



RESEARCH REPORT AND DESIGN PLANNING

Caoimhe O'Brien, Natalia Ryl, Aoife Leahy, Lee Lindsay

SECOND YEAR IDAD

Web User Interface Design



Contents

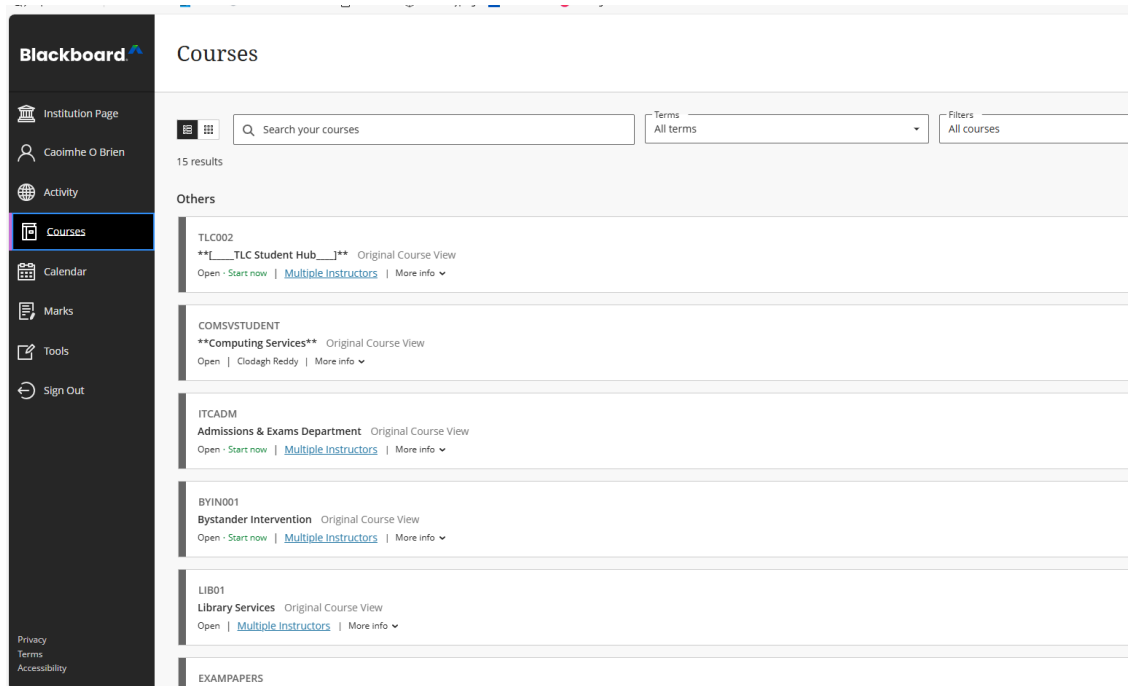
Topic Selection and Research	2
Blackboard	2
Khan Academy.....	6
Kahoot.....	10
Studyclix	14
Comparison	18
Audience and Context Research.....	20
User Personas.....	20
Role-play as Target Users.....	21
Assess the Access Environment.....	23
Evaluate the Target Audience's Tech Proficiency.....	24
Project Goals and Objectives	25
Project's Purpose	25
Broad Goals	25
User-Focused Objectives	25
Value Proposition.....	25
Preliminary Designs.....	26
Wireframe	26
Mood Board	26
Site Map.....	26
User Flow.....	26
Peer Feedback	26

Topic Selection and Research

Blackboard

<https://blackboard.itcarlow.ie>

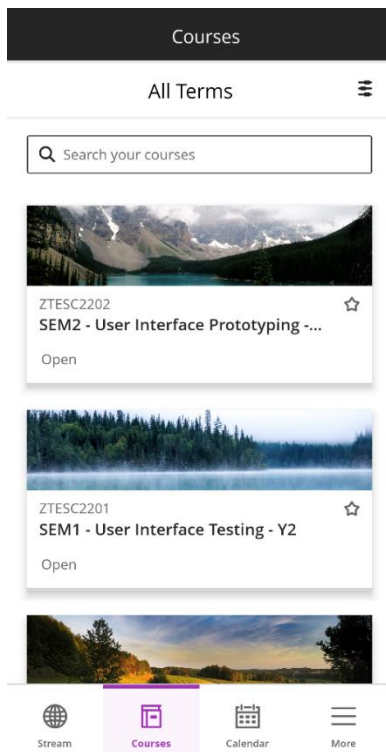
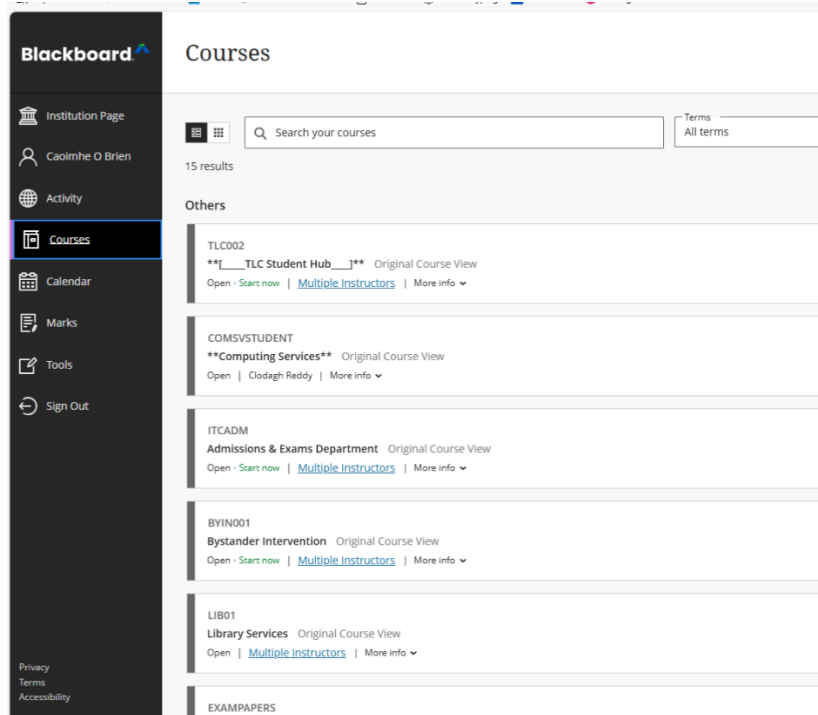
Usability



The menu and layout of this is really clear and consistent. The menu and important call-to-actions are clearly displayed. However, there is a lack of user feedback when a submission is made, it just brings you back to your “Courses” page. I also think what is missing from this page is a “Home” page; the “Courses” page kind of fulfils this role but this might be confusing with users who are not familiar with this website. The search function is usable however, the filter option is non-functional.

Overall, I do think this website is usable, but it can lack good user experience in certain areas.

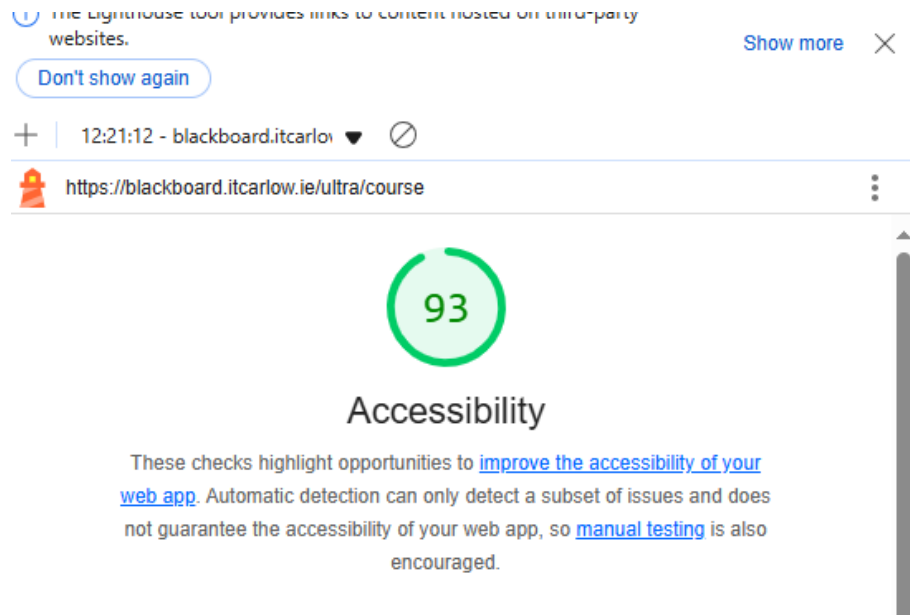
Responsiveness



While there is a functional mobile version of the site, it is very different from the web version. The touch targets and images/videos are scaled well on mobile and allows for easy interactions. The change in layout is optimized for the smaller screen.

However, the menu and options are quite different and there are a lot more options on the web layout which may confuse users.

Accessibility

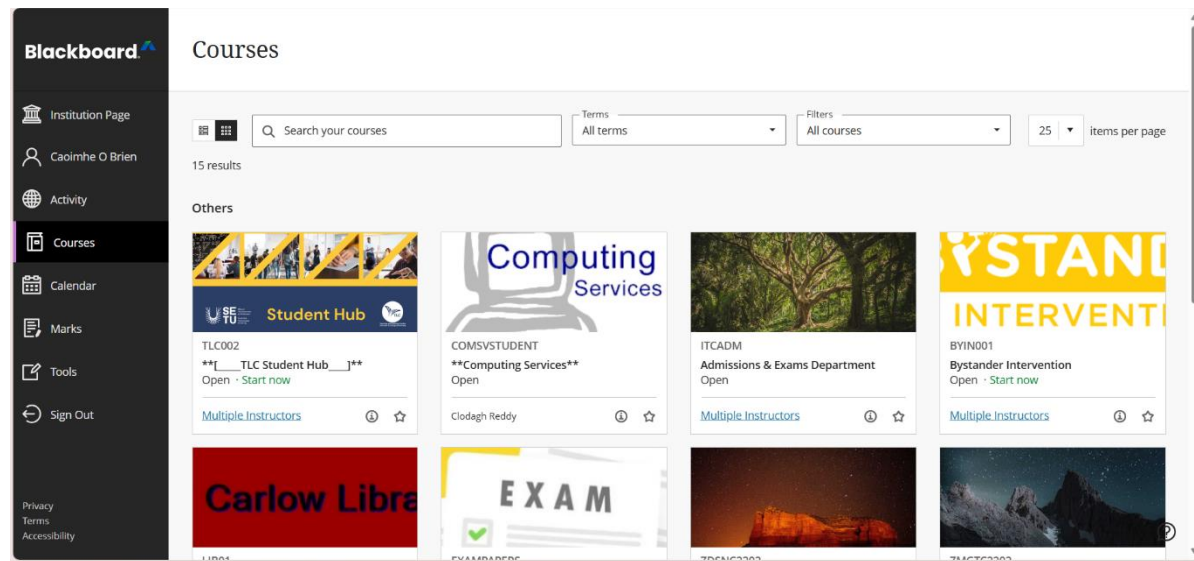


Blackboard got quite a high score on the Lighthouse however there are a few issues. One of which is that almost none of the pictures don't have alt text and the course link titles don't have discernible names. This affects accessibility as this hinders the use of a screen reader. However, the website has a good level of accessibility otherwise.

Aesthetic

The site has a very clean and simple aesthetic which aligns well with the educational purpose of the website. Most of the site has the same font except for the titles of the pages which was different. There is almost no colour, except for a line of purple on the nav bar and some blue text/ links. There is also a lack of images and other multimedia elements.

Content Quality



The content in the site is well structured and clearly relevant to audience's needs. The headings and sub-headings are clearly defined with size and the use of bold. However, the limited images that are used are generally not complimentary.

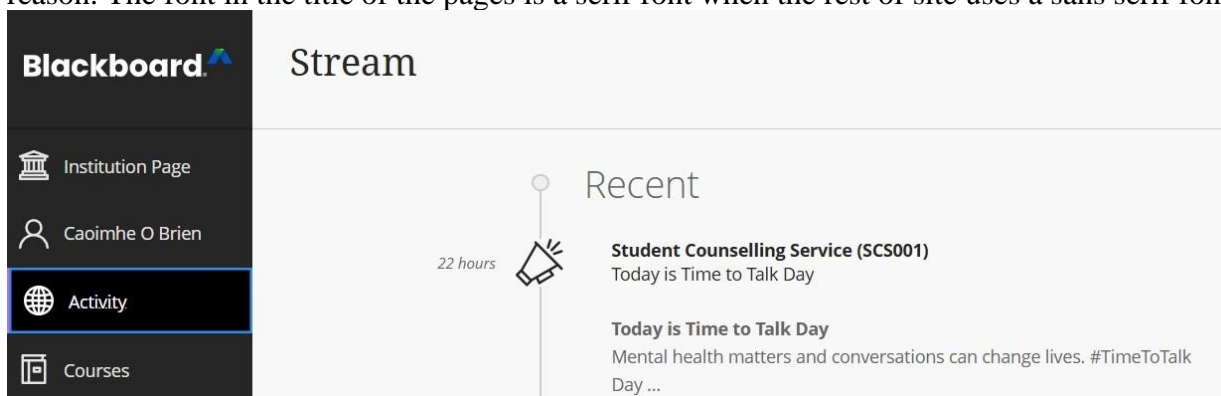
Interactivity

There is not a lot of interactivities in Blackboard. There are no animations or transitions between pages or dynamic elements. The nav bar does get an underline when the mouse is hovered over it.

Consistency

Blackboard is quite consistent; it uses the same colour palette (mostly black and white with sporadic bursts of colour), the interactions follow the same formats and there is consistency with its use of logos and brand colours.

However, there is one instance where the consistency is broken, and it seems like it's for no reason. The font in the title of the pages is a serif font when the rest of site uses a sans serif font.

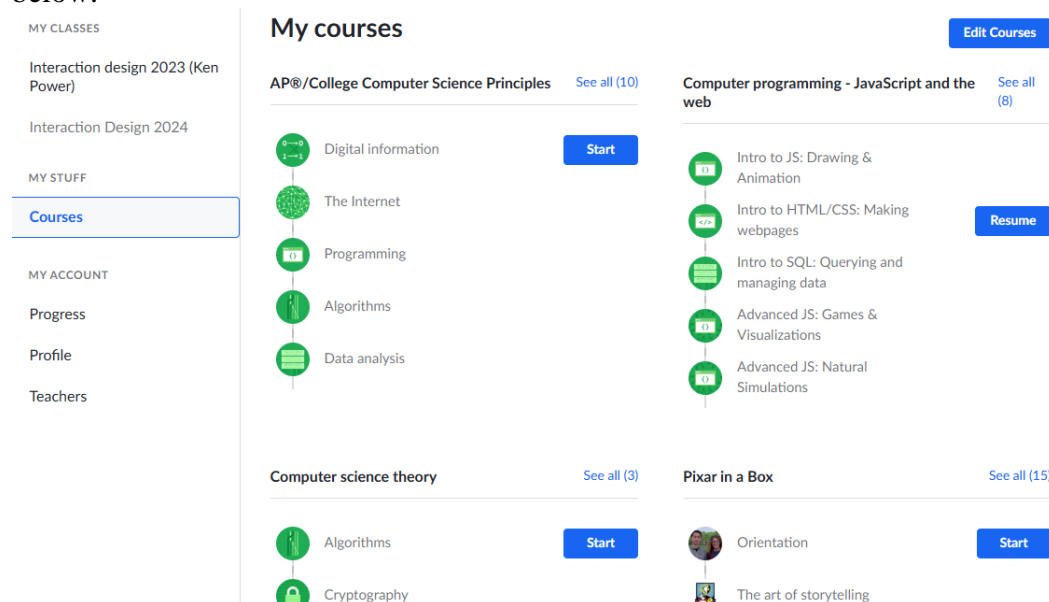


Khan Academy

www.khanacademy.org

Usability

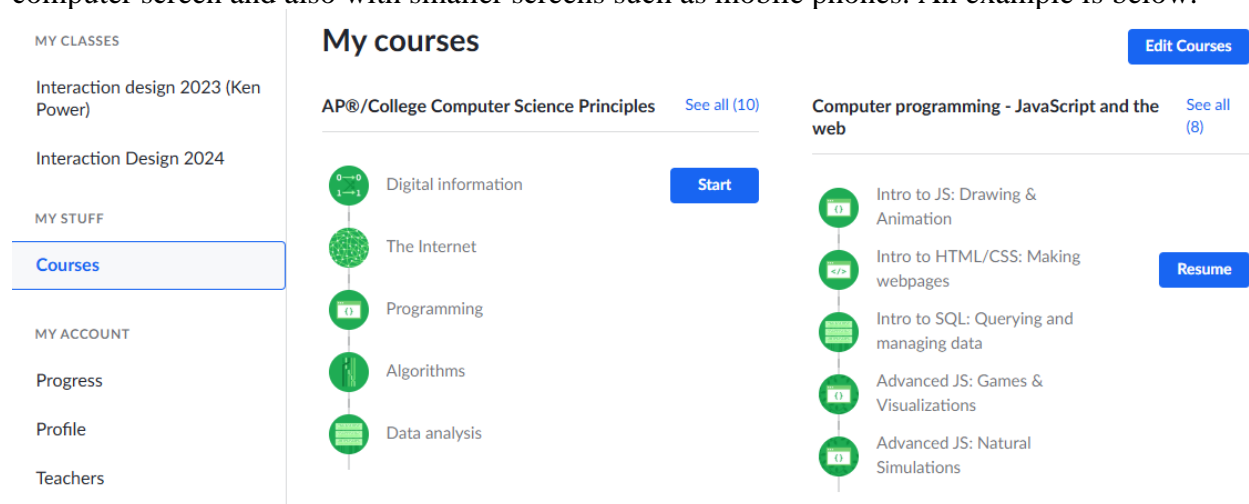
Khan Academy has many features that make the website easier to use for the user. Therefore, this improves the usability of the website. One of the features that Khan Academy uses is shown below.



Khan Academy uses sub sections for easy access to certain topics, such as courses. This is on the home page making it easier for the user to continue their progress or start again.

Responsiveness

Khan Academy responds very well with different sized screens. It works well on a laptop or computer screen and also with smaller screens such as mobile phones. An example is below.



MY CLASSES

Interaction design 2023 (Ken Power)

Interaction Design 2024

MY STUFF

Courses

MY ACCOUNT

Progress

Profile

Teachers

My courses

Edit Courses

AP®/College Computer Science
Principles

See all
(10)



Digital information

Start



The Internet



Programming

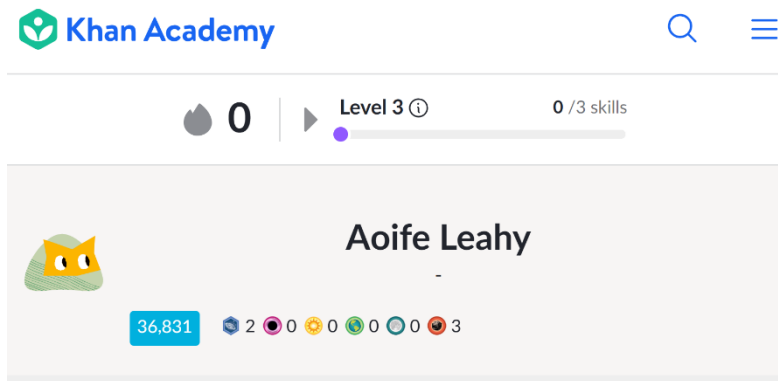


Algorithms

Instead of the sub section opening out to the right of the screen, it is shown below the sub section in the mobile version. Only some of the courses can be seen with a hyperlink to the side to show more. It can still be used and understood by the user.

Accessibility

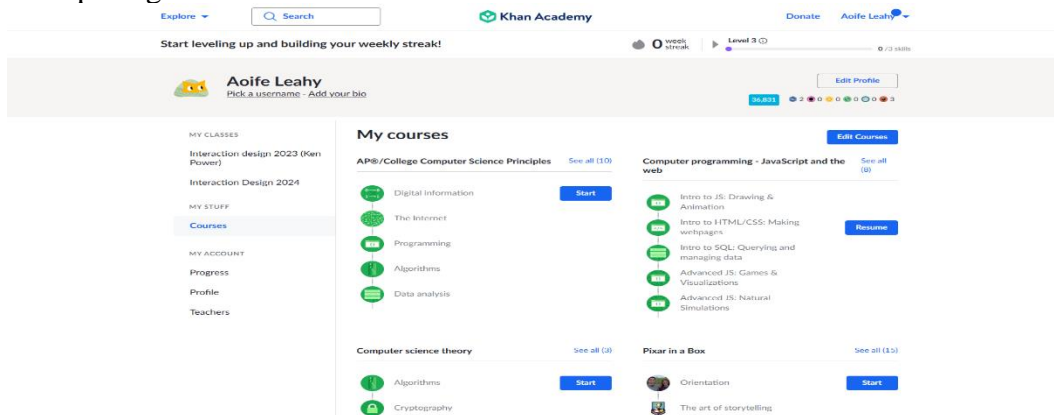
Accessibility is an area in which Khan Academy excels, with a score of 95 in the Lighthouse test. The only fault is that zoom scaling is disabled when an element viewport is less than 5. This makes it very hard for users with low vision to read and understand the text and other elements, as the website gets very crowded with words and images, decreasing the users understanding.



Aesthetic

Khan Academy uses neutral and basic colours. This creates a tidy and organized look. The colours used are simple, which makes it a calming experience and atmosphere for the users as there is limited colour.

However, there is a white background with only a pop of colour in the buttons the user presses. This is quite boring after a long time looking at it, which decreases the excitement for the user. The spacing between the different sections is used well which creates a clean look.



Content Quality









Khan Academy is well structured, as it uses headings on different pages to ensure the user understands what that specific page is about. It uses subheadings to explain each course with a button next to it for the user to press to be directed to another page.

There are also educational videos included in each course to help the user understand the topic. They all correspond to the topic.

Intro to HTML

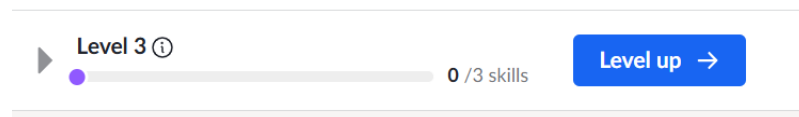
Learn what HTML is and how to make a webpage with marked up text and images.

Learn

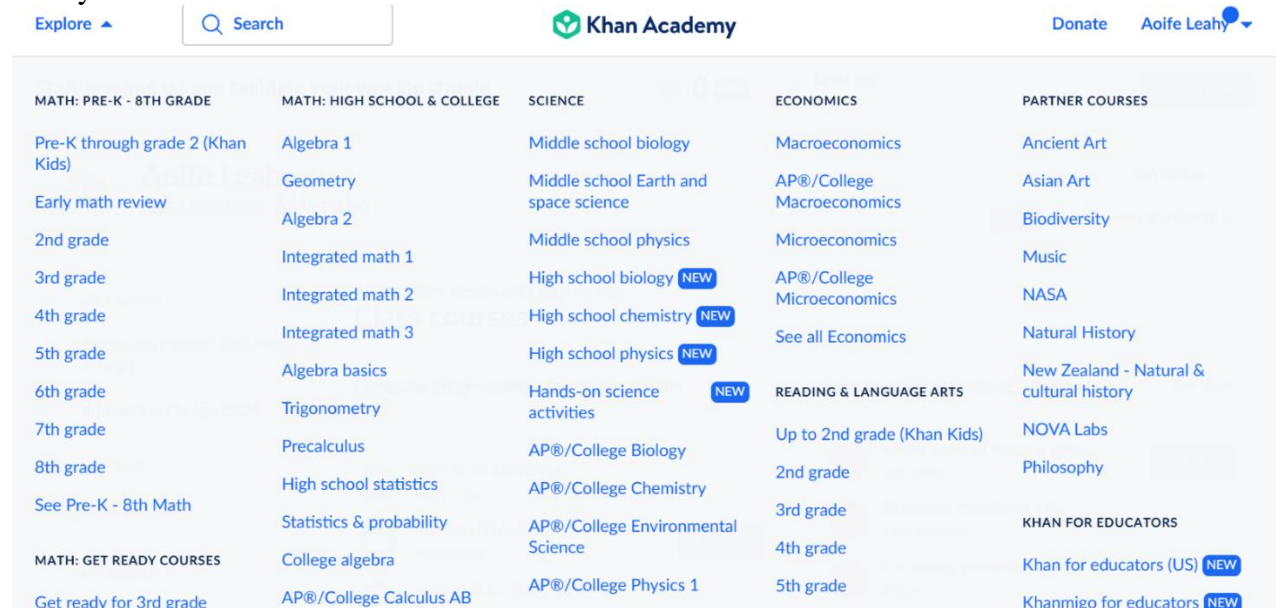
-  Welcome to the web!
-  HTML basics
-  Quick tip: HTML tags
-  Challenge: Write a Poem
-  HTML: Text emphasis
-  Challenge: You can learn text tags
-  HTML: Lists
-  Challenge: Wishlist

Interactivity

This is done very well in Khan Academy. When the buttons are hovered over, there is a blue barrier around the button to tell the user that they are about to press this to be directed somewhere else.



There are also drop-down menus included with this website. When the explore drop down menu is selected, it creates a blue underline. However, there are not structured very well, as they are untidy and hard to look at.



Consistency

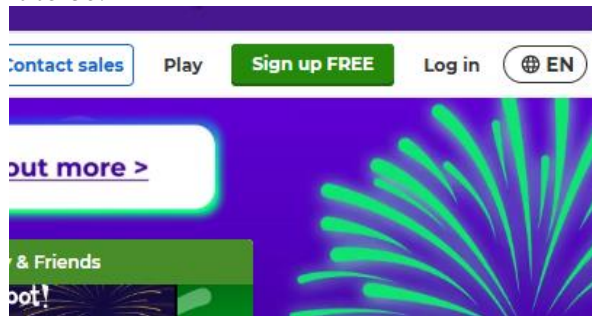
Khan Academy is very consistent throughout. It keeps to the same colour scheme and layout through the whole website. The logo and name of Khan Academy is displayed at the top of each of the pages, therefore keeping it consistent.

Kahoot

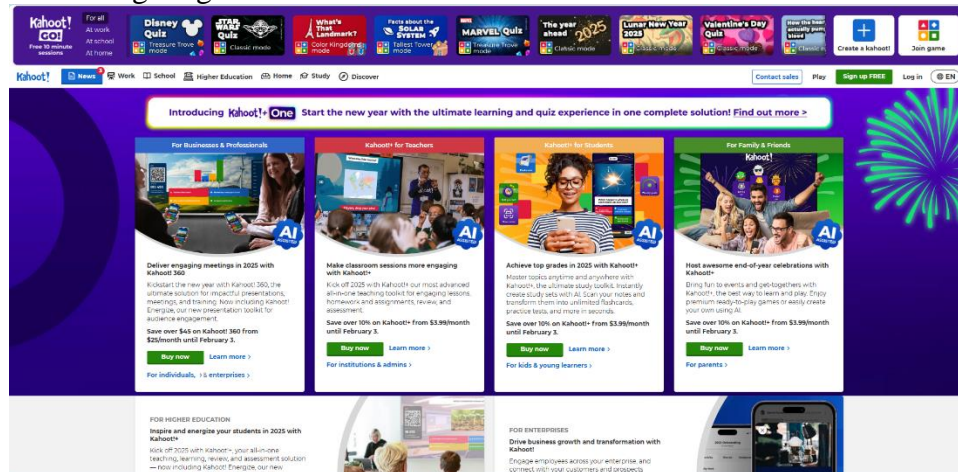
<https://kahoot.com>

Usability

Kahoot has a good layout and is easy to navigate around. All important features such as ‘Log in’ and ‘Sign Up’ are very easy to find as they are located at the top of the page, where you’d expect it to be.

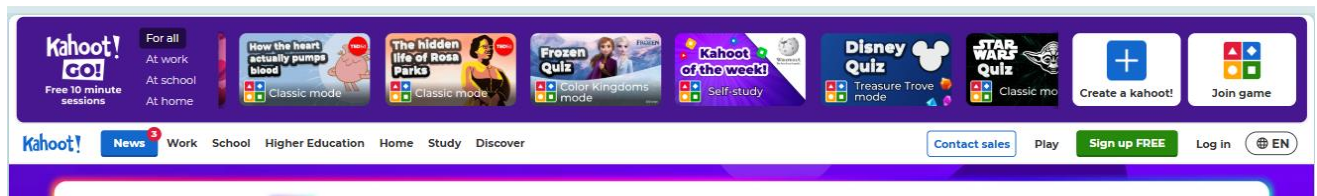


The only critique of the website is that it is very overwhelming which might push the user away from using it again in the future.

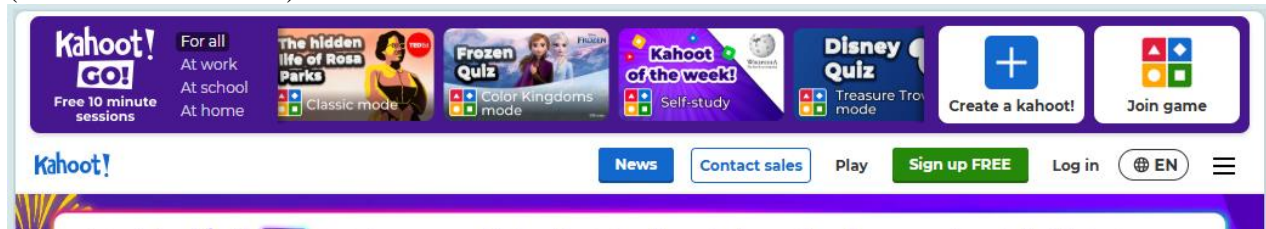


Responsiveness

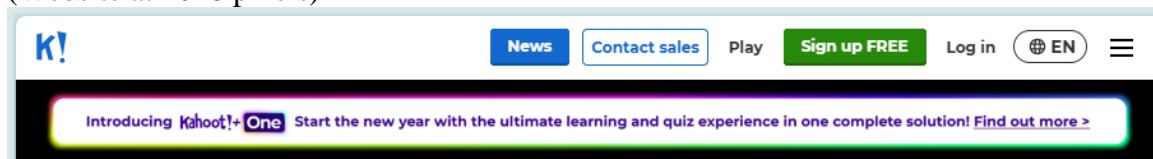
Kahoot handles responsiveness very well. A great example is its navigation bar at the top of the page. As the screen gets smaller in width the navigation bar adjusts its content to fit the screen.



(Website at full width)



(Website at 1028 pixels)



(Website at 900 pixels)

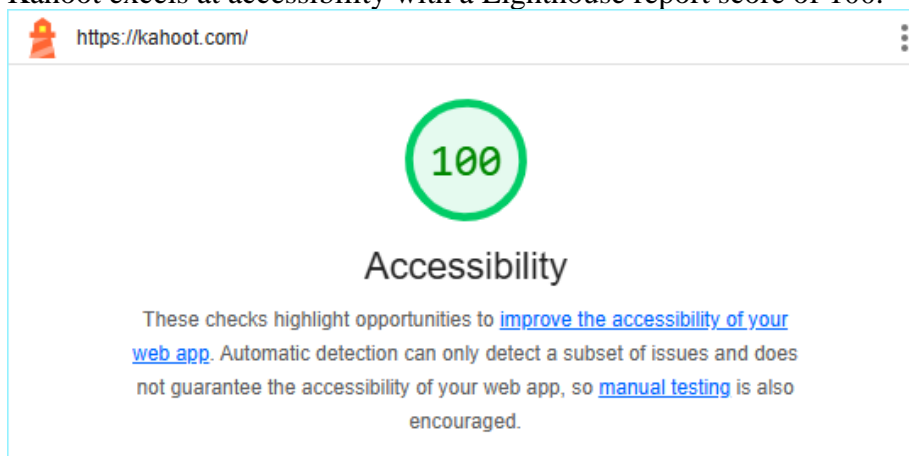


(Website at 360 pixels)

As you can see the navigation bar now has a burger menu when it reaches below 1028 pixels wide. It also removes the top selection when it is below 900 pixels wide.

Accessibility

Kahoot excels at accessibility with a Lighthouse report score of 100.

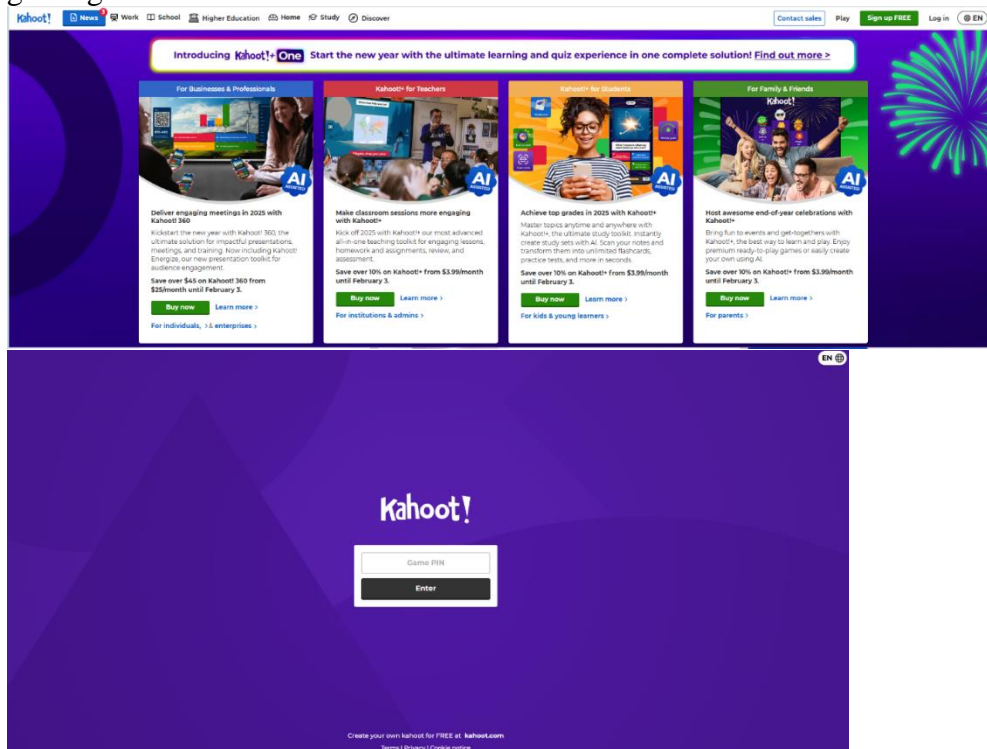


I went ahead and inspected the images on the website. While most images have an alt text, some have a 'title' tag instead meaning the user won't actually be able to access that.

As you can see, one image clearly has a name as it uses the ‘alt’ tag while the other image doesn’t have a name due to using the ‘title’ tag.

Aesthetic

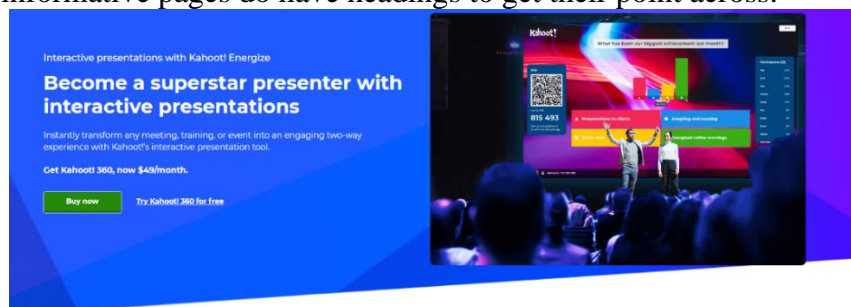
Kahoot keeps to its purple/white colour scheme throughout the website. This gives the website a fun and playful look to it, which suits the website exceptionally well as it is an educational gaming website.



Although the website is fun looking the bright colours might start feeling overwhelming for the user due to little use of white space. The different coloured images on top of the purple background may create visual clutter as well.

Content Quality

The homepage does not consist of headings, all titles are the same size and only the thickness changes to create a “heading”. This does not fully make it easier for the user though. Other informative pages do have headings to get their point across.

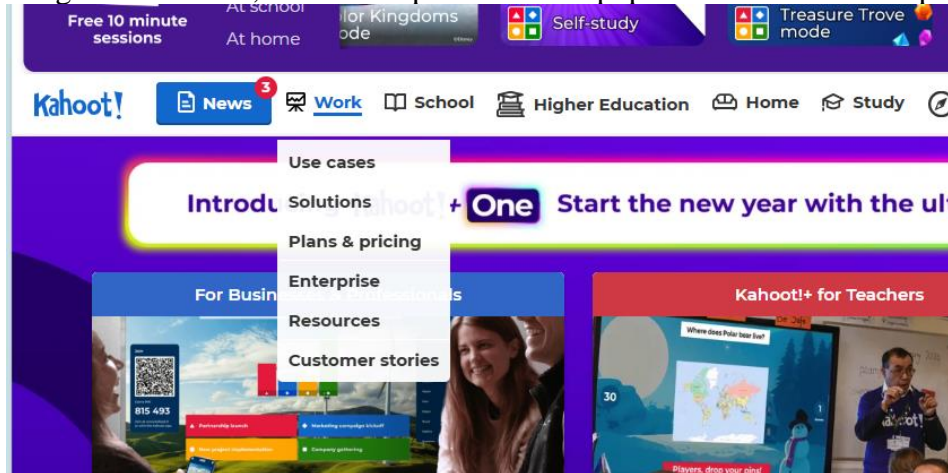


Other than that, the website stays fully relevant to its purpose, being an educational game website. All images match the text that its attached to and the language is simple suiting its target audience.

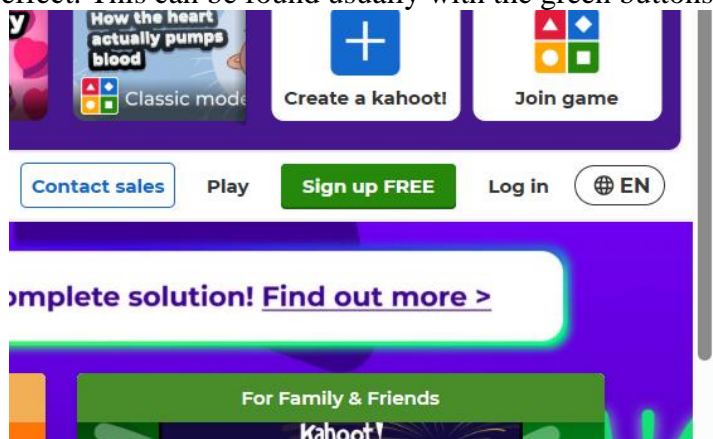
Interactivity

The interactivity on Kahoot is done very well. The user always stays informed where they are hovering and what they have selected.

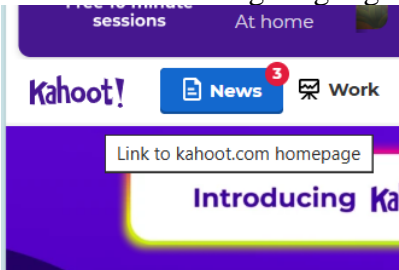
Some sections have drop-down menus and when the user hovers above that section, the section title gets underlined, and the drop-down menu pops down even without pressing it.



Although it is very slight and barely noticeable, Kahoot creates a button being pressed down effect. This can be found usually with the green buttons on the website.



Even the Kahoot logo highlights when its being hovered over.



Consistency

Kahoot is very consistent throughout its whole website. It keeps to the same typefaces, colour scheme and layout. The navigation bar also always stays in the same location enabling users' easy navigation.

Studyclix


<https://www.studyclix.ie/>

Usability

Studyclix has great examples of simple yet effective features that make it easier for the user to navigate and use its website.

Quick links

 Papers

 Quiz Results

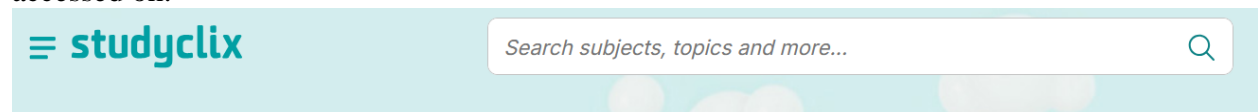
 Favourites

 Collections

A super useful feature Studyclix has is its quick links section, which has hyperlinks to the sites most visited pages, making it much faster for the user to navigate through the website.

Responsiveness

Studyclix adjusts some of its UI elements depending on the size of the screen of the device it's accessed on.



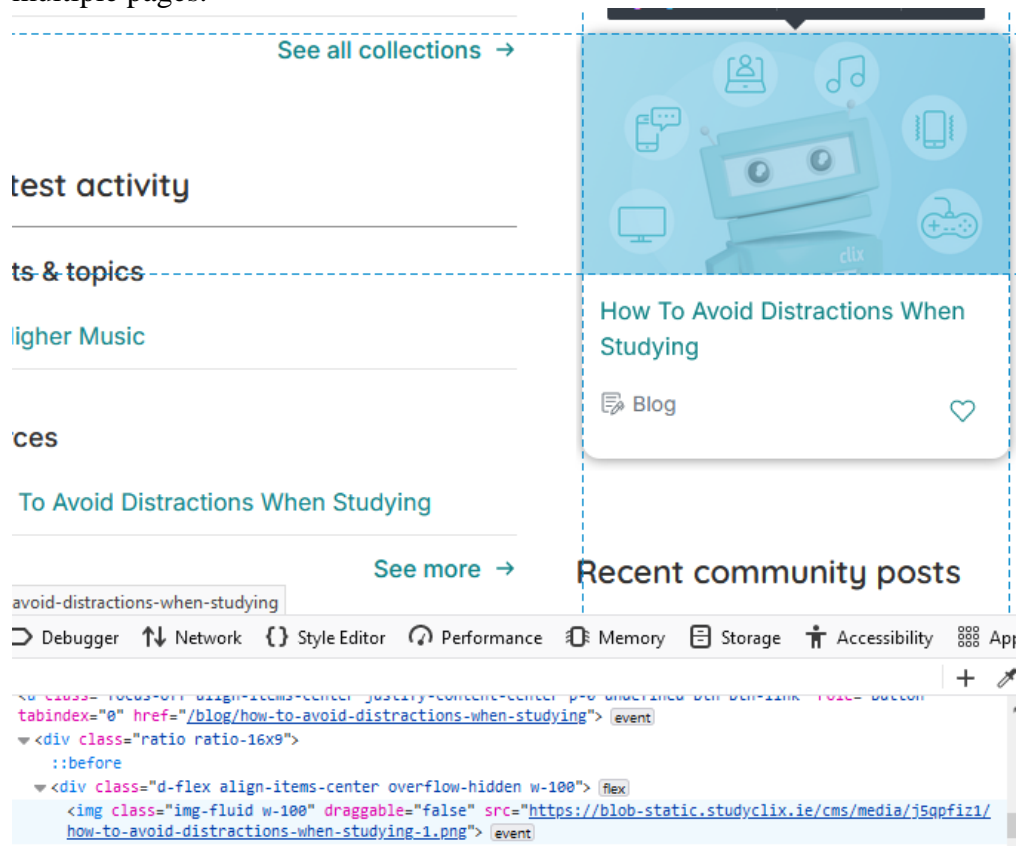


(Comparison between the Web and Mobile Device)

Studyclix removes the tooltips and size of the search bar and instead uses just the icon which still can be understood by the user as the search bar. The side bar that is accessed through the burger menu then becomes the full screen instead on the mobile version making it still easy to access and view for a mobile user.

Accessibility

Using the inspect tool I checked the webpages images for alternative text descriptions across multiple pages.

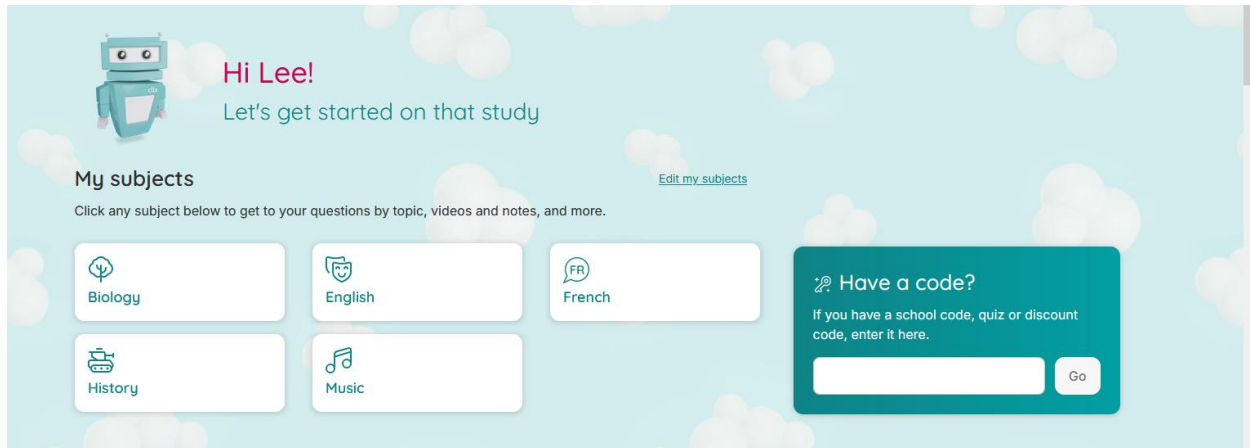


None of the images I had checked contained alt text, this makes it extremely difficult for those with visual impairments relying on screen readers to navigate the website.

I also checked if the webpage could be navigated using only a keyboard and struggled to even get past the search bar, showing how inaccessible the page could be to those with mobility impairments.

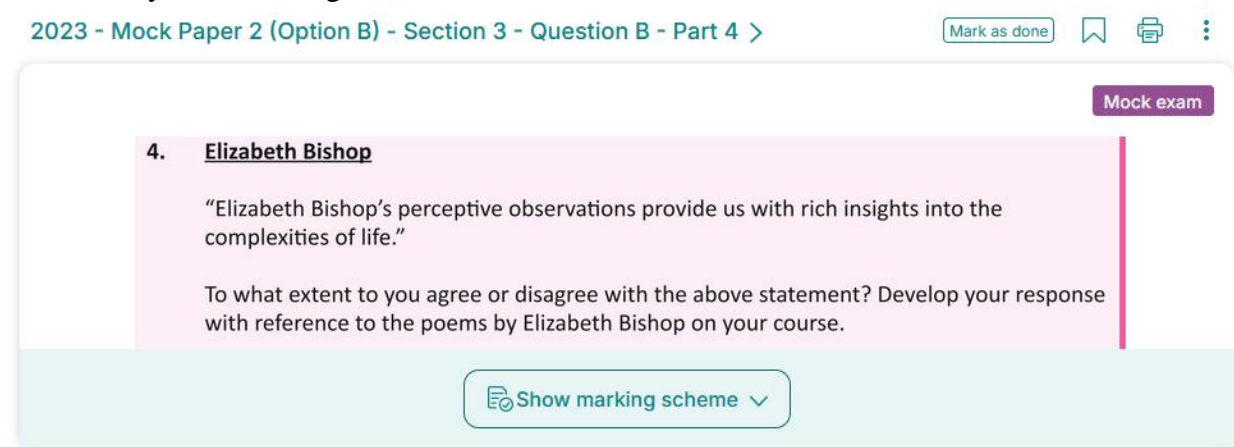
Aesthetic

Studyclix makes use of a very calm and light colour scheme throughout the website, the use of calm and light colours can ease students who are prone to stress while studying. Studyclix makes efficient use of spacing and typography to make the website a seamless and enjoyable experience for its users.



Content Quality

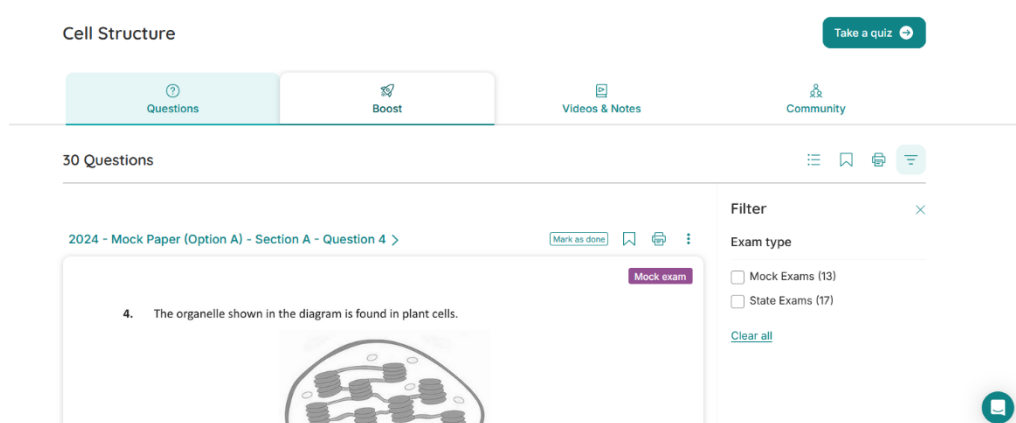
Studyclix provides students with a vast amount of information easily accessible for the specific content they are searching for.



Studyclix makes it easy for students to find specific information from different years by categorizing its content through subjects, year and heading and subheadings. Studyclix also features educational videos that go through the questions making it simple for the users to understand the content.

Interactivity

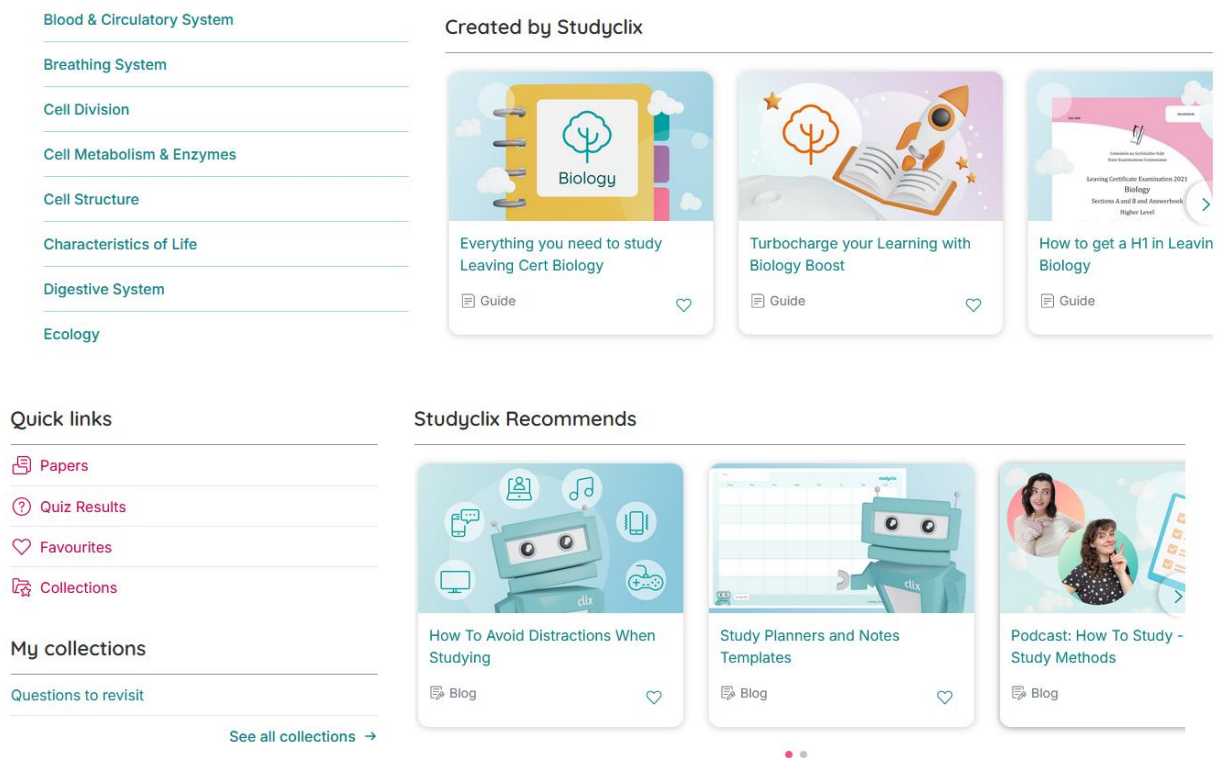
Studyclix has many interactive qualities that can help to keep the user engaged.



One of these interactive qualities is the numerous amounts of quizzes users can take for each topic in a subject. The quizzes give the user constructive feedback on the questions they got wrong, helping users study effectively. Studyclix also uses visual feedback such as hovering over a selected subheading and highlighting the one you're currently in.

Consistency

In terms of consistency Studyclix continues to maintain its stylistic design throughout all pages, keeping important navigation icons the same for different pages making it easier for first time users to learn the website faster.



(2 Different pages having similar layouts and navigation)

Comparison

Site	Pros	Cons	Features
Blackboard	<p>Blackboard is very consistent with the layout and structure and is relevant to the audience. It is also consistent with the use of logos.</p> <p>There is a mobile version of blackboard available for users.</p> <p>It has a lighthouse report of 93 on accessibility. It has a very clean and simple aesthetic.</p>	<p>It does not have a home page.</p> <p>Pictures do not have alt text. Course link titles don't have visible names.</p> <p>It has the same font throughout except for the titles of pages.</p> <p>There are a lack of colours and images used.</p> <p>Consistency in fonts lacks, as the titles of the pages uses a different font to the rest of the page.</p>	<p>List of courses.</p> <p>User submission.</p> <p>Database of learning resource.</p> <p>Search function.</p>
Khan Academy	<p>It is well structured as it uses sub sections and subheadings.</p> <p>Works well with smaller screens keeping the same layout.</p> <p>Interactivity is used very well, with drop down menus included.</p> <p>There is consistency in the layout and the logos used.</p>	<p>Zoom scaling is disabled when an element viewport is less than 5.</p> <p>It keeps the same colour scheme throughout using little to no colour.</p> <p>Explore drop down menu is very hard to read and understand as it is untidy.</p>	<p>Educational videos.</p> <p>Quizzes.</p> <p>Drop down menus.</p> <p>List of courses.</p> <p>Log in and sign up.</p>
Kahoot	<p>Good layout and easy to navigate, keeping the same typefaces and colour schemes.</p> <p>It is still usable when the screen is smaller.</p>	<p>Website is very overwhelming with colours and busy in general.</p>	<p>Log in and sign up.</p> <p>Drop down menus.</p> <p>Quizzes.</p>

	<p>It scores 100 on the lighthouse report.</p> <p>Interactivity is done well, including many features, that keeps the user informed.</p>	<p>Some pictures use a 'title' tag instead of an alt text.</p> <p>Homepage does not have proper headings.</p>	
Studyclix	<p>When the screen size gets smaller, the UI elements are altered to fit the screen.</p> <p>Spacing and typography is used well throughout.</p> <p>It is structured well, using headings and subheadings.</p> <p>There is constructive feedback given on questions.</p>	<p>No pictures have alt text.</p> <p>Accessibility is limited. Keyboard cannot be used to navigate around the page.</p>	<p>Hyperlinks</p> <p>Log in and sign up.</p> <p>Quizzes.</p> <p>Feedback.</p> <p>Learning resources.</p>

Audience and Context Research

User Personas

Persona One:



Name: Bertha, Mid 40s, Lecturer at University

Goals: Wants to use this app to create plans and lessons for her business lectures.

Frustrations: She's not familiar with newer technologies.

Persona Two:



Name: Rose, 20, Student at University

Goals: Wants to improve learning skills and complete quizzes to learn more.

Frustrations: New student and a first-time user.

Persona Three:



Name: Gerald, 52, Administrator in University

Goals: Checking what courses/ modules students are enrolled in.

Frustrations: Educational Interfaces usually cater towards either students or educators, so he often finds it difficult to find and utilize the necessary tools.

Persona Four:



Name: Timmy, 26, Lecturer at University

Goals: Improves student interest

Frustrations: Lack of respect and engagement from students

Role-play as Target Users

We asked three peers to role-play as a Student, a Lecturer, and an Administrator, using our initial website prototype. We asked a peer outside our course to represent the student. We asked a peer from our class to represent the lecturer. We asked an outside friend to represent the administrator.

We have provided the following scenarios for each role:

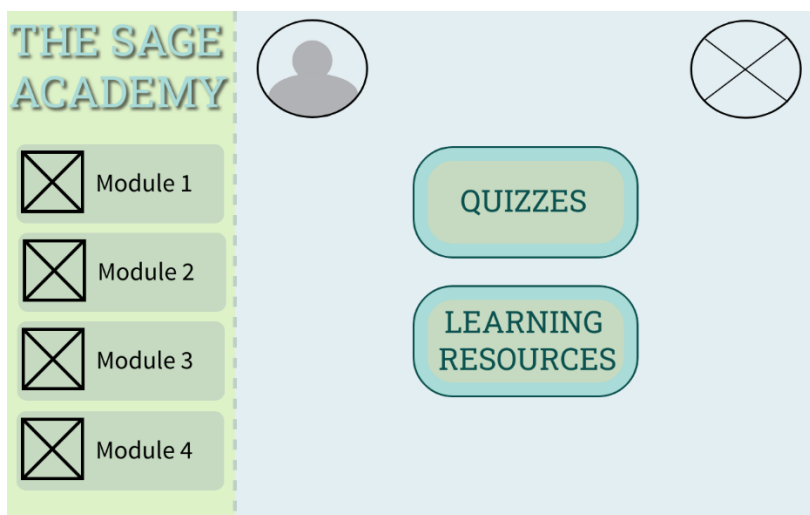
- For the Student we are going to ask them to access Quiz 4 for Module 2.

- For the Lecturer we are going to ask them to create a new quiz for Module 2.
- For the Administrator we will be asking them to view the class count for Module 1.

Scenario One: Student

- He pressed the 'I'M A STUDENT' button to access the sign in page.
- He entered his email and password to sign in, then pressed 'START'.
- He pressed 'QUIZZES' and selected 'Module 2'.
- He chose 'QUIZ 4' and submitted the right answer.

Originally, we had the module list on the homepage. This created some confusion for the user. This has now been fixed.

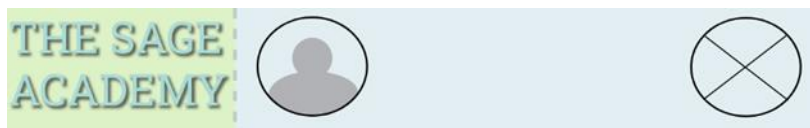


The user had no suggestions to make.

Scenario Two: Lecturer

- He chose the 'I'M STAFF' to access the sign in page.
- He entered his email and password to sign in, then pressed 'START'.
- He pressed 'QUIZZES' and selected 'Module 2'.
- He selected the option to create a new quiz.
- He then pressed 'ADD QUIZ' which added the new quiz onto the quiz page.

The user was slower than average finding the 'Create New Quiz' option.

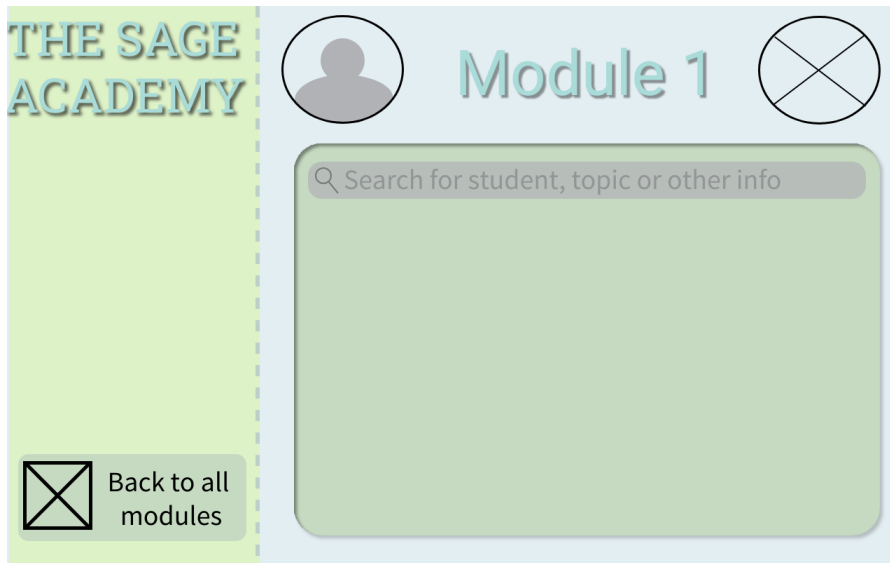


The user did not like that it logged you out of the website when pressing the logo. We decided to replace the logo with an 'exit' button, so its function is more understandable.

Scenario Three: Administrator

- She chose the 'I'M STAFF' to access the sign in page.
- He entered his email and password to sign in, then pressed 'START'.
- She chose 'CLASS INFORMATION' and 'Module 1'.
- She pressed the search bar, that selected the number of students, to which she then selected 'Show Results' which displayed the information.

The user didn't know that they had to use the search bar to look up the module class count.



The user suggests possibly adding actual options in addition to the search bar as it wasn't obvious that's what they had to do.

Assess the Access Environment

We have considered the possible environments the target audience might be in while using the website and what sort of device they would be using.

We have come up with the following conclusions:

- It is likely that a student would access the website in a classroom, or at home. Students are also likely to access the website either on mobile or desktop.
- Lecturers are likely to access the website mainly on desktop at home, in their office, or in the classroom.
- Administrators are also likely to access the website in their office on a desktop.

After evaluating the possible environments, we have decided to ask peers to access the website in the following environments:

- In a moderate quiet home.
- In a busy classroom.
- In a quiet office.

Moderate Quiet Home

The user thought the website was very easy to use no matter the noise level. Their only suggestion was to change the colours used.

Busy Classroom

The user mentioned that the use of “images” is a great way to access a section without having to read a lot of text. The user also suggested changing the colour scheme as there isn’t enough contrast.

Quiet Office

The user found it very easy to navigate through the various pages. There were no over-complicated features that made the user have to think more than they needed to.

Evaluate the Target Audience’s Tech Proficiency

From our personal experiences students tend to be more experienced when it comes to technology as they are introduced to it at an early age. It really depends on lecturers and administrators as it depends on their own personal skill and how long they have been in the technology field.

From this we are going to need to test an advanced user and a beginner user.

- We will ask the advanced user to create a quiz through the staff’s page (module 2).
- We will ask the beginner user to login as a student.

Advanced User

The user had no trouble accessing the pages and completing the task. They did mention the website is already very simple looking so completing any task will be easy to do.

Beginner User

As the option to log in as a student was the very first page, the user had no difficulties completing their task. The user also decided to go further into the website and still thought the website was easy to navigate.

Project Goals and Objectives

Project's Purpose

The main purpose of our website is to be used as an educational tool to be used by college students and their lecturers, using our websites intuitive quizzes and learning resources to get a greater grasp on their education.

Broad Goals

- Sign in/Sign out
- Create quiz/ manage quizzes
- Take quiz
- Multiple modules
- Learning resources
- Track academic progress

User-Focused Objectives

- Provide both college students and lecturers a chance at improved learning opportunities
- Easy access to students' progress in quizzes and marks for lectures
- Enables the users to access different pages depending on if the user used the staff sign in or the student sign in
- Simple set up for lecturers to setup their own notes to be accessed in the learning resource section
- Intuitive access to quizzes for students and lectures

Value Proposition

Our website gives both students and lectures with improved learning opportunities. Easy access to tracking academic progress and engaging resources provided by lecturers. Our website appeals to students looking to get a greater understanding of their courses through quizzes and resources allocated by their lecture. Due to the lack of college education tools available we believe our website will attract users because of the demand and lack of other websites in the college education market.

Preliminary Designs

Wireframe

This section can be found in the GitHub folder.

Mood Board

This section can be found in the GitHub folder.

Site Map

This section can be found in the GitHub folder.

User Flow

This section can be found in the GitHub folder.

Peer Feedback

Wireframe

- Progress bar too hard to differentiate between progress or grades.
 - Progress bar has been adjusted so it's easier to tell what it is.
- Ticks and Crosses are helpful.
- No create quiz page for wireframe.
 - This option has been added to the staff's page.

Mood board

- Nice neutral colors.
- Kinda cluttered.
 - The mood board has been shifted around to make it less cluttered.
- Nice universal font choice.

User flow

- There wasn't enough of a distinction between Homepage and Login.
 - We added the word "login" to make it more obvious that it is the same page.
- Say class instead of page on user flow.
 - This issue has been fixed.

Site Map

- Well structured.
- Kind of overwhelming.
 - This was due to the number of possibilities on our website. We made it look neater so it's less overwhelming.
- Good colour palette used.