XEdu – Beta Submission

By: Luqman Gassama and Jordan Cowe

For: Prof. John Lee

Dynamic Web Design

About XEdu

XEdu was inspired by the disconnect between todays students and existing educational methods. While technology has changed rapidly educational technology often lags significantly behind. This creates a situation where the user experience ideas incorporated in the design of educational tools is often outdated, and in some cases almost entirely unknown to current students. A great example of this is traditional LMS systems like blackboard that are very heavily influenced by the Bulleting Board and Blog/CMS systems of the mid-2000s. These systems were built around a computing paradigm of sitting down at a desktop computer with a keyboard and mouse. By contrast it's not unusual for many current students to exclusively use phones and tablets for all their technology usage. This can often leave students frustrated because they must learn how to use an entirely foreign set of tools just to be able to learn.

Another problem that has existed for a long time but that has become markedly worse is the issue of distraction and short attention spans. Mobile content having trained its users to expect short bit sized and interactive content has created further resistance for long form content. Young students are quickly distracted when they don't receive content built around this constant reward setup.

Our goal with XEdu was to create an educational platform that provides students with content in a manner that is familiar to them. That helps gamify the learning process. And that can help drive student success in an online environment. We have taken inspiration from some of the most successful apps that drive a borderline addiction among their users such as HQ Trivia, TikTok, Curious, and other modern platforms that offer bit sized entertainment while maintaining depth.

In addition to the vertical video format, we encourage quizzes to be incorporated within the courses. The videos are required to be fairly short with initial planning indicating 3 minutes or less per video. This encourages instructors to break up the lessons into smaller chunks interspersed with quizzes and other forms of engagement. We believe this will help keep up student momentum and focus. The exact duration of the videos will likely change following user testing and feedback.

From a useability perspective we aim to use high contrast colours and visual reactivity to aid users in navigating the website. For example, buttons change colour and size slightly creating a sort of bounce when clicked to show users they have succeeded in clicking the button. The main video panels scroll both with a mouse wheel as well as by touch. Clicking a video will bring you to a focused course page with a much darker view and larger videos to aid in focusing.

Project Responsibilities

- Project Planning ○ Jordan, Luqman and Danning were all involved in coming up with ideas for the project and deciding on initial features
    - Jordan created the technical outline ○ Luqman and Danning conducted research on UI and design elements

    - Jordan created the initial wireframes and layouts for the Mobile pages based on the technical design and discussed features
    - Luqman and Danning iterated on the wireframes to create UI mockups
- Project Development ○ Following creation of the UI design Jordan began setting up the API with F3 for later connection
    - Luqman and Danning began working on translating the design into a working static prototype
    - Luqman built a container based mobile interface that was responsive on desktop screens while being full-screen on mobile
    - Luqman created the vertical slider for browsing videos on the home page ○ Jordan wired the vertical slider up to javascript to permit dynamically loading more videos
    - Luqman created the mobile version of the quiz page
    - Following a discussion with Prof. Lee about the project Jordan and Luqman decided to revisit the designs and translate them into desktop versions
    - Luqman sketched out an idea for how the page could be adjusted to work on desktop instead of mobile
    - Jordan turned Luqman's vertical slider into a card based horizontal slier that maintains vertical video and shapes it like a cellphone screen.
    - Luqman created the base layout for the home-screen and course-screen ○ Jordan created the home page cards and course screen video/quiz carousel system ○ Jordan connected the pages to the F3 based APIs using Javascript/Vue.js and Axios to request JSON from the apis
    - Both Jordan and Luqman have worked collaboratively on the main pages to tweak them and fine tune the designs.
    - Luqman created the moving background and login/register modals ○ Jordan added further interactivity and dynamic page elements

- Further Project Development – Beta

    - Luqman and Jordan evaluated the feedback from the alpha prototype to prioritize further feature development.

    - Jordan created wireframes for the Course Creation and All Courses pages

    - Luqman took these rough outlines and iterated on them to create visually appealing user interfaces in html and css

    - Luqman implemented the search functionality on the all courses page to filter and search within courses

    - Jordan made the course creation dynamic allowing a creator to add different types of content to the courses and expand the size of the course as desired.

    - Jordan implemented login/logout functionality using vue.js and webtokens.

    - Luqman redesigned the Q&A and Leaderboard panels on the sides of the course view

- Both Jordan and Luqman further optimized the website to remove glitches and minimize the issues surrounding resizing.

Looking Back and Future Opportunities

Looking back the initial project goal may have been a little overly ambitious. We were forced at multiple moments to scale back the idea and limit the features we implemented. One thing that would have made the process easier would have been changing the order in which we built the features. By starting with course creation tools first and targeting teachers it would have also been easier to fill in our own content on to the website to create the alpha and the beta.

Moving forward there are areas for improvement in some elements of user interaction. A key area of improvement is changing the way the courses are displayed on the home page to permit more clear information about the individual courses to be viewed without resort to viewing the video. Additionally, it's not clear that users can click on the videos to end up at the course page. Further improvements in useability are also very much possible.

Next, would be to improve the way that quizzes work. Currently quizzes are limited to one question. It would be great to modify this to allow for say 3-4 questions in certain quizzes. Additional course content options such as text and images would also e great candidates for further expansion.

Video Submission

https://media.ed.ac.uk/media/t/1_83pn30a3

Acknowledgements

Javascript Resources

The Vue.js Guide - https://vuejs.org/v2/guide/installation.html

Axios Documentation - https://www.npmjs.com/package/axios

W3 Schools Javascript Documentation - https://www.w3schools.com/jsref/jsref_forin.asp

Swiper.js API - https://swiperjs.com/swiper-api#methods-and-properties

Swiper.js Demos - https://swiperjs.com/demos

PHP Resources

F3 Framework User Guide - https://fatfreeframework.com/3.7/user-guide

F3 Framework API Reference - https://fatfreeframework.com/3.7/user-guide

F3 Framework CMS Example - https://github.com/f3-factory/f3-cms

F3 Simple Example - https://www.learn.ed.ac.uk/webapps/blackboard/content/listContent.jsp?course_id=_79654_1&content_id=_5601662_1

HTML/CSS Resources

Tailwind CSS Documentation - https://tailwindcss.com/docs

Daisy UI CSS Components - https://daisyui.netlify.app/

Swiper Documentation - https://swiperjs.com/swiper-api#css-styles

Web Dev Trick – https://webdevtrick.com Images and

Videos

https://commons.wikimedia.org/wiki/File:Librondo.jpg

https://daisyui.netlify.app/demos/cards

https://commons.wikimedia.org/wiki/File:Movement_of_organelles_in_Tradescantia_stamen_hair_cells.webm https://commons.wikimedia.org/wiki/File:Cytoplasmic_streaming.webm

https://commons.wikimedia.org/wiki/File:Sandpile_Matemateca_23.webm

https://commons.wikimedia.org/wiki/File:Brewer%27s_blackbird_by_Crissy_Field_(16898).webm