

CS6750 Assignment M2

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Abstract—Ed is a digital learning platform that allows students and instructors to communicate and collaborate online. Ed provides multiple features such as Ed Discussion, a Q&A forum and Ed Lessons, for viewing course content organized as a series of lessons. The task I will be investigating for M assignments is navigating through and taking lessons in Ed Lessons. The goal is learn about the different needs for users with different learning habits, and redesign the interface to meet those needs and make the interface more flexible and ease-to-use.

1. NEED-FINDING EXECUTION: PARTICIPANT OBSERVATION

The first need-finding plan that I executed was participant observation. I sat down with my laptop, navigated to the Ed Lessons interface, selected a lesson to take from a course I was enrolled in, and watched all of the videos in that lesson. During this, I took notes on what I did, how I felt about the experience and any issues that came up.

1.1. Raw results

The following are the raw notes that I took during the exercise:

Lessons menu showed name of each lesson which was good, but the index was not in order, which was a bit confusing. Probably showing which week each lesson belonged to would be helpful.

Lessons with skipped quizzes/exercises which are not mandatory do not show up as completed, so hard to find where I left off last time.

Playback speed I set last time was remembered and applied, very convenient.

Love that video player was large enough that I didn't even need to enter full-screen.

Noticed small icon like “...” in the top right corner, had no idea what it meant and found that it was a tiny menu that just had one option: previewing the lesson, which seemed pretty useless for me.

Forward/backward key controls next/prev video, not skipping forward or backward in the video, which is not in line with other video viewing interfaces users are familiar with.

Did not notice instructor notes until I accidentally scrolled down and saw them hidden under the large video window.

Space bar does not stop the video, but unstops the video.

Buttons to go to next or previous video was in the top left corner, instead of at the bottom of the video player, as I’m used to.

Cannot directly proceed to next lesson, need to return to list of all lessons then select next lesson from there.

1.2. Summary of takeaways

From this exercise, I learned that there are multiple subtasks that are related to the goal of taking lessons online. I needed to find and navigate to the right lesson to take, watch videos, take interactive quizzes, etc. The user experience of each subtask affect the overall experience of taking a lesson on Ed Lesson. In addition, from the results of this exercise, I found that the interface may not be friendly enough for users who like to control the pace of their study by manipulating the video being played in various ways. The video player has unconventional keyboard controls, which makes the experience bad for users familiar with using standard video players.

1.3. Avoiding biases

To avoid possible confirmation bias during this need-finding exercise, I tried to consciously remind myself not to focus on my preconceived ideas, and focus on my goal of taking a lesson instead. To do so, I chose to take the lesson that I needed to take for that week’s assignment, so it would feel like I am just doing what I always do, which is focusing on the course material that I might need to reference for an assignment. Changing my focus made me think less about my preconceived ideas of the interface. To further avoid biases, I planned out my

survey so that I could confirm some of my own opinions with the opinions of others.

2.NEED-FINDING EXECUTION: POST-EVENT PROTOCOLS

For this need-finding exercise, I recruited participants on the class forum and asked them to go to Ed Lesson, take an upcoming lesson of a course they are enrolled in, and then fill out a survey of mostly open-ended questions once they complete.

2.1. Raw Results

Please see Appendix 7.1 for post-event protocol exercise description and questions, and Appendix 7.2 for raw responses .

2.2. Summary of takeaways

From the post-event protocols exercise, I gathered a good amount of qualitative data about what features participants used the most and identified what areas in the interface of Ed Lessons can be improved. Nearly half of the participants encountered issues when going through the exercise due to misunderstanding of the interface or difficulty in controlling lesson progress. I found that many participants had negative feedback about the process tracking of the lessons in Ed Lessons, mainly for two reasons: no control over marking a lesson as complete, and unnecessarily high requirements for the system to consider a lesson complete. I also learned that the balance between automating tasks and giving user control can also impact user experience. Auto-play was one of the most-liked features of Ed Lessons, but some participants thought auto-play happened too fast at the end of a video, and wished they could have some time for control. The results also confirmed some of the takeaways I got from my first need-finding plan. For example, many participants also think that the unexpected effects of keyboard shortcuts for control over video makes the interface feel unintuitive and difficult to use. And like me, most people either had no idea instructor notes were available, or had trouble finding it.

A lesson about the need-finding plan itself I learned from this exercise is that questions for participants need to be phrased in precise language and with enough context. Especially when there are potentially confusing terms. For example, the term “lecture notes” can sometimes be interpreted as lecture tran-

scripts, and sometimes interpreted as supplementary notes to a particular lecture video. Using instructor notes to refer to the latter could reduce the confusion when I gather feedback.

2.3. Avoiding biases

To avoid observer bias, which includes biasing the participants with how questions are asked, I asked a family member to review the questions I planned to ask participants for the post-event protocol to see if there were any leading questions, and revised my questions multiple times so that questions asked are as objective as possible. To avoid voluntary response bias, which can happen because people with stronger opinions are more likely to volunteer, I kept my recruitment post very general so as to not give out what was participants where going to be asked.

3. NEED-FINDING EXECUTION: SURVEY

The goal of this need-finding exercise is to get more data about the user space and how they use the interface, and refine the areas of improvement based on the results of previous need-finding exercises.

3.1. Raw results

Please see Appendix 7.3 for survey description and questions, and Appendix 7.4 for raw survey responses.

3.2. Summary of takeaways

From the survey results, I learned that 100% of participants usually access Ed Lessons on laptops or other types of computers, while about 32% of them use other platforms such as mobile phones or tablets in addition to computers. From this data, I decided that I will focus redesigning the interface specifically for the platform that is most used, the laptop / computer.

It was clear that users had multiple goals for using Ed Lessons: usually to learn new lessons as well as review lessons for exams. This indicates that there is a need for easy navigation and flexible control over taking lessons. This conclusion is further reinforced by responses from users about what features they need for effectively taking lessons online. Speed control and other video controls were the most mentioned feature, followed by availability of lecture notes

or note-taking features to help with learning or reviewing course content, and some sort of search function for lessons.

In addition, survey response data showed that 65% of users use keyboards to control video in Ed Lessons. This data combined with the negative feedback of Ed Lessons keyboard control from the post-event protocol need-finding exercise, implies that improving the keyboard controls so that they are intuitive and easy to use will have a great impact on the user experience.

3.3. Avoiding biases

To avoid observer bias where I bias participants with the questions I ask in the survey, I had someone review my survey questions before sending it out to make sure my survey is objective and has no leading questions. Whenever I needed to ask users to make a choice, I made sure I also provided an “Other” option for users to specify anything not already listed so that I am not biasing them towards the most common options.

4. DATA INVENTORY

4.1. Who are the users?

The users are students taking online courses using Ed Lessons. My problem space states that users can be of any gender or age, but survey results show that more than half of users are between the age of 30 and 49. Users may have any level of expertise, though need-finding results show that most users are familiar with using online learning platforms and have used platforms other than Ed Lessons in the past.

4.2. Where are the users?

I have failed to capture this data in my need-finding exercises. I asked users to specify which device they use to access Ed Lessons, but I did not ask about their surrounding environment. To address this question, I can conduct an additional survey and include a question to ask users where do they usually take lessons online.

4.3. What is the context of the task?

Most users use laptops or computers to take lessons in Ed Lessons, though there were users that said they used mobile phones as well and indicated that they multi-task. I assumed users who use laptops or computers to take lessons online generally would not be doing anything else at the same time, but to confirm this assumption, I should conduct an additional survey to find out if users multi-task when taking lessons online, or if there could be anything else competing for users' attention.

4.4. What are their goals?

My need-finding exercises informed me that users have multiple goals when taking lessons in Ed Lessons. The most common goal was to learn new course material, but almost all users also indicated that they also use Ed Lessons to review course content for exams. Referencing course material for assignments is another goal that some users have.

4.5. What do they need?

Need-finding results show that most users needed better control over the pace of the lessons, such as autoplay, or video speed. Many users also mentioned they need progress tracking with some level of control (such as ability to mark a lesson as complete), as well as accessible and high quality transcripts or lecture notes. Other things that users mentioned they wished the interface had include note-taking features and lesson searching features.

4.6. What are their tasks?

Physically, the users are navigating to a lesson in the Ed Lessons interface and consuming the course content of a lesson by watching videos. Cognitively, users are absorbing what is taught in the lessons, learning or reviewing concepts of a certain topic with the goal to understand and remember them.

4.7. What are their subtasks?

Subtasks differ among users based on their studying habits. For some users, the subtask is just to watch all videos in a lesson on autoplay. But for most users, they also perform subtasks such as adjusting playback speed, controlling progress of videos, take interactive quizzes, read instructor notes etc. Some

users even take notes on the side as part of learning a new lesson. Most of the subtasks mentioned above are done with on-screen controls (e.g. button clicks) or keyboard controls provided by the interface, but subtasks like taking notes are not supported by Ed Lessons, so the user needs to use a different application, or use pens and paper.

5. DEFINING REQUIREMENTS

5.1. Functionality requirements

In addition to the existing features of Ed Lessons, the new interface should have additional functionality to take notes within the interface itself that may be tied to the lesson and timestamp of the video. Also there should be a functionality to search for lecture notes or transcripts associated with a lesson to find a particular lesson easily. Lastly, users should be able to have control over progress tracking of lessons. This means there should be a functionality for users to mark lessons as complete manually.

5.2. Usability requirements

Users should be able to control videos in the lecture easily with keyboards or on-screen buttons. Specifically, these controls should match the common video player interfaces so that users can correctly predict the results of their actions. For example, pressing left and right arrow keys should allow users to jump forward or backward in the video.

Users should be able to navigate to the Ed Lessons page easily, i.e. the button or icon to go to Ed Lessons from Ed Discussions should be obvious and easy to find.

Users should be able to find and access instructor notes for each lesson easily. This includes clear indication of whether there are instructor notes available, and obvious button or tab to show and hide notes.

5.3. Evaluating success of prototype

To evaluate the success of the functionality requirements, I will collect data about how many users used each new feature and how useful users would rate them.

To evaluate the success of usability requirements, I will measure the user satisfaction of the features, and whether the user error rate decreased, as well as whether efficiency of performing relevant tasks improved after the new design. If users make less mistakes or take less time to perform tasks using the new interface, it would indicate the usability of the interface improved.

6. CONTINUED NEED-FINDING

The need-finding exercises I have executed did not provide much data about the environment and context in which users used the interface. I would perform another survey need-finding exercise to gather information about where users usually access the Ed Lessons interface and what else could be happening when they took lessons. For example, do users take lessons at home in their studies, or at a cafe, or outside under the sun? Do users multi-task when taking online lessons, like doing yoga or running on a treadmill while listening to lectures?

In addition, surveys results showed that some users wished there was a way for them to search for a particular lesson. I can conduct additional need-finding exercises to learn more about that need. For example, I can conduct a survey or recruit people for an interview to ask what they would search for to find a particular lesson, such as lesson titles, concepts or terms that appear in the video, or something else.

7. APPENDICES

7.1. Post-event protocol survey questions

Evaluating Ed Lessons for taking lectures online

If you are taking a class that uses Ed Lessons, please help me evaluate the user interface for taking lectures in Ed Lessons! **Please complete the following exercise before taking the survey: 1. Go to Ed Lessons for a course your are currently enrolled in on the device you usually use (e.g. laptop, mobile phone, tablet, etc.) 2. Navigate to the next lesson you have not yet taken in this course. 3. Learn the new course content and complete this lesson based on your own criteria of completing a lesson in a course.

* Required

Before continuing with the survey, please confirm you have completed the exercise mentioned in the survey description. *

- ☐ I have completed the exercise.
- ☐ I have NOT yet completed the exercise.

What device did you use to access Ed Lessons? *

- ☐ Laptop or other type of computer
- ☐ Mobile phone
- ☐ Tablet, such as iPad

Did you encounter any issues when doing this exercise? If yes, please specify what you were trying to do and what issue occurred. *

Type answer here...

What did you like about the interface for watching lectures in Ed Lessons? *

Type answer here...

What did you dislike about the interface for watching lectures in Ed Lessons? *

Type answer here...

Please select if you agree with the following statement: "It was easy to find and navigate to the next lesson I needed to watch." *

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree

If you answered "Disagree" or "Strongly Disagree" in the previous question, please explain why.

Type answer here...

Multiple choice: Which of the following did you do to complete a lesson? (What was your completion criteria?)

Select all options that apply. *

- ☐ Watched all video clips
- ☐ Completed all interactive quizzes
- ☐ Read all lecture notes
- ☐ Other

If you chose "Other" in the previous question, please specify.

Type answer here...

Were you aware of the instructor notes for each lecture slide?

- ☐ No, I did not know notes exist
- ☐ Yes, but I had trouble finding where they were
- ☐ Yes, and I was able to find them easily

Do you have any suggestions for improving the experience of navigating through lessons and watching lectures? *

Type answer here...

Submit Your Response ►

7.2. Post-event protocol survey results

response,Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9,Q10,Q11

1,I have completed the exercise.,Laptop or other type of computer,"Not really, I just went back to the lessons page, which I could do with back button or the icon at the top",I like that the lessons now move on to the next lesson by itself,Nothing much,Neutral,,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know lecture notes exist","Well, I didn't know about the lecture notes previously. "

2,I have completed the exercise.,Laptop or other type of computer,na,familiar to other video watching interfaces,url covers play button at start of video,Agree,,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know lecture notes exist",i do not

3,I have completed the exercise.,Laptop or other type of computer,"The green checkmarks don't always appear next to a lesson after I have completed it, so it's hard to remember where I left off. I always have to remind myself by opening the lesson and skimming over the video titles.",,"The size of the video compared to the playlist is good. The playlist does not crowd out the video as with other players... Ahem, I'm looking at you Canvas. The autoplay feature is nice too.",The inconsistency of the check marks. I also don't like that you have to tab between watching a video OR reading the discussions. Why is it only one or the other. Why does the interface force you to choose? Sometimes I want to refer to the discussions in order to check a post without exiting the player. ,Neutral,,Other,Watching the videos AND completing the interactive quizzes are my goal. ,"Yes, but I had trouble finding where they were","I think simply getting the green checkmarks to work in a consistent, self-evident way would go a long way to improving the navigation."

4,I have completed the exercise.,Laptop or other type of computer,No,"Intuitive, and gives you a sense of progression",The left arrow key sometimes goes back lessons instead of rewinding the video,Agree,,Watched all video clips;Completed all interactive quizzes;Read all lecture notes,,,"No, I did not know lecture notes exist",Make the lecture notes easy to find

5,I have completed the exercise.,Laptop or other type of computer,The auto play can be a bit fast. On udacity at the end of each video there was a 5 second

pause,Discussion and lectures all in one place,autoplay is fast,Agree,,Watched all video clips;Completed all interactive quizzes,,*"No, I did not know lecture notes exist"*,No

6,I have completed the exercise.,Laptop or other type of computer,For some reason my first week autoplay wasn't enabled then magically the second week it was.,Autoplay is much nicer than the player in canvas.,Pressing the left and right arrow keys move you to the next module in the lesson. I usually use left and right arrows to skip or go back in the video.,Strongly Agree,,Watched all video clips;Completed all interactive quizzes,,*"No, I did not know lecture notes exist"*,Left and arrow keys to not go the the previous or next module.

7,I have completed the exercise.,Laptop or other type of computer,When I pressed the bookmark to get to Ed it opened the discussion forum and I struggled to find how to get to the lessons.,It loads fast compared to canvas,*"It doesn't have basic video viewing settings like the ability to cast the screen, the closed captions are frequently wrong, and overall it just doesn't feel ""native"" to the website."*,Agree,,Watched all video clips;Completed all interactive quizzes,,*"No, I did not know lecture notes exist"*,No

8,I have completed the exercise.,Laptop or other type of computer,None,Preserves lecture speed between videos,The toolbar on top is unintuitive,Neutral,,Watched all video clips;Completed all interactive quizzes;Read all lecture notes,,*"Yes, but I had trouble finding where they were"*,Make lecture notes button more visible

9,I have completed the exercise.,Laptop or other type of computer,no,simple and clean interface.,nothing,Strongly Agree,It is very nicely laid out and easy to use.,Watched all video clips;Completed all interactive quizzes,,*"No, I did not know lecture notes exist"*,no I think it is fine. The only thing that I sometimes find annoying is that I usually speedup the video speed and sometimes it reverts to the normal speed when I go to the next video.

10,I have completed the exercise.,Laptop or other type of computer,no issues,simple and easy to navigate,that you can't mark the lesson as complete ,Strongly Agree,,Watched all video clips,,*"No, I did not know lecture notes exist"*,add an option to mark a lesson as complete

11,I have completed the exercise.,Laptop or other type of computer,No,"Simple, easy-to-understand interface. Autoplay enabled by default. Watched lessons have a green checkmark.",I can't tell which lessons correspond to which week of class.,Strongly Agree,,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know lecture notes exist",Add a small notification (as simple as an icon of an exclamation point within a circle) if there are specific lecture notes available for a video.

12,I have completed the exercise.,Laptop or other type of computer,Quizzes are not marked as complete if I select the wrong answer and the overall lesson status stays as incomplete unless all the quizzes are answered correctly,minimal and straightforward interface,pressing the right arrow button to fast forward does something else,Disagree,A next lesson button would have been easier rather than going back to the previous page and selecting a new lesson,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know lecture notes exist",none in particular

13,I have completed the exercise.,Laptop or other type of computer,No issues,"How fast, and well organized lessons were, didn't seem difficult to navigate to",,"That I couldn't bookmark specific segments for keeping notes, like in coursera",Agree,,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know notes exist",NA

14,I have completed the exercise.,Mobile phone,"No, thought I wish the slides continued playing instead of prompting for a click. I also wish they played even when switching apps. ",I liked how convinient and well suited it was for a mobile device. ,Nothing in particular other than what was mentioned above. Should play even when app is minimized and next slide should play automatically. ,Agree,,Watched all video clips;Completed all interactive quizzes,,,"Yes, and I was able to find them easily",,"I think the slides should play automatically, or I should be able to set that. "

15,I have completed the exercise.,Laptop or other type of computer,One issue that I faced was for some exercises it didn't mark as complete even though I did it. And then it does not mark the overall lesson as done in the main lesson list,I liked the newly changed auto play feature of the lectures. ,NA,Strongly Agree,,Watched all video clips;Completed all interactive quizzes,,,"Yes, but I had trouble finding where they were",NA

16,I have completed the exercise.,Laptop or other type of computer,"By default, playlist view is active instead of video screen which makes keyboard shortcuts perform different actions.",Clean and appealing UI,Overlapping shortcut keys between different aspects,Agree,,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know notes exist","Features like Lecture Notes could be more visible to the eye for the users, seems like a hidden one to me."

17,I have completed the exercise.,Laptop or other type of computer,No,The new autoplay functionality makes it really easy to watch them all,N/A,Strongly Agree,,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know notes exist",No

18,I have completed the exercise.,Laptop or other type of computer,None,None,None,Neutral,,Watched all video clips;Completed all interactive quizzes,,,"Yes, and I was able to find them easily",none

19,I have completed the exercise.,Laptop or other type of computer,No I did not.,The interface is much more appealing than the Canvas interface to watch videos. The playlist is easily visible on the left side of the page making it easy to determine what the upcoming videos cover. The automatic sequence where the next video starts as soon as the current one finishes is convenient.,,"Nothing, but I do dislike the interface to navigate to the Lectures page, which I explain below.",Disagree,The Lessons button to enter the page that overviews all of the Lessons is not intuitive and easy to miss. The actual overview page for the Lessons is bland and I feel like it is easy to select the incorrect lesson due to the proximity of the links.,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know notes exist",Make the Lessons button at the top right of the main Ed page more intuitive or just verbally write out that it is for the Lessons. Improve the style of the Lessons Overview page to possible include borders around each Lesson link to better distinguish between them. Make the instructor notes more apparent to the user.

20,I have completed the exercise.,Laptop or other type of computer,nope,easy to use,kind of confusing to get to the lesson page,Neutral,,Watched all video clips;Completed all interactive quizzes,,,"No, I did not know notes exist",can't find notes

21,I have completed the exercise.,Laptop or other type of computer,Lesson skips to next lesson before I am ready sometimes,Ability to watch lessons at higher speeds,Lesson skips to next lesson before I am ready sometimes,Agree,,Watched all video clips;Completed all interactive quizzes,, "No, I did not know notes exist",Perhaps to have the lessons within each module break down into a dropdown menu rather than taking you to another tab.

22,I have completed the exercise.,Laptop or other type of computer,no,easy to navigate courses and automatically starts next lesson,cant search for specific lessons,Agree,,Watched all video clips,, "No, I did not know notes exist",search capability for specific lectures

23,I have completed the exercise.,Laptop or other type of computer,no,"I like the auto play, the display of how much time has elapsed and how much is left, and the highlighting of which lesson is playing in the playlist",Trying to pause a video sometimes puts it in full screen,Agree,,Watched all video clips;Completed all interactive quizzes,, "No, I did not know notes exist",no

24,I have completed the exercise.,Laptop or other type of computer,no,it maintains settings like Canvas does not.,The only thing I dislike is that it was unintuitive to initially find where to go. the button is not standard.,Strongly Agree,,Watched all video clips;Completed all interactive quizzes,, "No, I did not know notes exist", "well, would have been helpful to know notes exist!"

7.3. Survey description and questions

Survey on taking lectures online

If you take lectures online, I'd love to get your opinion on this topic. This survey is only about actually watching/viewing course content online, and does not include assignments/quizzes or discussions, etc.

*** Required**

Select your age: *

- ☐ Under 18
- ☐ 18 - 29
- ☐ 30 - 39
- ☐ 40 - 49
- ☐ 50 - 64
- ☐ 65+

Have you taken lessons or watched lectures on a digital/online platform before, such as Ed Lessons or Canvas? *

- ☐ Yes
- ☐ No

If the answer to the above question is "Yes", which platform have you used before? Select all that apply.

- ☐ Ed Lessons (accessible via Ed Discussion)
- ☐ Canvas
- ☐ Udacity
- ☐ Other

If "Other" is selected in the previous question, please specify.

On what device do you usually access online learning platforms to take lectures? Select all options that apply. *

- ☐ Laptop or other type of computer
- ☐ Mobile phone
- ☐ Tablet, such as iPad
- ☐ Other

If "Other" is selected in the previous question, please specify.

What are your goals when taking lectures on an online platform? Select all that apply. *

- ☐ Learn new course content
- ☐ Review course content for exams
- ☐ Reference course content while doing assignments
- ☐ Other

If "Other" is selected in the previous question, please specify.

Type answer here...

Do you prefer watching lectures online, or downloading lectures to watch offline? *

- ☐ Online
- ☐ Offline
- ☐ Both, depends on circumstance

Do you prefer taking multiple lectures consecutively, or taking one lecture at a time? *

- ☐ Multiple lectures consecutively
- ☐ One lecture at a time
- ☐ Both, depends on circumstance

When watching lectures online, do you use the keyboard to perform actions such as controlling volume? Select all options that apply. *

- ☐ Control volume with arrow keys
- ☐ Jump forward/backward in the video with arrow keys
- ☐ Pause and resume video with space bar
- ☐ I use the keyboard to perform other actions
- ☐ I do not use the keyboard to perform any actions

If you chose "I use the keyboard to perform other actions" in the question above, please specify.

Type answer here...

Do you always complete interactive quizzes that are part of a lecture? *

- ☐ Yes
- ☐ No

What features or functionality do you need to effectively take lectures on a digital platform? *

Type answer here...

Do you have any suggestions about this survey itself?

Type answer here...

Submit Your Response ►

7.4. Raw survey results

response,Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,Q9,Q10,Q11,Q12,Q13,Q14,Q15

1,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,"Coursera, Udemy, Edx",Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,Multiple lectures consecutively,Jump forward/backward in the video with arrow keys,,No,Modifying speed,

2,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Other,Coursera,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,"Both, depends on circumstance",Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,A place to find the introduction or syllabus of the course so that I will know what the course is about and what I need to complete.,No.

3,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Other,"Coursera, Youtube",Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,One lecture at a time,I do not use the keyboard to perform any actions,,No,Changing The playback speed ,I won't recommend against using strong word like 'Always'. Leads to surveytaker to answer no

4,40 - 49, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,Coursera,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,,"Both, depends on circumstance",One lecture at a time,Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,"jump forward/backward, pause/play",

5,40 - 49, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,"Edx, Udemy, Coursera",Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,The goals change

over the duration of the course. I may re-watch a video with a different goal in mind each time. ,Online,"Both, depends on circumstance",Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar;Escape to exit full screen mode,Yes,Lecture notes are important for review and note taking., "It seems like the goals section is too narrow and assumes there is only one goal at a time or one goal for each viewing, but that's not the way I think about watching the videos for class. There can be multiple reasons, which change with each viewing."

6,40 - 49,Yes,Canvas;Udacity;Other,"Coursera, edX",Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,"Both, depends on circumstance",I do not use the keyboard to perform any actions,,No,"First of all, quality lectures. Then, good transcripts are very useful.",

7,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Udacity,, "Laptop or other type of computer;Tablet, such as iPad",,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,"Both, depends on circumstance",Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar;I use the keyboard to perform other actions,,Yes,"Notebook, pen and a quiet environment",

8,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Other,"LinkedIn Learning, Coursera, Udemy", "Laptop or other type of computer;Tablet, such as iPad",,Learn new course content,,Online,Multiple lectures consecutively,Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,Videos need to load fast and preferably they should autoplay within a lesson., "Spell check :) assignments was misspelled as ""assignments"""

9,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Udacity,,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,, "Both, depends on circumstance",One lecture at a time,I do not use the keyboard to perform any actions,,Yes,Play consecutive videos without having to manually play them,I don't understand why age matters

10,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Udacity, Laptop or other type of computer, Learn new course content; Reference course content while doing assignments, Online, Multiple lectures consecutively, I do not use the keyboard to perform any actions, Yes, the ability to create marks and comments on certain lectures moments,

11,40 - 49, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Udacity, Laptop or other type of computer, Learn new course content; Review course content for exams; Reference course content while doing assignments, Online, One lecture at a time, Jump forward/backward in the video with arrow keys; Pause and resume video with space bar, No, basic keyboard controls,

12,18 - 29, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Udacity; Other, "Plex, youtube, dailymotion", Laptop or other type of computer; Other, Roku, Learn new course content; Review course content for exams; Reference course content while doing assignments, Offline, "Both, depends on circumstance", Control volume with arrow keys; Jump forward/backward in the video with arrow keys; Pause and resume video with space bar; I use the keyboard to perform other actions, "There's a PC-wide hotkey for volume control, but it's not the arrow keys.", No, "Good bandwidth, keep track of my place in a video, track which video's I've seen.",

13,18 - 29, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Udacity; Other, "udemy, coursera, edx, youtube", Laptop or other type of computer; Mobile phone, Learn new course content; Review course content for exams; Reference course content while doing assignments, Online, One lecture at a time, I do not use the keyboard to perform any actions, Yes, I think it is fine the way it is,

14,18 - 29, Yes, Canvas, "Laptop or other type of computer; Tablet, such as iPad", Learn new course content; Review course content for exams; Reference course content while doing assignments, Online, One lecture at a time, I do not use the keyboard to perform any actions, Yes, "An ever-present ""next slide/lecture"" button that doesn't require scrolling",

15,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Other, edX, Laptop or other type of computer; Mobile phone, Learn new course content; Review

course content for exams;Reference course content while doing assignments,,Online,One lecture at a time,Pause and resume video with space bar,,Yes,Speed controls - I want to be able to at least 2x the content,

16,18 - 29,Yes,Canvas,,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,Multiple lectures consecutively,Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,speed up lecture speed,

17,40 - 49, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,"Coursera, Khan Academy, YouTube, DataCamp",Laptop or other type of computer;Mobile phone,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,Multiple lectures consecutively,Pause and resume video with space bar,,No,It helps to have lecture notes already. That way i can search those notes at a later time to review for tests.,

18,50 - 64,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Other,"Coursera, Udemy",Laptop or other type of computer;Mobile phone;Tablet, such as iPad",,Learn new course content,,Both, depends on circumstance",One lecture at a time,I do not use the keyboard to perform any actions,,Yes,"good quality, convenience",

19,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas,,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,One lecture at a time,I do not use the keyboard to perform any actions,,No,It would be so nice to be able to take notes directly on the video page along with a timestamp. It would also be nice to be able to search for words in a lecture and have it go directly to that time (maybe possible since the lectures have captions!).,

20,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Udacity,,Laptop or other type of computer,,Learn new course content,,Online,One lecture at a time,Pause and resume video with space bar,,Yes,cc,

21,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Other,EdX,Laptop or other type of computer;Mobile phone,,Learn new course content;Review course content for exams;Reference course content while doing

assignments,,Offline,Multiple lectures consecutively,Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar;I use the keyboard to perform other actions,n/a,Yes,notes taking,

22,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Udacity,,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments;Other,Ask questions of TAs or classmates,Online,Multiple lectures consecutively,Control volume with arrow keys;Pause and resume video with space bar,,Yes,"The ability to change playback speed, easily pause with spacebar, and easily turn on/off the captions",

23,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Other,Udemy,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,,"Both, depends on circumstance",One lecture at a time,I do not use the keyboard to perform any actions,,Yes,Speed setting and Caption setting,I suggest adding questions regarding the Speed setting and Caption setting.

24,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Udacity,,Laptop or other type of computer,,Learn new course content;Review course content for exams,,Online,One lecture at a time,Jump forward/backward in the video with arrow keys;Pause and resume video with space bar;I use the keyboard to perform other actions,,Yes,taking notes,

25,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Other,Edx,Laptop or other type of computer,,Learn new course content,,Online,One lecture at a time,Control volume with arrow keys;Pause and resume video with space bar,,Yes,Autoplay next video!,

26,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas,,,"Laptop or other type of computer;Mobile phone;Tablet, such as iPad",,Learn new course content;Review course content for exams,,Online,Multiple lectures consecutively,I do not use the keyboard to perform any actions,,Yes,"Having ""sticky"" settings remembering my previous decisions such as 1.5x speed",NA

27,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,udemy,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,, "Both, depends on circumstance",One lecture at a time,I do not use the keyboard to perform any actions,,No,good video and audio quality; increasing and decreasing speed of lecture,

28,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Udacity,,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,Multiple lectures consecutively,Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,"1. Consistent keyboard shortcuts, say up key for increasing volume etc. 2. Active screen to always be the video screen instead of the playlist.",

29,18 - 29,Yes,Ed Lessons (accessible via Ed Discussion);Canvas,,Laptop or other type of computer,,Learn new course content;Reference course content while doing assignments,,Online,Multiple lectures consecutively,Jump forward/backward in the video with arrow keys;I use the keyboard to perform other actions,I will normally take notes while watching in a OneNote page in a separate window,Yes,N/A,

30,40 - 49, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,Coursera,Laptop or other type of computer,,Learn new course content,,Online,One lecture at a time,Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,Pause and rewind are the most important. Better transcribing would be nice.,

31,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,"EdX, Udemy",Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,Multiple lectures consecutively,Pause and resume video with space bar,,Yes,Ability to control speed. Pause/play with space.,

32,18 - 29, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,EDX and Youtube,Laptop or other type of computer;Mobile phone,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,One lecture at a time,I do not use the keyboard to perform any actions,,Yes,"Easy to find keyboard shortcuts (which never happens, so I never use it!), as well as easy to control volume and rewind","if you are only surveying students, you could potentially drop the second question since we all use Ed?"

33,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Other,edX,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Online,One lecture at a time,Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,"ability to increase and decrease video speed, transcript",

34,18 - 29,Yes,Canvas;Udacity;Other,EdX,Laptop or other type of computer,,Learn new course content;Review course content for exams;Reference course content while doing assignments,,Both, depends on circumstance","Both, depends on circumstance",Control volume with arrow keys;Jump forward/backward in the video with arrow keys;Pause and resume video with space bar,,Yes,Ease of browsing across different lectures.,

35,30 - 39,Yes,Ed Lessons (accessible via Ed Discussion);Canvas;Udacity,,Laptop or other type of computer,,Learn new course content;Reference course content while doing assignments,,Online,One lecture at a time,I do not use the keyboard to perform any actions,,Yes,The pause feature and the ability to customize the speed.,

36,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion);Canvas;Udacity;Other,"Coursera, Udemy, LinkedIn Learning","Laptop or other type of computer;Tablet, such as iPad",,Learn new course content;Review course content for exams;Reference course content while doing assignments;Other,Earn LinkedIn Badges for job seeking,"Both, depends on circumstance",One lecture at a time,Pause and resume video with space bar,,Yes,User-friendliness; clear class structures,

37,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Udacity,, Laptop or other type of computer,, Learn new course content; Review course content for exams; Reference course content while doing assignments,, Online, "Both, depends on circumstance", Control volume with arrow keys; Jump forward/backward in the video with arrow keys; Pause and resume video with space bar,, Yes, Controlling video speed is great but cant or dont know how to do that on a phone, I think you could have asked feedback about length of individual videos. I find smaller concise videos are better than a mammoth one.

38,30 - 39, Yes, Canvas; Udacity,, Laptop or other type of computer,, Learn new course content; Review course content for exams; Reference course content while doing assignments,, Online, Multiple lectures consecutively, I do not use the keyboard to perform any actions,, Yes, Control of playback speed,

39,30 - 39, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Udacity,, Laptop or other type of computer,, Learn new course content; Review course content for exams; Reference course content while doing assignments,, "Both, depends on circumstance", One lecture at a time, Pause and resume video with space bar,, No, Accurately tracking my progress. Most of those platforms would not mark my completion of a video unless it's viewed to 100%, N/A

40,40 - 49, Yes, Ed Lessons (accessible via Ed Discussion); Canvas; Udacity,, "Laptop or other type of computer; Tablet, such as iPad", Learn new course content; Review course content for exams,, Online, One lecture at a time, Control volume with arrow keys,, Yes, Note-taking,