure where to go to view instructor feedback. Thus, users 1-3A and 5B clicked on "Peer-Review Partner" and upon opening their partner's peer-review, they realized they were in the wrong place. However, all users did eventually manage to find their instructor feedback under "Submission Details." After locating the instructor feedback users struggled to find/read the comments left on their paper. Users 5B and 6B were frustrated at how small the document screen was and tried to make it full screen. User 1A read all three comments aloud, but was not sure they had completed the task. Overall, this task was challenging for 5 of the 6 users. Nonetheless, all users were able to complete this task.

## Task 4: Return to the "Personal Narrative First Draft" assignment, find your peer-review partner, and access their essay on Canvas. Please provide two forms of feedback on their essay.

This task was the second most difficult task for all users. Through trial and error in the previous task, users were able to eventually navigate to the peer review with some difficulty. However, all users had no prior experience with the editing and commenting tools found through speed grader on Canvas. Users had difficulty commenting because they did not know that commenting tools were available and they could not enlarge the document screen to apply comments to their peer's document. Therefore, putting a comment on the peer's document caused the most frustration but all users were able to leave a comment in the submission box. Furthermore, user 2A and user 6B did not finish this task.

## Task 5: Find the most recent announcement. Reply to the announcement briefly summarizing what the announcement is about.

This task was easy for all user groups. Users were able to find the announcement and summarize it. The new users did spend more time on this task than the current users, but this is understandable because current users are more familiar with announcements.

# Recommendations

While our recommendations are primarily intended for EWU instructors, our recommendations can be applied to any university that uses Canvas as an online learning platform, to Canvas developers and programers, and any other online learning platform where students may face similar struggles.

**Course Layout**

Our Canvas usability test course was disorganized and not all tabs were available to students, making our users confused or restricted in completing our tasks. Our future recommendations are to organize courses clearly either by week or unit via modules. Also, due dates should be listed in multiple areas for assignments and discussions (including on the calendar). Instructors should make all tabs available to students such as, grades, announcements, assignments as users understand how to complete tasks in a multitude of ways through various options.

**Task 2**

Instructors should provide an instructional video or document explaining in detail how to utilize the icons available on discussion boards to imbed images, attach files, insert videos, etc. If you are meeting regularly via Zoom, demonstrate this process so questions can be asked and answered as they arise.

**Task 4**

Due to the difficulty users experienced navigating the detailed peer review feedback provided by Canvas, an instructional video should be created on how to use these peer review functions. Instructors may provide another peer-review option all together such as using a discussion board thread instead.

**General**

We recommend instructions explain and demonstrate to students how to use certain Canvas functions like viewing instructor feedback, discussion boards and their icons, and providing detailed peer review feedback. This instruction can be accomplished through Zoom class meetings, instructional videos, and detailed written explanations. For instructors ease, we recommend creating a group of instructional videos that all instructors have access to so instructors can share information and post videos within their individual Canvas course. The Canvas platform also has instructional videos, which instructors could consider using several of those videos as well. Please note we could not find Canvas instructional videos for all of the issues that were encountered during this usability assessment.

## Future Recommendations

Based on the findings and conclusions in this study, the following **recommendations for future testing** are made:

1. Test various Canvas functions that were not explored in this usability test. Functions such as grades, notifications, groups, and messaging.

2. Test how users actually find and access certain applications as our tasks sometimes gave brief instructions on how to locate and/or accomplish the task.

3. Conduct individual course testing for various subject matters such as, math, chemistry, history, music, etc. as these courses may utilize Canvas functions and accessories differently from an English course.

4. Conduct a Canvas usability assessment evaluating how instructors create their online courses and their struggles with course creation as this would provide insight and understanding to educators' perspective and struggles.

5. Future Canvas A/B testing on a few Canvas course layouts to see which works best for student users.

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