

XEdu – Alpha Submission

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For: Prof. John Lee

Dynamic Web Design

About XEdu

XEdu was inspired by the disconnect between today's 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 This creates a situation where the user experience ideas incorporated in the design of educational tools is often outdated, and in some cases almost entirely unknown to current students.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 Bulletin 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 usability 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.

Evolution of the design

The initial plan for XEdu was to create a mobile online experience geared towards the users themselves. To provide a website that behaved like an app. After feedback, discussion, and reflection, we decided to focus on the desktop version of the website first. This has a number of benefits, the first being that it gives a larger canvas to focus on design, next it allowed us to combine what were previously a number of separate pages into a small number of pages and pop-up modals for a simplified development process. From a usability perspective the desktop version is also potentially more important than mobile because it is more familiar to instructors and administrators. While it's important to create an

experience that is familiar to the learners, it is even more important that we be able to convince instructors to use the platform in the first place.

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 slider 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 developments for Beta

Due to some internal group challenges and the last-minute change to desktop not all features are currently built or functional as it stands. For the beta submission we would like to have the quizzes fully

functional returning a score that contributes to a leaderboard. We would also like to incorporate a functional system of questions and answers on the course screen for students to seek help.

Further to this we would like to add an optional login/registration system that will allow students to register for courses, post questions, receive notifications of updates, and maintain their progress in courses they are registered for.

On the teacher side we would like to add course creation tools to enable the simple creation of courses, lessons, and quizzes for users with an approved teacher account.

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_Tradesantia_stamen_hair_cells.webm

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

https://commons.wikimedia.org/wiki/File:Sandpile_Matematica_23.webm

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