

Engram

Moderated Remote User Test Report

Jen Lee
Jichen Zhu
Sara Almai
Wenjing Wu

Table of Contents

Executive Summary	3
Introduction	6
Methodology	7
Findings & Recommendations	13
Overall Findings	13
Finding 1: Navigation	14
Finding 2: Layout	21
Finding 3: Interactivity	25
Conclusion	28
References	30
Appendices	31
Table 1: Participants Demographics	31
Table 2: Cumulative List of Findings	32
Table 3: Post-Questionnaire Results	33

Executive Summary

This report is a study on the usability of **Engram**. Engram is a website aid founded and created by Priscilla Cancar for **high school students** in the **AP World History** course. In the body of this report, usability findings will be detailed and recommendations for improved usability will be suggested.

The evaluators for this study are four graduate students from the Fall 2021 Usability Theory and Practice course at Pratt Institute in Brooklyn, New York. The evaluators carried out this study utilizing remote moderated user testing. The participants of these tests were current AP World History teachers and former AP World History students. During the testing sessions, participants were given five tasks to complete on the Engram website.

After compiling the results of these tests, we found that most participants had a positive opinion of the overall website and all but one of the participants were able to complete all of the given tasks successfully. The positive feedback from the participants encompassed the overall website aesthetic, the incorporation of a map, and the inclusion of videos, among other things. For instance, a participant who is a current AP World History teachers noted, “My students like having the videos”.

From a cumulative list of findings gathered from the testing sessions, both positive and negative, we chose three usability findings we felt were most significant to the overall usability of the website to highlight and put forth recommendations which could be utilized to improve the overall usability of the website.

Executive Summary

1 . Navigation Finding

Participants felt confused about the ordering of sections on the historical event selection page, the "People" page, and the "Terms" page.

Participants noted that they would usually rely on a search function to find specific information.

Navigation Recommendations:

- A. Add the starting year and ending year of each historical event and arrange them in chronological order;
- B. Arrange the content in alphabetical order on the "People" page and "Terms" page;
- C. Add a search function;

2. Layout Finding

The unclear content structure led participants to spend unnecessary time looking at peripheral materials while trying to find the answer. In addition, current font size could be unfriendly to users with weaker eyesight.

Layout Recommendations:

- A. Divide text material into smaller chunks;
- B. Adjust the font size of the text;
- C. Update the method of displaying images;

Executive Summary

3. Interactivity Finding

Participants found difficulty in interacting with the “Developments” page and misunderstood the function of the world map and timeline bar.

Interactivity Recommendations:

- A. Remove the highlight effect on the world map regions when hovering;
- B. Show the arrows for the carousel onscreen at all times;
- C. Add a textbox with simple instructions guiding users on how to use the “Developments” page as intended;

Introduction

Engram is a website aid for **high school students** in the **AP World History** course. It was founded and created by Priscilla Cancar. Cancar, a former AP World History student herself, was frustrated with the resources available to study for the course, and more specifically, prepare for the exam. Engram was born out of a recognition of a gap in the market and an aspiration to fill this gap.

This study was carried out by four graduate students from the Pratt Institute School of Information in Brooklyn, New York. This report **details the execution of remote moderated user tests** conducted on the Engram website and **analyzes the findings consolidated from these tests**. The scope of this evaluation is **high school students taking AP World History**. Former AP World History students and current AP World History teachers were recruited as subjects to lend to this scope. Within this scope, we sought to **evaluate the usability** of Engram and **offer suggestions to improve the usability** of Engram.

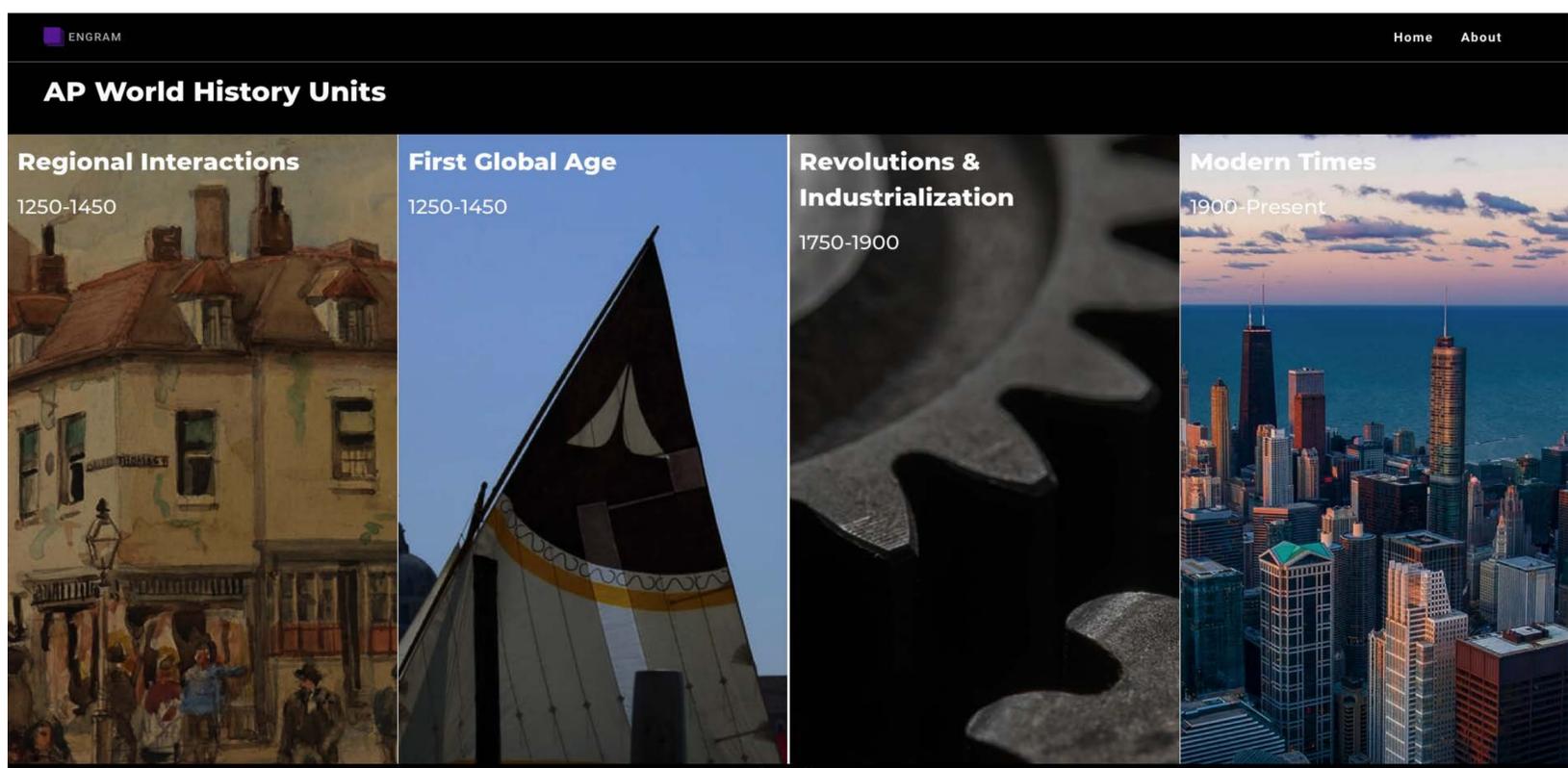


Figure 1. Engram landing page

Methodology

For this study, we utilized remote moderated user testing. Remote moderated user testing is an evaluation method completed using screen-share and talk-aloud techniques. This method of evaluation involves the active participation of a facilitator or moderator. In contrast to an in-person approach, participants are not required to travel to an on-site testing location. The advantages of this approach include being cost-effective, time-effective, and convenient for both participants and evaluators. This approach is especially useful in the context of the COVID-19 pandemic.

The summary of the steps involved in a remote moderated user test, as described by the Nielsen Norman Group (Nielsen 2020), are detailed below:

Plan

1. Choose a tool.
2. Plan how to administer tasks.
3. Do the pilot test before the real test
4. Schedule practice sessions.

Communications

1. Send reminders.

Sessions

1. Invite the team.
2. Run the session with the user.
3. End the session.

Methodology

Moderated Usability Test Plan

In conducting remote moderated user tests, task administration is a crucial factor. The evaluators created a script to ensure consistency between testing sessions. Participants were instructed to think aloud as they went through each task during their respective sessions. Evaluators recruited participants through the Pratt Institute School of Information listserv, an AP World History school database, and an AP World History Teacher Facebook group. Those recruited were surveyed and screened and eight participants were ultimately selected.

Participants

We selected eight participants from various schools and various states within the United States to participate in the study. Four participants were current AP World History teachers. Their ages ranged from 32 to 50 and they had anywhere from 1 to 9 years experience teaching the course. They included textbooks, Freemanpedia, and Youtube among their utilized teaching materials. Four participants were former AP World History students. Their ages ranged from 22 to 30 and they took the course between the years of 2008 and 2015.

Method

We examined the website through remote moderated user testing, which allowed us to observe, record, and analyze the participants as they engaged with the website on a desktop view. This evaluation method focuses on the participants and their tasks and prioritizes empirical evidence which in turn helped us to pinpoint findings for the overall usability of the website. After participants completed the tasks and provided feedback, the information was consolidated and analyzed to detail usability findings and offer recommendations for improved usability.

In addition to the tasks, evaluators also prepared pre-test and post-test questionnaires, one for current teachers and one for former students, to learn more about the demographics and thoughts of the participants. These questionnaires included questions about educational materials used, teaching and learning styles, and feedback, among other things.

Tool

The user testing was conducted through Google Meet, an online software that allows facilitators and moderators to observe the participants' interaction with a website and to listen to the participants' comments on their experience via screen sharing. The software allows recording of the testing sessions and includes a notetaking feature which enables collection and analysis of information.

Participants were encouraged by moderators to express and explain their thinking process aloud throughout the testing session. The two common moderation techniques specifically used are referred to as Concurrent Think Aloud (CTA) and Concurrent Probing (CP) (Nielsen, 1993). Once it was determined by moderators, through observation, that participants had completed a task to the best of their ability, they were prompted to rate the difficulty of the task. Participants were assured throughout their respective sessions that their feedback was very helpful and greatly appreciated.

Pre-test Questionnaire (Current Teachers):

1. How long have you been teaching AP World History?
2. What kind of educational materials do you use for the class?
3. Have you ever used online materials, e.g., YouTube or Wikipedia?

Pre-test Questionnaire (Former Students):

1. What kind of educational materials did you use during the class?
2. Have you ever used online materials?
3. What was the most frustrating part of studying AP World History?

Scenario:

Please imagine that you are a high school student who is taking AP World History. This week, you are learning about the Cold War and for additional understanding of the topic, you are going to use Engram.

Task:

1. Take a couple of minutes to browse the homepage. Explain what you think this website is about and what you can do on this website without clicking on anything yet.
2. Find out the three major causes of the Cold War (According to Engram).
3. Find what the Space Race is and what its impact was (According to Engram).
4. You want to watch a video that further explores the death of John F. Kennedy. Please navigate to this to the best of your ability.
5. Find the meaning of Perestroika (According to Engram).

Post-test Questionnaire (Current Teachers):

1. What frustrated you most about this website and what would you change?
2. What did you like about the website?
3. How likely are you to recommend this website to your students on a scale of 0-10 and why?

Post-test Questionnaire (Former Students):

1. What frustrated you most about this website and what would you change?
2. What did you like about the website?
3. How likely is it that you would have used this site for the course on a scale of 0-10 and why?

Data Analysis

Once all testing sessions were completed, evaluators reviewed the recordings by watching, listening, and notetaking. The findings were then consolidated into a single table, providing a consistent document of qualitative and quantitative data. This allowed evaluators to better assess patterns and trends and effectively pinpoint findings to improve overall usability. In order to prioritize what usability findings were most important, evaluators rated the severity of the findings based on the 4-point scale provided by the Nielsen Norman Group (Nielsen 1994).

0 = I don't agree that this is a usability problem at all

1 = Cosmetic problem only: need not be fixed unless extra time is available on project

2 = Minor usability problem: fixing this should be given low priority

3 = Major usability problem: important to fix, so should be given high priority

4 = Usability catastrophe: imperative to fix this before product can be released

Evaluator ratings were averaged and the averages were used to discern which findings should take precedence and be highlighted in the report. For the purposes of this report, findings with an averaged severity rating of 3 or more were given priority.

Note: The consolidated list of all the findings, their locations, and their severity ratings is located in the “Appendices” section of this report.

Findings & Recommendation

Overall Findings:

In the evaluation of the Engram website, evaluators asked participants to rate the site from 0-10 based on whether or not they would recommend it to their students (for current teachers) or whether or not they would've used it themselves (for former students). The average rating given by current teachers was 7/10 and the average rating given by former students was 5.5/10. Evaluators identified twenty usability recommendations of various severity ratings. Three significant recommendations were highlighted in this report. These recommendations encompassed **navigation, layout, and interactivity**. These recommendations were chosen based on their severity. Recommendation 1, which pertains to navigability, was given a severity rating of 3; Recommendation 2, which pertains to interactivity, was given a severity rating of 4; Recommendation 3, which pertains to layout, was also given a severity rating of 4. Engram is an attractive, engaging, and holistic resource for high school students wanting to succeed in AP World History. Participants complimented the website, saying, "The website has good visuals and it is clean", "It is concise and useful", and "I like the simplicity of design". Improving the usability of Engram will help the website to center its users and therefore hopefully attract users. The recommendations highlighted in this report can be used to improve the usability of Engram. Each recommendation will be further explored and suggestions for improvement offered.

Finding & Recommendation 1: Navigation

Issue description: The overall aesthetic of the Engram website is appealing, with clear distribution of operation modules, enabling easy navigation. However, participants pointed out that, while the main page for each topic has the subtopics arranged in chronological order, many pages, such as the “Historical event selection” page, the “People” page, and the “Terms” page, do not have an identifiable order. **“Loved these little ‘Terms’ and the ‘People’ sections, but the order doesn't seem to make sense!”** Participants who were current AP World History teachers pointed out that this could be confusing for students who are just beginning to learn about these topics. At the same time, many participants commented on the lack of a search function available on the website. This could make it challenging for users, especially students who are still unversed in these topics, to find specific content. **“The website needs a search function! My students would not be able to find these academic terms.” “My first instinct is to SEARCH it.”** (Figures 2, 3, 4)

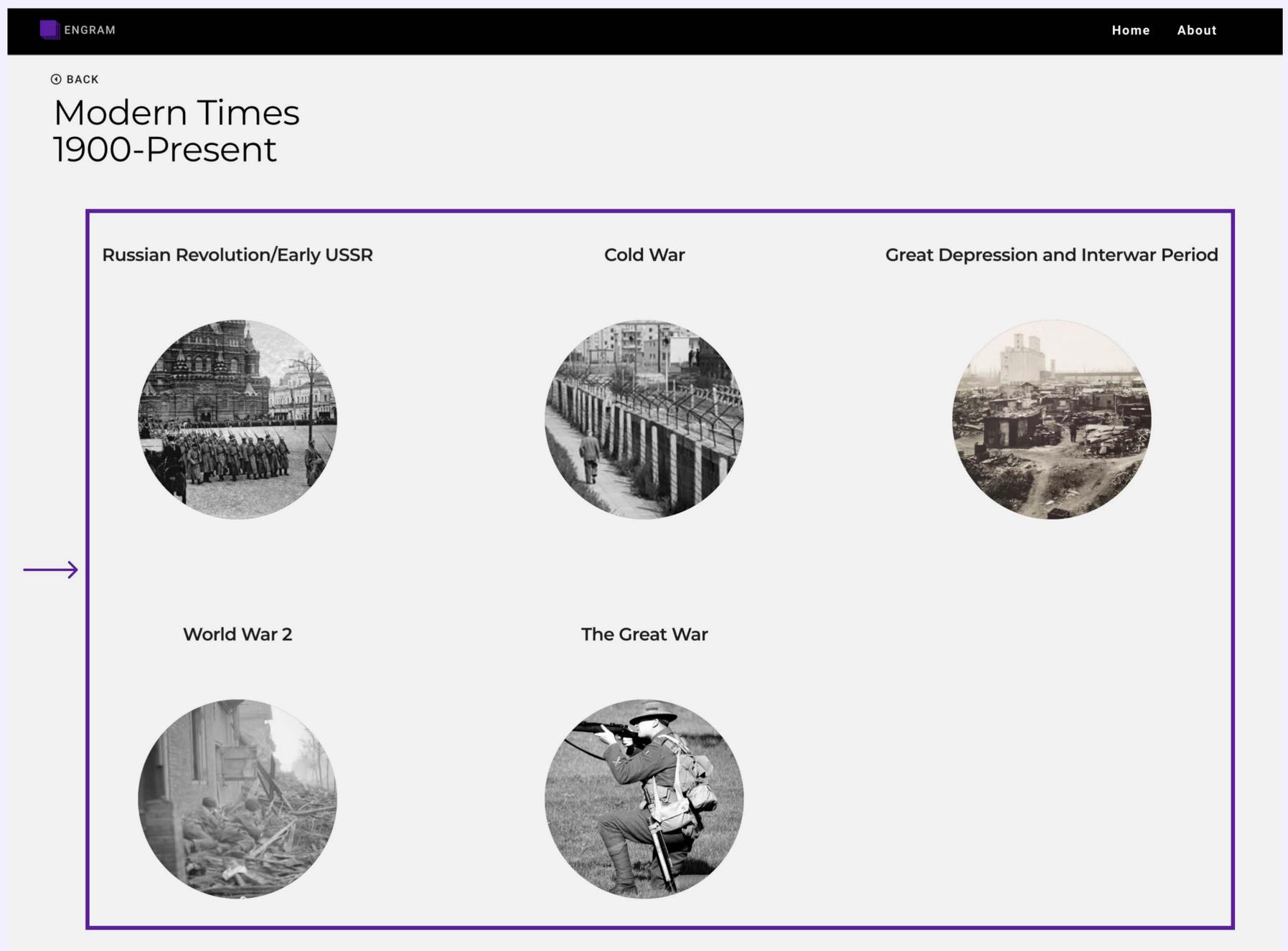


Figure 2. Navigation Issue: "Historical event selection" page

FINDINGS & RECOMMENDATIONS

ENGRAM Home About

Modern Times Cold War

BACK

Intro Trends Developments **People** Sources Terms

Historical People

FIDEL CASTRO
Born: 1926
Passing: 2016
90 YRS

Fidel Castro was a Cuban politician and revolutionary during the era of the Cold War. Identifying with communistic ideology, he and others started a revolution in Cuba in 1959 that forced the president out of office. As soon as he gained power, Cuba became a close ally of the Soviet Union and an enemy of the United States. Throughout the Cold War, he put Cuba in th...

Learn More

MIKHAIL GORBACHEV
Born: 1931

Mikhail Gorbachev is a Russian and former Soviet politician. He was the eighth and last leader of the Soviet Union and the General Secretary of the Communist Party of the Soviet Union. He was the head of state for the country from 1988 until 1991. Ideologically, he initially followed Marxism-Leninism, but during the early 90s, he leaned more towards social...

Learn More

J. ROBERT OPPENHEIMER
Born: 1904
Passing: 1967
63 YRS

J. Robert Oppenheimer was an American physicist. During the second world war, Oppenheimer was the wartime head of the Los Alamos Laboratory and is credited with being the "father of the atomic bomb" for their role in the Manhattan Project, the undertaking that developed the first nuclear weapons. He remained extremely influential in the United...

Learn More

YURI GAGARIN
Born: 1934
Passing: 1968
34 YRS

Yuri Gagarin was a Soviet Air Forces pilot and cosmonaut who became the first human to travel into outer space, marking a major milestone in the Space Race. His capsule, Vostok 1, completed one orbit of the Earth on April 12th, 1961. He became an international celebrity and was awarded many medals and titles.

Learn More

RICHARD NIXON
Born: 1913
Passing: 1994
81 YRS

Richard Nixon was the 37th president of the US from 1969 until 1974. Before becoming president, he was the 36th vice president and a representative and senator from California. While he was president, the US withdrew from the Vietnam War, lessened tensions with the USSR and China, and presided over the launch of Apollo 11. He introduced the...

Learn More

Figure 3. Navigation Issue: "People" page

The screenshot shows a web application interface for 'ENGRAM' with a navigation menu on the left and a main content area. The main content area is titled 'Cold War Terminology' and features a list of six terms, each with a representative image and a brief description. A purple arrow points to the 'Perestroika' entry.

ENGRAM Home About

Modern Times
Cold War

BACK

- Intro
- Trends
- Developments
- People
- Sources
- Terms**

Terminology

- **Berlin Wall**
A barrier through the city that divided its east and west parts
- **Warsaw Pact**
An eastern military alliance designed against NATO
- **Tzar Bomba**
The largest nuclear weapon to ever exist
- **Perestroika**
A political movement for reformation within the USSR during the 1980s created by Mikhail Gorbachev which was meant to reform the Soviet economy by decentralizing the economy and opening up the market.
- **Red Scare**
A wave of panic and suspicion in the United States that spread paranoia about communists
- **White Revolution**
The White Revolution (called White because it was bloodless) was a series of reforms in Iran that started in 1963 by Mohammad Reza Pahlavi and lasted until 1979. There were a lot of reforms that were made/attempted to be made: land reform, sale of some state-owned factories, construction of an expanded road, rail, and air network, several dam and irrigation projects, the eradication of diseases, industrial growth, the suffrage of women, nationalization of forests and pastures, formation of literacy and health corps, the institution of profit-sharing schemes for workers, the development of a more independent foreign policy and established working relationships with the Soviet Union and eastern European nations.

Figure 4. Navigation Issue: "Terms" page

Recommendation: In order to help users find content with ease and efficiency, we compiled a couple of recommendations. Firstly, on the historical event selection page, we recommend adding the starting year and ending year of each historical event, as well as arranging them in chronological order. This change could also make it easier for users to distinguish between historical events and therefore increase understanding. Secondly, we recommend arranging the content in alphabetical order on the "People" page and "Terms" page, which could help users find relevant information more quickly. Lastly, we recommend adding a search function to the navigation bar at the top of the page so that users can use keywords to find specific content quickly and accurately at any time (Figures 5, 6, 7).

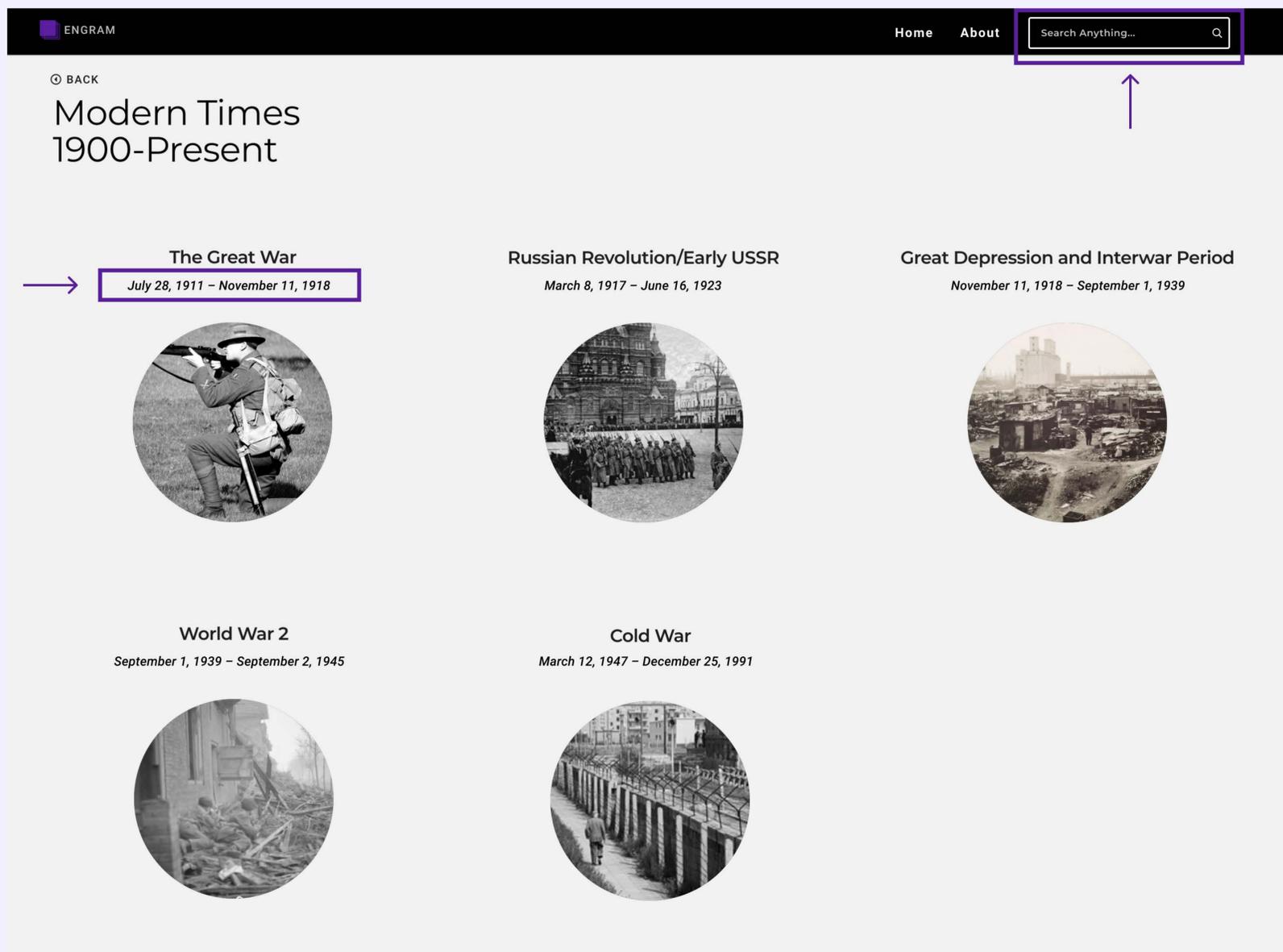


Figure 5. Navigation recommendation : "Historical event selection" page

FINDINGS & RECOMMENDATIONS

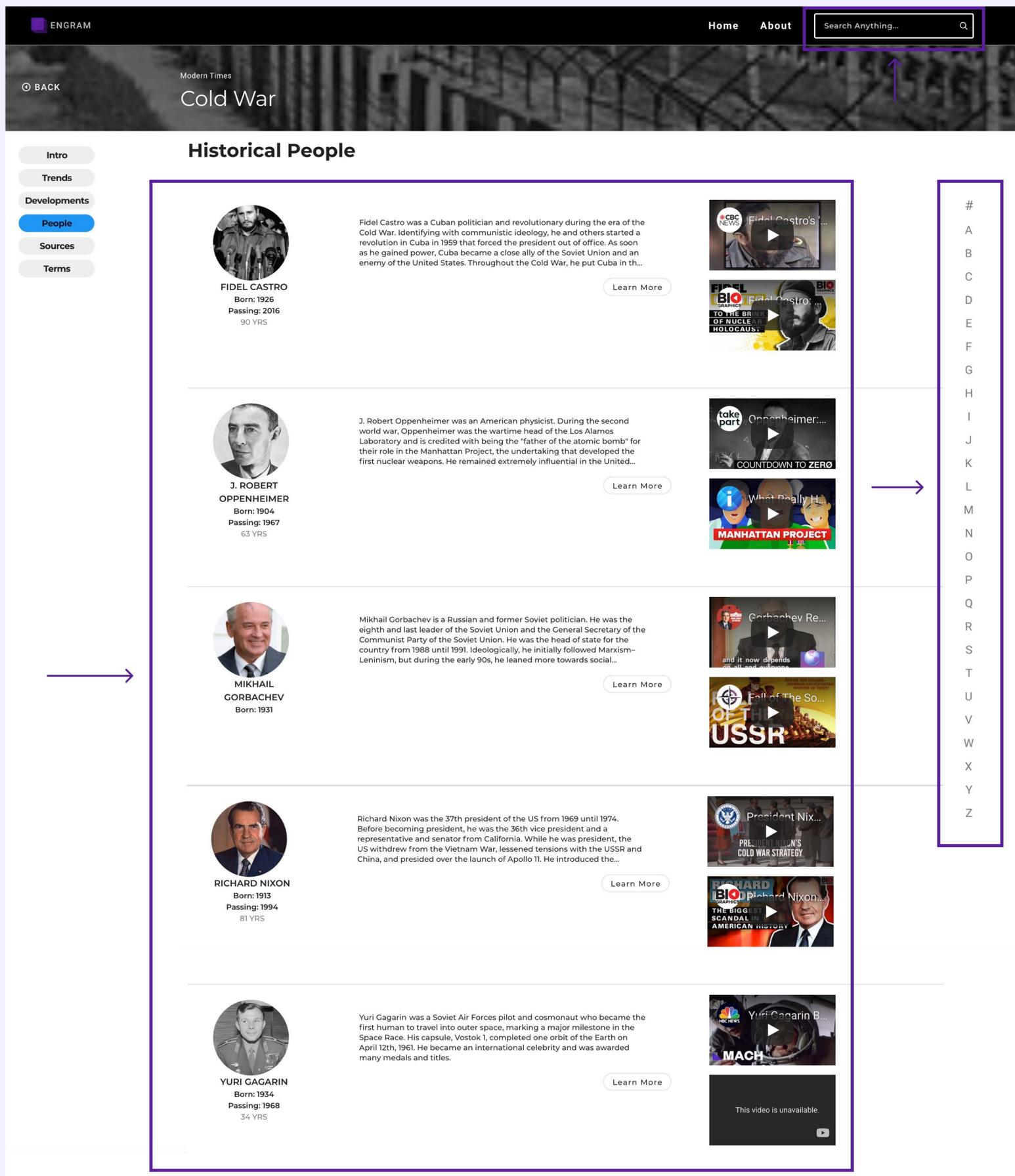


Figure 6. Navigation recommendation: "People" page

FINDINGS & RECOMMENDATIONS

ENGRAM Home About Search Anything...

Modern Times Cold War

BACK

Intro Trends Developments People Sources **Terms**

Terminology

- **Berlin Wall**
A barrier through the city that divided its east and west parts
- **Perestroika**
A political movement for reformation within the USSR during the 1980s created by Mikhail Gorbachev which was meant to reform the Soviet economy by decentralizing the economy and opening up the market.
- **Red Scare**
A wave of panic and suspicion in the United States that spread paranoia about communists
- **Tzar Bomba**
The largest nuclear weapon to ever exist
- **Warsaw Pact**
An eastern military alliance designed against NATO
- **White Revolution**
The White Revolution (called White because it was bloodless) was a series of reforms in Iran that started in 1963 by Mohammad Reza Pahlavi and lasted until 1979. There were a lot of reforms that were made/attempted to be made: land reform, sale of some state-owned factories, construction of an expanded road, rail, and air network, several dam and irrigation projects, the eradication of diseases, industrial growth, the suffrage of women, nationalization of forests and pastures, formation of literacy and health corps, the institution of profit-sharing schemes for workers, the development of a more independent foreign policy and established working relationships with the Soviet Union and eastern European nations.

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z

Figure 7. Navigation recommendation: "Terms" page

Finding & Recommendation 2: Layout

Issue description: Many participants found it challenging to complete Task 2, “Find out the three major causes of the Cold War (According to Engram).” This information can be found on the “Introduction” page. There is a lot of helpful material available, such as a world map displaying relevant regions and a paragraph detailing lasting impacts. However, the unclear content structure led participants to spend unnecessary time looking at peripheral materials in an effort to find the information they were looking for. One participant who is a current AP World History teacher mentioned, **“My students are not going to read that. The information is not big enough.”** Moreover, accessibility needs to be taken into consideration regarding the “Introduction” page. A couple participants pointed out that the font size used was too small and therefore potentially unfriendly to users with weaker eyesight. The font size for the body paragraph of Engram was 12px. Based on the guidance from Apple, font size on a webpage for a body paragraph should be at least 16px to be accessible (Apple 2021) (*Figure 8*).

FINDINGS & RECOMMENDATIONS

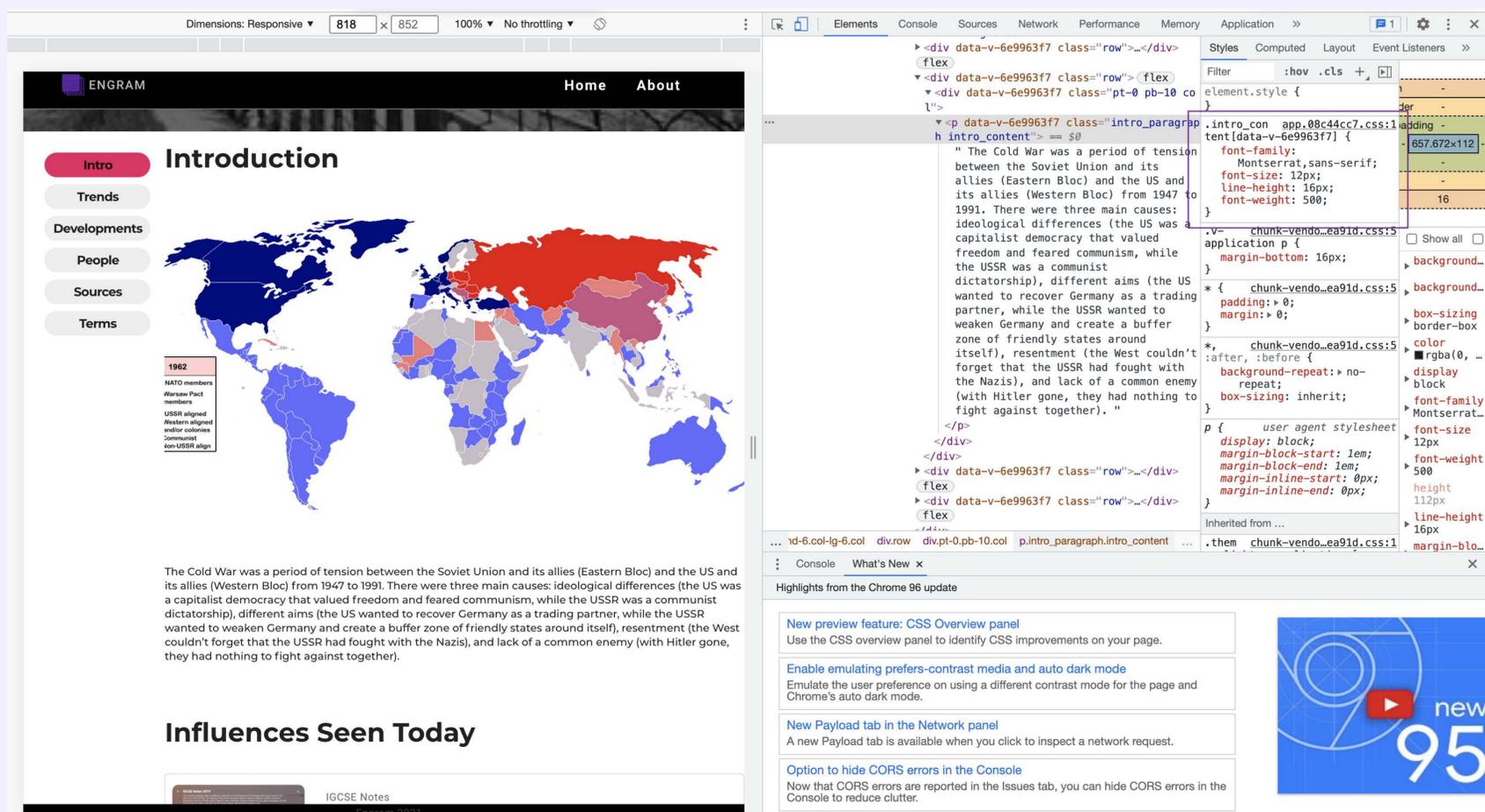
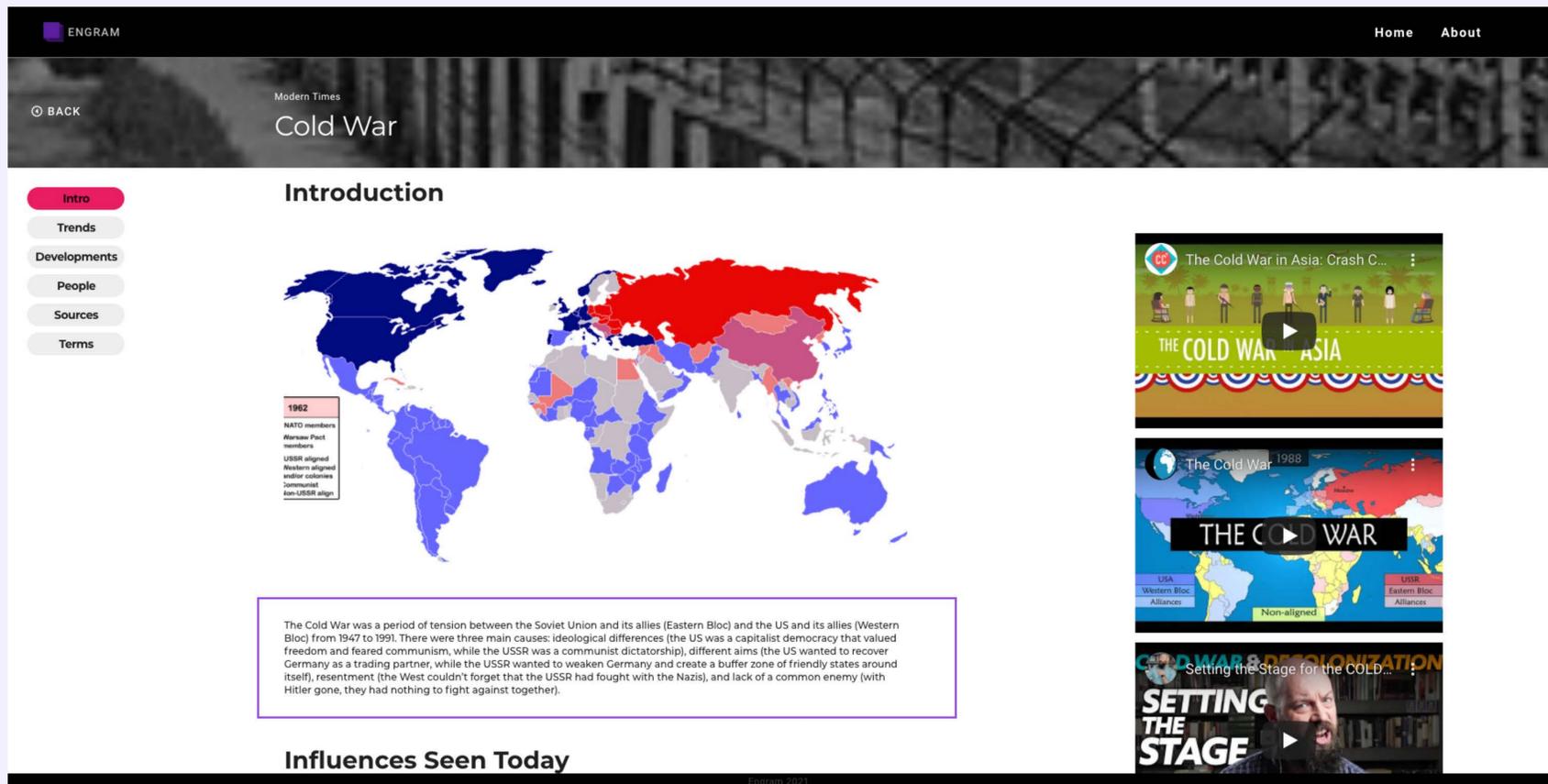


Figure 8. Layout Issue: "Introduction" page

Recommendation: In order to improve the clarity and accessibility of the content structure, we recommend adjusting the font size, reformatting the division of paragraphs, and updating the method of displaying images. These recommendations will help users see the content more intuitively and therefore promote understanding of the content.

Firstly, we recommend using subheadings and bullet points, which can help users quickly pinpoint information as well as improve overall comprehensibility. One participant who is a current AP World History teacher asserted, **“The more broken down, the better.”** Secondly, we recommend enlarging the font size to 18px to improve readability. Lastly, we recommend allowing the enlargement of relevant images on the website, enabling users to click to see a larger version if needed.

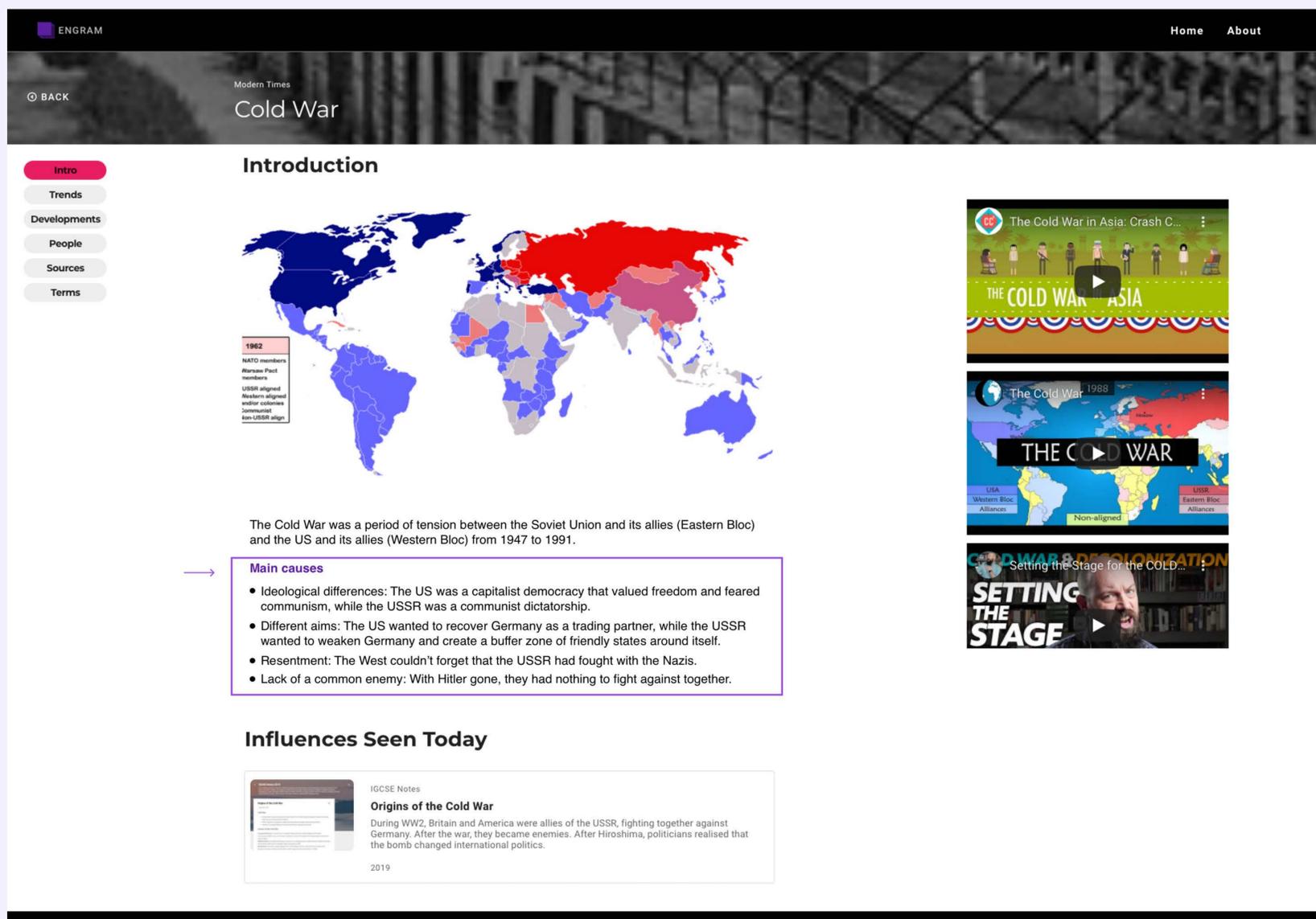


Figure 9. Layout Recommendations: "Introduction" page

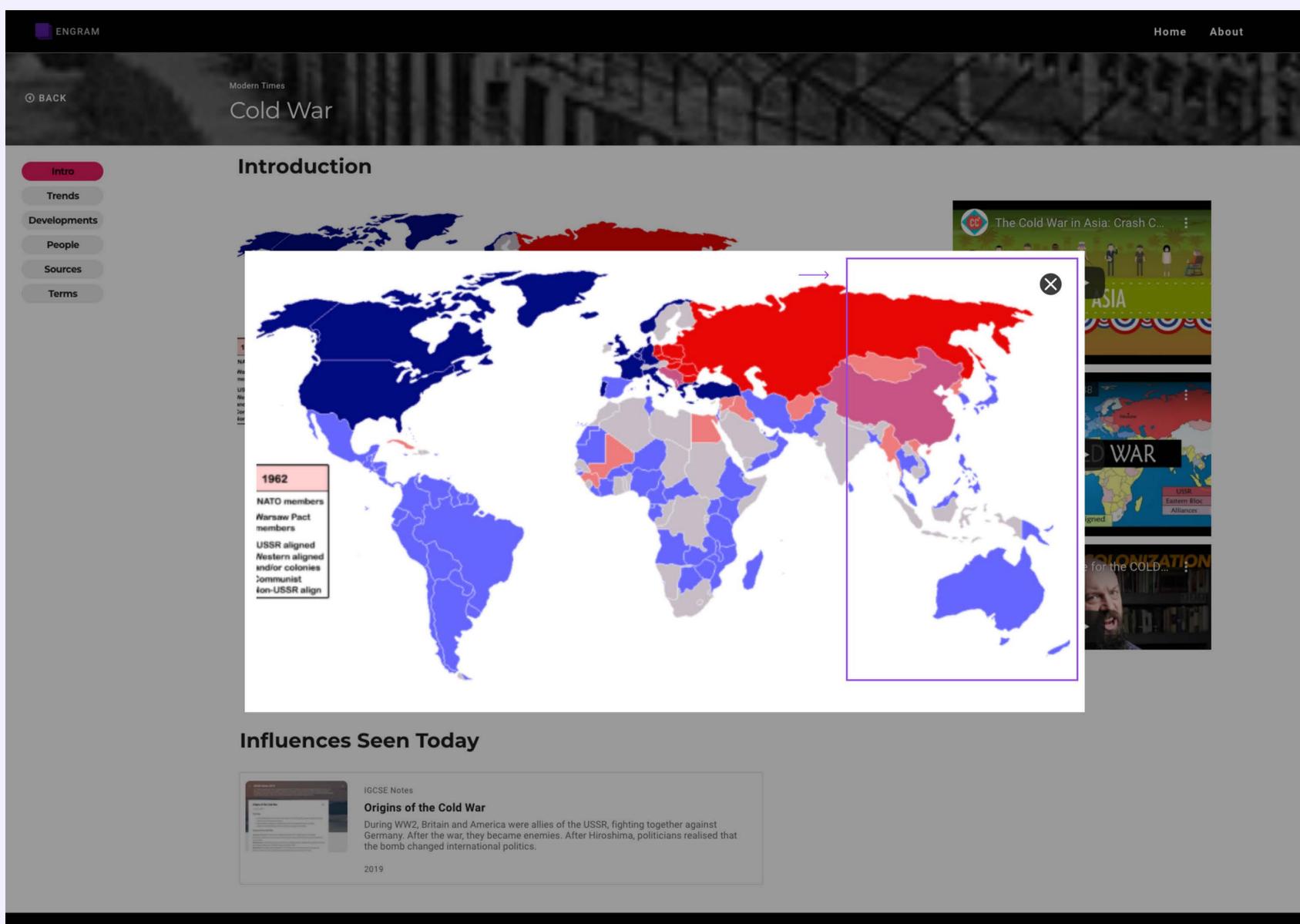


Figure 10. Layout recommendation: "Introduction" page

Recommendation 3: Interactivity

Issue description: The “Developments” page of each topic consists of a world map, a timeline bar, and a carousel. These features highlight important events that took place during each era. Each era includes the location, year, and context of the developments. The world map and the timeline bar received especially positive feedback. Participants who were current AP World History teachers felt that these features could help students retain important information by providing clear visuals. One participant suggested they be implemented into the main pages of the different topics.

However, seven participants struggled to interact with the “Developments” page as intended and therefore took a lot of time to complete Task 3, “Find what the Space Race is and what its impact was (According to Engram.)” This was because they encountered difficulty navigating the different content offered on the “Developments” page. In addition, the participants assumed that the map and the timeline bar had interactive features and repeatedly attempted to click on them in an effort to find more information. One participant commented, **“The areas of the map and the timeline seemed like clickable and interactive components”**. Five other participants made similar comments.

The reason for this difficulty seems to be the highlight effect that occurs when hovering over different regions of the world map. This effect gives a false indication of interactivity. More importantly, the actual method to switch between the different developments, the arrows which appear when hovering over the carousel, are not very discoverable. When the arrows are clicked, users can navigate between different events on the “Developments” page and only then does the world map and the timeline bar show the times and places coinciding with the event.

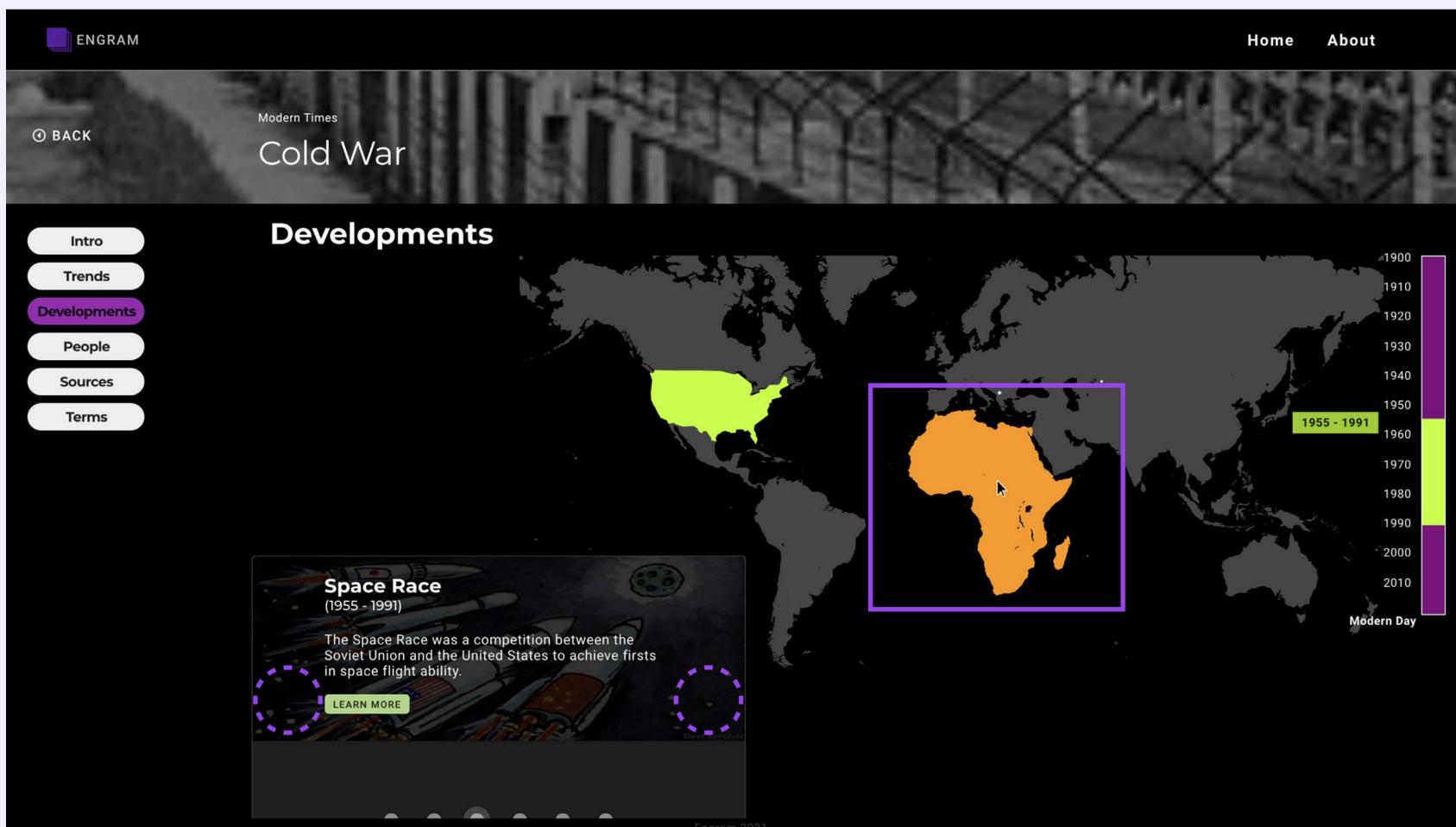


Figure 11. Interactivity issue: "Developments" page

Recommendation: In order to enhance the interactivity of the "Developments" page, evaluators recommend omitting misleading visual cues and enhancing interaction controller discoverability. Firstly, we recommend removing the highlight effect that occurs when hovering over different regions of the world map. The testing sessions suggested it causes misunderstanding as participants assumed it was clickable and became confused when clicking did not yield an effect. In addition, regions that are not covered in the "Developments page" are highlighted at times.

Secondly, we recommend that the arrows of the carousel appear on the screen at all times and not just when being hovered over. This would increase discoverability and be an indication to users that they can interact with this feature in this capacity. This was not immediately clear to many of the participants. Lastly, we recommend adding a textbox including simple instructions for how to properly use the “Developments” page.

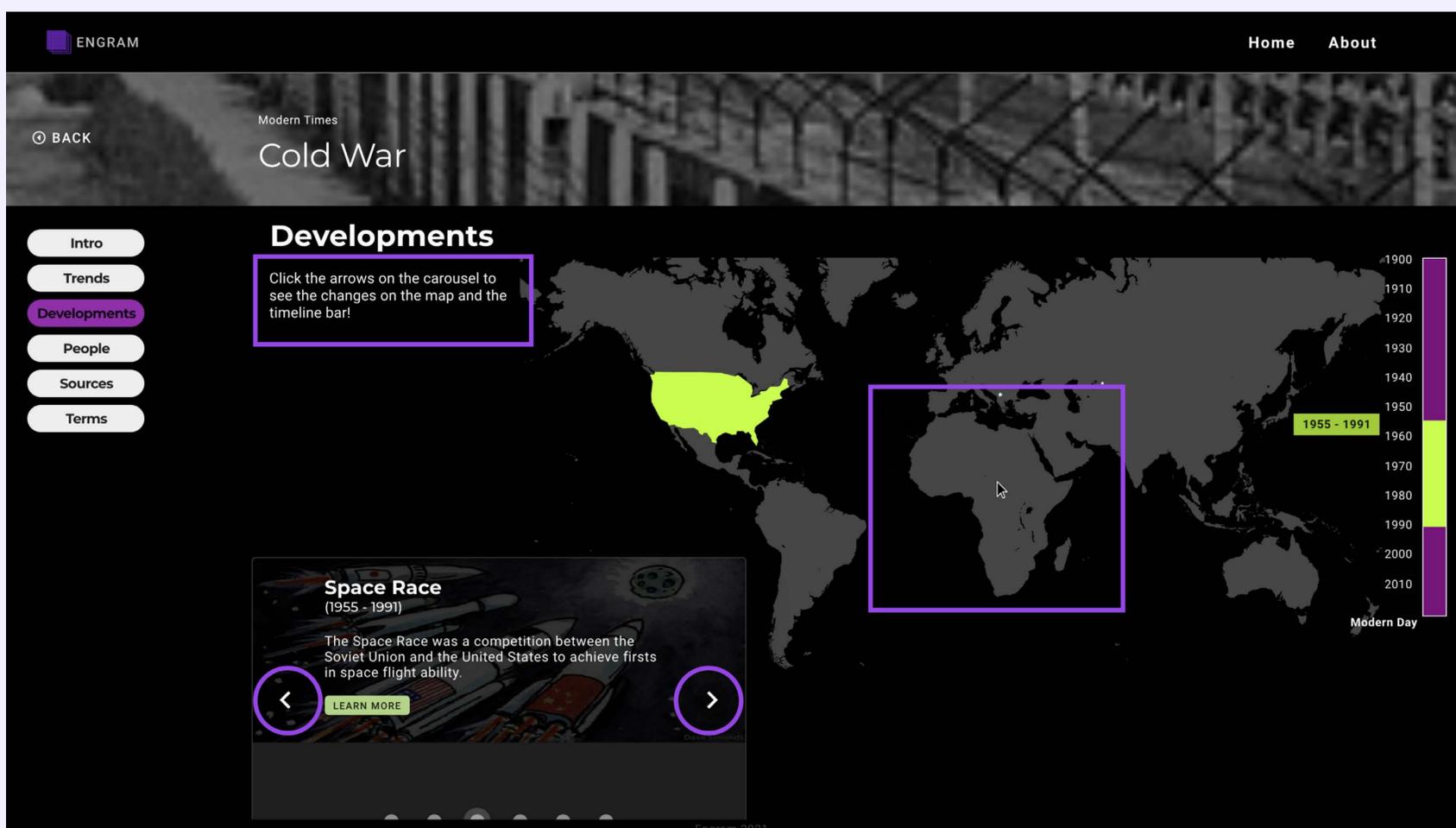


Figure 12. Interactivity recommendations: "Developments" page

Conclusion

Engram is a website aid for high school students in the AP World History course. Many of the participants of our study found Engram had a modern design and clear approach. Our report details three findings for the overall usability of the website and three recommendations to improve the overall usability of the website.

The first finding, which dealt with navigation, found that participants felt confused about the ordering of some sections. Our recommendations are to 1. Add the starting year and ending year of each historical event and arrange them in chronological order; 2. Arrange the content in alphabetical order on the "People" page and "Terms" page; and 3. Add a search function. The second finding, which dealt with layout, found that the unclear content structure led participants to spend unnecessary time looking at peripheral materials and that the current font size was potentially unfriendly to users with weaker eyesight. Our recommendations are to 1. Divide text material into smaller chunks; 2. Adjust the font of the text; and 3. Update the method of displaying images. The third finding, which dealt with interactivity, found that participants found difficulty in understanding the functions of the features on the "Developments" page. Our recommendations are to 1. Remove the highlight effect on the world map regions when hovering; 2. Show the arrows for the carousel onscreen at all times; and 3. Add a textbox with simple instructions guiding users on how to use the "Developments" page as intended.

Conclusion

There was a lot of positive feedback on different features of Engram. One participant said, “I would definitely want to use Engram when it is published” and even asked evaluators to let them know when it is launched. We are confident that, by reviewing the findings of our evaluators and implementing some of our recommendations, the overall usability of Engram can be improved, to center target users and attract prospective users.

References

Moran, K. and Pernice, K. (2020). Remote Moderated Usability Tests: How to Do Them. Nielsen Norman Group. Retrieved from <https://www.nngroup.com/articles/moderated-remote-usability-test/>

Nielsen, J. (1994). Severity Ratings for Usability Problems. Nielsen Norman Group. Retrieved from <https://www.nngroup.com/articles/how-to-rate-the-severity-of-usability-problems/?lm=how-to-conduct-a-heuristic-evaluation&pt=article>

Schade, A. (2015) Pilot Testing: Getting It Right (Before) the First. Nielsen Norman Group. Retrieved from <https://www.nngroup.com/articles/pilot-testing/>

Apple (2021). Human Interface Guidelines. Apple. Retrieved from <https://developer.apple.com/design/human-interface-guidelines/>

Table 1-1: Participant Demographics (Former Students)

ID	GENDER	AGE	OCCUPATION	STATE	TEST YEAR	TEST SCORE
S1	Male	27	Law School Student	MD	2010	3
S2	Female	22	Graduate Student	NY	2015	4
S3	Female	30	Naturopathic Doctor	NJ	2008	N/A
S4	Female	25	Librarian	NY	2011	5

Table 1-2: Participant Demographics (Current Teachers)

ID	GENDER	AGE	YEARS OF TEACHING APWH*	TEACHING MATERIAL	STATE
T1	Female	50	1 year	Textbook, Freemanpedia, YouTube	NC
T2	Male	40	9 years	Textbook, YouTube	NE
T3	Male	32	3 years	Textbook, YouTube	TX
T4	Male	36	3 years	Textbook, Books, YouTube	IL

*AP World History

Table 2: Cumulative List of Findings

#	PARTICIPANTS	PROBLEM DESCRIPTION	LOCATION	SEVERITY	QUOTES	RECOMMENDATIONS
1	S1, T1	Images are generic without any description.	Homepage	1	"I want more information about the pictures"	
2	T1, T2, S2, T4	Lack of content, Missing section from 1450-1750, Hard to align to curriculum.	Homepage	3	"It would be hard for [the students] to find the information they want."	
3	S2	Time period are too wide.	Homepage	2		Time period could be smaller.
4	T3	Label of link is unclear.	Introduction	2		
5	S2	Don't like videos, would use YouTube not Engram to watch videos.	Introduction	1		
6	T4	Need more detailed information.	Introduction	3		
7	S1, T1, T3, T4, S2, S4	Information not big enough. Maybe better if there was a breakup, bullet points, underlining.	Introduction	4	"My students are not going to read that." "Wish not to read the entire paragraph" "Some stuff is a massive chunk of reading" "Not user-friendly" "Unfriendly to people with weaker eyesight. Text should be bigger"	Bullet points "The more broken down the better."
8	S1	There isn't any overall list of the content.	Development	2		
9	T4, S2	Unclear relationship between graphic and information, Don't understand why some areas are highlighted.	Development	3		
10	T4, S1, S2, S4	Time frame and areas of the map seem like clickable, interactive components.	Development	3		
11	T2,T4	Arrows was not easy to find from the carousel.	Development	3		Cursors visibility should be increased.
12	T4, S2	Don't like the label 'Developments'.	Development	1		Maybe 'Timelines' would be better
13	T2,T4	Distracting - too many things to click on.	Development	1	"Distracting!" "Too many things to click on"	
14	S2	Don't like the way of playing videos.	People	2		Videos should be enlarged or open on a new page after clicking.
15	S2	Don't know what 'Sources' is about.	Source	1		
16	T1	No search bar.	Entire Website	4		
17	S1, T1, T2, T3, S2, S4, T4	General lack of logic behind ordering.	Entire Website	3	"Lost where I would be going" "In my mind, I don't connect JFK with the Cold War"	
18	S4, T4	Overall not very indepth. Wanted more perspectives, more information.	Entire Website	3		
19	T1, T4	Titles of the videos are missing.	Entire Website	3		"Cannot see full titles of videos - Would be better to put titles above videos."

Table 3: Post-Test Questionnaire Results

Q1. What frustrated you most about this website and what would you change?

Q2. What did you like about the website?

Q3. **For Former Students:** How likely is it that you would have used this website for the course on a scale of 0-10 and why? / **For Current Teachers:** How likely are you to recommend this website to your students on a scale of 0-10 and why?

P	Q1	Q2	Q3
S1	Maybe specify involved countries more prominently.	Liked repeated prominent inclusion of dates; Liked links to third party sources, e.g., YouTube;	10
S2	Organization of each time period page is different, some are ordered by event and some are listed by region. Feels like prior knowledge is needed to use the site; don't like the label 'Developments'. Maybe 'Timelines' would be better; don't know what 'Sources' is about;	Concise and useful; like the influences seen today, how it is relevant today;	0
S3	Didn't know where to find answer (Task 3). Maybe a search bar or second level menu can solve this problem; Provide additional information for each topic, not for memorizing but to increase understanding;	"Good way to order text material." "	10
S4	Overall not very indepth.	Good visual, very clean	2 "Only if my teacher ask me to use it"

Table 3: Post-Questionnaire Results

T1	need additional information about Geography; not in a chronological order;	using videos that most teachers would like (except for buzzfeed video "unsolved mystery~"; interesting. want to use it when published;	10
T2	"Developments" page is "confusing"; Cursors visibility should be increased; "Hard to align to curriculum" - "It would be hard for [the students] to find; No chronological order to "People".	Liked the embedded people; "My students like having the videos"; "Good information" and "good for background"	5
T3	"Some stuff is a massive chunk of reading' - "The more broken down the better."; "More for introduction than studying";	Liked the "People" page - Could be useful for biography projects; Liked timeline on "Developments"; Found "Terms" page helpful.	6
T4	loading was frustrating; lack of breaking down; size of the text too small	like the homepage breaking up the periods; like the timelines (but wish it was clickable); like the menu contents, helpful for navigate; Seems Trends is the most helpful section for students; like the simplicity of design.	7