

Technical Writing Class Afternoon Group #5  
Virginia Tech  
Blacksburg, VA 24060  
6 December 2024

Damian Salas  
Assistant Athletics Director, Digital & Internet Strategies  
Virginia Tech Athletics Department  
25 Beamer Way  
Blacksburg, VA 24060

Dear Virginia Tech Athletics Department:

Attached is a report titled “Recommendations for Improving the Readability and Usability of HokieSports.com: A Recommendation Report” regarding Hokie Sports webpage. It entails us discussing the readability, usability, and accessibility of the website, what makes up a website that has optimal design features and incorporating our knowledge and ideas into this project to help improve the quality of our chosen webpage.

Within this project we began by selecting a website, and through conducting primary and secondary research, came up with an analysis of possible recommendations we could make to improve your website's readability. We have used tools provided by our professor to make knowledgeable, educated and informed recommendations. The report includes visuals, tables, different document design elements, various classifications of research conducted in various formats and other useful information. Along with the explanation of our methods, findings and primary recommendation conclusion.

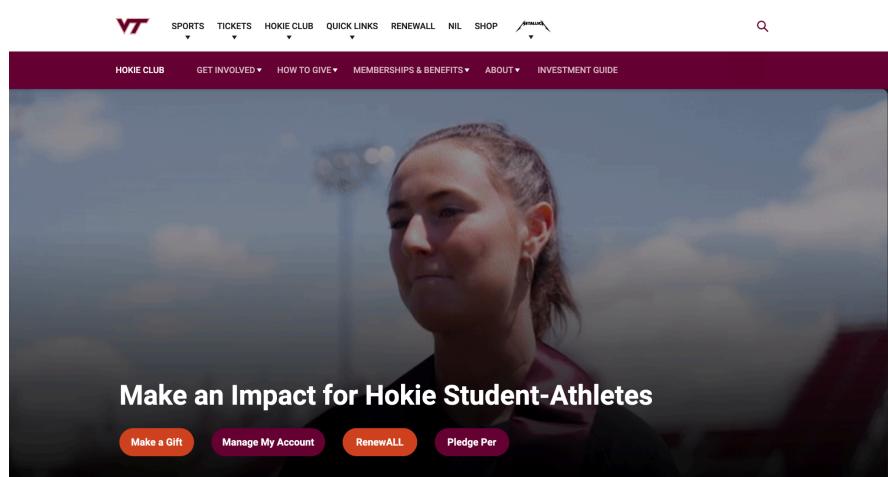
The report comes together very cohesively to help enable your understanding in what to do best for your website and its audience. Our findings concluded that the website has an overload of information, inconsistent design elements and a lack of organization in the set up of all the pages.

Our primary recommendation includes reducing the amount of information, grouping together topics to decrease the overload of hyperlinks, and incorporating design elements that will increase the website's readability and accessibility.

Thank you for considering our recommendations. We hope that our findings prove useful to Virginia Tech Athletics. If you need any further information please feel free to contact our group leader [removed]@vt.edu.

Sincerely,  
Student names removed for privacy

# **Recommendations for Improving the Readability and Usability of HokieSports.com: A Recommendation Report**



Prepared for:

Damian Salas  
Assistant Athletics Director, Digital & Internet Strategies  
Virginia Tech Athletics Department  
25 Beamer Way  
Blacksburg, VA 24060

Prepared by:

List of names of all students in the group removed

6 December 2024

# Abstract

“Recommendations for Improving the Readability and Usability of Hokiesports.com: A Recommendation Report”

Prepared by: Student Names Removed, Junior at Virginia Tech

Our report is targeted to supporting the Virginia Tech Athletic Department in preserving a web presence that honors the quality and pride of Hokie athletics. Virginia Polytechnic Institute and State University is a top school for sports, especially football, with Lane stadium averaging around 65,000 attendees per football game.<sup>1</sup> Just during the 2022-2023 academic year, the Athletic Department raised over \$129 million in revenue.<sup>2</sup> So, ensuring that its sports website is constantly updated and easy to navigate is essential for the thousands of students, staff, alumni and family that access it, but it is also essential for the athletic department to continue to see a rise in earnings since it is one of the top sources of revenue for the school. To conduct research, we ran various methods including an accessibility test, usability test, and personal website observations. Our findings supported the idea that the website has particularly low usability and readability levels, making it difficult for roughly ½ of users to easily access it. Our recommendations for improvement include the use of less text, text that is more clear and easy to read, fewer pages, and accommodating the website to withstand a high volume of traffic.

Keywords: Athletic Department, revenue, earnings, methods, accommodating, improvement, web

---

<sup>1</sup> *Roth report: December 2022* (no date) *Virginia Tech Athletics*. Available at: <https://hokiesports.com/news/2023/01/5/roth-report-december-2022> (Accessed: 24 October 2024).

<sup>2</sup> by our College Data Analytics Team      Unbiased Factual Guarantee (2024) *Virginia Tech athletics programs, College Factual*. Available at: <https://www.collegefactual.com/colleges/virginia-polytechnic-institute-and-state-university/student-life/sports/> (Accessed: 24 October 2024).

# Table of Contents

<b>Letter of Transmittal.....</b>	<b>1</b>
<b>Abstract.....</b>	<b>3</b>
<b>Executive Summary.....</b>	<b>5</b>
<b>Introduction.....</b>	<b>6</b>
<b>Methods.....</b>	<b>8</b>
Website Observations.....	8
Usability Test.....	9
Accessibility Test.....	9
<b>Results.....</b>	<b>10</b>
Usability Test Findings, Results, and Analysis.....	11
Accessibility Test Results and Analysis.....	12
<b>Conclusions.....</b>	<b>13</b>
<b>Recommendations.....</b>	<b>14</b>
Option 1: Refine Navigation Menus.....	14
Option 2: Enhance User Assistance Features (AI chatbot).....	14
<b>References.....</b>	<b>15</b>
<b>Appendix A: Website Observations.....</b>	<b>16</b>
<b>Appendix B: Usability Test.....</b>	<b>17</b>
<b>Appendix C: Accessibility Test.....</b>	<b>18</b>

# Figures and Tables

<b>Figure 1.1</b> Figure 1.1: Home page of HokieSports.com. This is what users will see when they open the link to the site.....	<b>6</b>
<b>Figure 1.2</b> Example of Website Navigation. This demonstrates how users navigate the site via the top menu.....	<b>7</b>
<b>Figure 1.3</b> Image of Ticket Central. This is accessed via the “Tickets” tab.....	<b>1</b>
<b>Table 1.1</b> Accessibility Test Results .....	<b>11</b>

## **Executive Summary**

Our goal as a team was to analyze the usability of the “HokieSports.com” website, a website that a Virginia Tech student would use. Professor Gardner asked us to use primary and secondary research as well as the extensive material learned throughout the semester to present our findings and propose thorough recommendations that would make the website more accessible for the user.

As of now, the usability and readability of the Hokie Sports website is lacking critical components. Many Virginia Tech students find it difficult to navigate the website and even perform basic tasks. The website is also not overly appealing to the reader, as it contains contrast errors and inconsistencies such as font size and color. In order to make the website more appealing, our team has made various assessments regarding critical improvements throughout the website.

To initiate this study, our team underwent a series of both secondary and primary research. Regarding our secondary research, our team focused on the research of the C.R.A.P principles and overall navigation for the website. Moreover, our group had three main forms of primary research. These forms included website observations, an extensive usability test, and an accessibility test.

Based on our research, we discovered that there were several areas throughout the website where the usability and readability could be vastly improved. After undertaking our personal website observations, it was obvious that the complexity of the navigation menu made it very difficult to interact with the website. For example, we asked five Virginia Tech undergraduate students to navigate through the website to find information for disability accessibility for a hypothetical family member. We found that all five students were unable to find any sufficient information regarding the disability accessibility. This was one of the major causes of concerns of our research findings. Furthermore, our accessibility test proved that the “NIL” web page on the site does not satisfy appropriate web accessibility standards overall. The video lacked an alternative transcript and relayed incorrect captions.

We recommend a number of different improvements to the website. The main improvements include less wording, hyperlinks, pages, and shorter videos throughout the entire website. Overall, we found that the website has too much information packed into many different sections. We found this abundance of information to be unnecessary and create a difficult navigation experience for the user.

# Introduction

In this report we will be providing recommendations we have gathered with thorough research and different methods to increase a specific website's readability. Through knowledge learned in our technical writing class we have learned how to maximize the use of a website's colors, font, text size, paragraph size, simple language and white space to optimize a website's readability.

Our study began by looking over different websites that could be relevant to Virginia Tech students or alumni. After thorough research and consideration and our own experiences we decided on the Hokie sports website due to our own struggles when navigating this site through our years of being students. It is also a website with a range of different services and information which needs to incorporate as much usability as possible. Especially considering its broad range of users which includes students, parents, alumni, local fans and faculty and staff.

To conduct our study and provide the best recommendations to improve the Hokie Sports website functionality, we were asked to conduct different kinds of research and read about all the different elements that make up the usability and readability of a website. Here is a list of different tasks we were asked to complete to gather our research and put together our recommendation report:

- Proposal for recommendation report
- Document design review
- Primary research using different kinds of tests/methods:
  - Usability tests
  - Personal observations
  - Accessibility tests
  - Design observations
- Secondary research on different sites covering these topics on document design:
  - How a Bottom-Up Design Approach Enhances Site Accessibility, Chunking, VA governance, EPA standards, Lists, Typography, White space, Graphics, Plain language and CRAP principles
- Progress report
- Research on visual aids

We found that Hokie Sports website is not optimally designed, there is an overload of information with insufficient navigation guidance. All the key information takes multiple steps to even get close to the page you are looking for, there is a lack of detailed headings and subheadings that could help with leading you to the information you are looking for. We

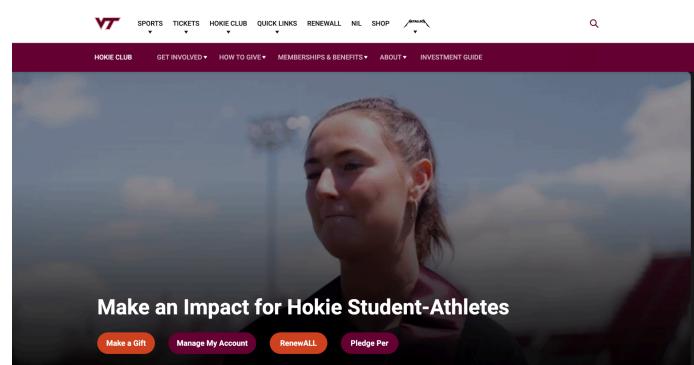


Figure 1.1: Home page of HokieSports.com. This is what users will see when they open the link to the site.

even look back to times where we have had to navigate this website ourselves to look for season tickets, lottery entries, singular tickets or just sports schedules and we all reflect on past struggles with finding all this information.

There is much room for improvement and our primary research tests which included website observation, usability test, and accessibility test all found very similar conclusions. All tests found that there was an overly complex navigation page, way too much information in certain places, inconsistent design elements and limited readability and accessibility elements were incorporated.

Our principal recommendation is for HokieSports to reduce the amount of words included in each page and section of their site and combine this with a decrease in the amounts of hyperlinks on their web page, and additionally incorporate the C.R.A.P design principles to decrease the difficulty in the navigation of their website. Our principal recommendation has to do with the fact that there is an overload of information provided in an inefficient way. The benefits of these recommendations include increased readability, accessibility, and user satisfaction which includes students, alumni and many other people; this will help increase their customer traffic as well.

The rest of our recommendation report includes details on the methods of our primary research, including details on our different types of tests conducted, followed by the results of these, conclusions and finally the primary recommendation we came up with from all of our work.

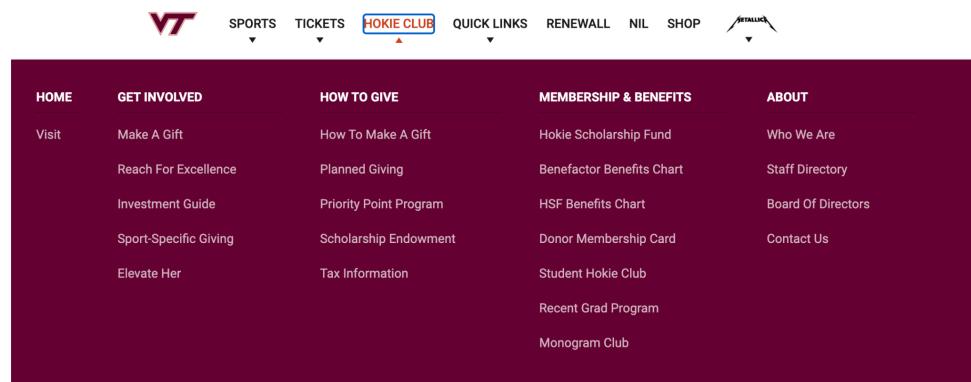


Figure 1.2: Example of Website Navigation. This demonstrates how users navigate the site via the top menu.

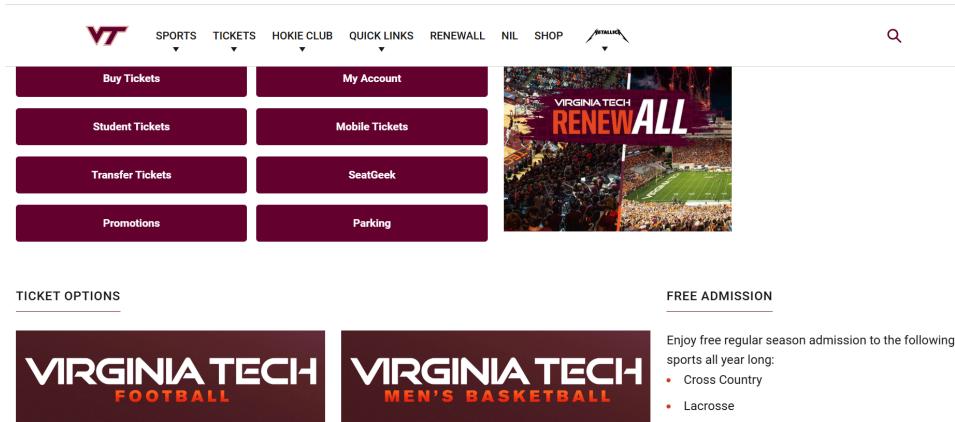


Figure 1.3: Image of Ticket Central. This is accessed via the "Tickets" tab

## **Methods**

Our group's collective goal was to apply technical writing knowledge and proper design principles to improve Virginia Tech's athletic website. We did this through proper research, observations, and tests. This desire to improve the website came from the fact that we are students of Virginia Tech. We all have first-person experience using the site. Succinctly put, our goal was to simply voice our opinions of the site and back our claims by integrating concepts learned from our class, in-conjunction with our secondary research.

Our research simply began with observation and secondary sources. By exploring various articles and applying concepts learned in class, we developed the skills to create, design, and edit our own well-structured, visually appealing writing. We learned simple concepts regarding font, white space, color, size...etc. All of which create efficient readability. Many of our group members, after comprehensive research of C.R.A.P principles, took to observing multiple aspects of the Hokiesports website, writing down various critiques and simple improvements. However, we decided that we needed to diversify our primary research by doing accessibility and usability tests. These tests help back or discredit any potential observatory claims

To perform a comprehensive analysis of the hokiesports website we went through three methods of primary research.

1. Website Observations
2. Usability Testing
3. Accessibility Testing

We further explain our research processes and findings below through discussion of our accessibility test, usability test, and various observation findings. The research for this report was split up among group members, with each member conducting both primary and secondary research. [Student names removed] all worked on finding personal observations regarding their specific portion of the website. These observations include first impressions and engaging questions that relate to the website. For Primary research, [Student name removed] underwent an accessibility test for his section of the website. This test involved using WebAIM's WAVE Web Accessibility Evaluation Tools and recording the discovered data. [Student name removed] conducted research by performing a usability test for the "Ticket" page on the website. This test gave us insight regarding the difficulty of completing basic tasks on the website.

### **Website Observations**

To develop recommendations for improving the usability of the HokieSports website, our group conducted a series of personal observations as part of our primary research plan. Over the past few weeks, many group members conducted extensive observations regarding the various aspects and sections of the HokieSports website. By doing this we were able to gain direct insights into how real users interact with the site and root out key issues. Some of the observation methods we employed included evaluating the

ease of navigation of the website, assessing the readability of content, and examining the visual appeal and consistency. This research approach allows us to capture authentic interaction of how one would typically navigate through the website's various sections. Through navigating the website first hand, taking note of personal observations, and identifying the struggles and frustrations users may experience, we were able to gather comprehensive data on the current state of the HokieSports website—which will be elaborated upon in the results section.

## **Usability Test**

As part of our evaluation for HokieSports.com, a usability test was conducted with 5 Virginia Tech students since they are the primary users of the site. The test involved the completion of three tasks regarding the tickets central page which is expected to be the page with the highest traffic volume. These tasks included finding tickets to a fall sports game, finding a help tool to ask about hypothetical technical difficulties when purchasing tickets, and navigating through and finding information regarding disability accessibility for a hypothetical family member. Each test was conducted in person, with a timer set to understand the length of time it took each user to complete each task. A video recording was also made to use as reference for understanding the steps the participants took to completing their tasks. This test focused on the measure of task completion time, error rate, and success.

## **Accessibility Test**

In addition to the website observations and usability test, our group also conducted a complete accessibility test for the “NIL” page on the Hokie Sports website. To begin the task, we used two websites: Web Accessibility for Designers infographic from WebAIM and WebAIM’s WAVE Web Accessibility Evaluation Tools. Both of these websites were recommended to us by Professor Gardner. Using the Web Accessibility for Designers infographic, we were able to use the Web Content Accessibility Guidelines (WCAG) checklist to compare the accessibility of the Hokie Sports “NIL” web page to specific criteria WebAIM lays out on their website. This in-depth checklist is ten pages long and is based around four major principles. These principles are perceivable, operable, understandable, and robust. Each of these major pillars have their own guidelines that allowed our group to conduct extensive research regarding the accessibility of the page. After the checklist was completed, we then used WebAIM’s WAVE Web Accessibility Evaluation Tools to further evaluate the accessibility. This test gave us an overall summary relating to the structural elements, features, alerts, and contrast errors of the “NIL” web page.

# Results

In this section, we will focus on the results based on the outcomes of our research. Throughout the section, we include the most critical and relevant data for each task performed by our team.

Through the research we conducted, we found that the Hokie Sports website is difficult to navigate and could benefit from significant improvements. A usability test that was conducted tasked five Virginia Tech students to navigate the website and complete three common tasks. These tasks included finding tickets to a football game, finding a help tool, and finding information on disability accessibility. Zero of the participants were able to complete every task; two participants were able to complete the first two tasks and the other three only completed one task. None of the participants were able to find information on the disability accessibility task, which is concerning. The results of this test illustrate the dire need for changes to the website's functionality.

## Analysis of Website

The personal observations conducted on the HokieSports website revealed several areas where the usability and readability can be improved. These issues impact the overall user experience and demonstrate clear opportunities for improvement for Virginia Tech Athletics.

- Complex Navigation Menu: The first observation noted was the complexity of the main navigation menu. While the interface is comprehensive, it could be seen as overwhelming and cluttered for some users, making it difficult to quickly find what they are looking for. Also, the amount of categories shown when hovering over the main sections are confusing and could be consolidated to make for a less complicated navigation experience.
- Design Inconsistency: When navigating through the website, we noticed that there were inconsistencies in the use of fonts, colors, headings, and image sizes across different pages. There are a variety of font uses and color ways that make some pages look cluttered and not visually appealing.
- Cluttered Pages: Several pages of the HokieSports website, including the home page, appear to be very cluttered and could be overwhelming at times. The website attempts to present an abundance of information in such a compact space that makes it difficult to follow.
- Readability Issues: Several pages, such as player profiles, contained long paragraphs and wordy sections that should be broken down by bullet points or numbered lists. The lack of bullet points in this section makes it difficult for readers to follow. Refer to appendix A for an example.

Through our research of website observations we were able to identify several areas where usability and readability could be improved. The navigation menu was found to be confusing, visual design elements were inconsistent, and the layout was cluttered and overwhelming. These findings emphasize the need for website improvements in order to enhance the site's user experience.

## Usability Test Findings, Results, and Analysis

Upon completing the usability test, the results ultimately supported that most users find difficulty in navigating the website. The following table depicts the results gathered from the 5 participants. It includes information on steps taken, success, and time for each task.

	Task 1	Task 2	Task 3
<u>User 1</u>	<ul style="list-style-type: none"> <li>- <b>Tickets -&gt; Football</b> and scrolled through for 14 seconds until finding next link</li> <li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 2 Seats</b> they were then able to scroll through seats easily and view sections 1:30 min total (<b>Success</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Scrolled</b> for 20 seconds</li> <li>- <b>Search -&gt; “help”</b> 20 sec</li> <li>- <b>Tickets-&gt; Ticket Central</b> 1:00 min (<b>fail</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Football-&gt; Virtual Ticket Assistant</b> 2:00 min</li> <li>- <b>Tickets-&gt; Premium Seating -&gt; Scroll</b> 2:30 min (<b>fail</b>)</li> </ul>
<u>User 2</u>	<ul style="list-style-type: none"> <li>- <b>Tickets -&gt; Football-&gt; Student Tickets</b> 30 sec</li> <li>- <b>Football season ticket info-&gt; Tickets</b> 20 sec</li> <li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 5 seats</b> 1:15 min (<b>success</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Football-&gt; Virtual Ticket Assistant</b> 1:00 min (<b>success</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Premium Seating -&gt; Scroll</b> 1:40 min (<b>fail</b>)</li> </ul>
<u>User 3</u>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Single-Game Tickets -&gt; Clemson -&gt; 1 seat</b> they were then able to scroll through seats easily and view sections 1:50 min total (<b>success</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Scrolled -&gt; Ticket Central</b> 1:00 min (<b>fail</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Premium Seating -&gt; Scroll</b> 2:30 min (<b>fail</b>)</li> </ul>
<u>User 4</u>	<ul style="list-style-type: none"> <li>- <b>Tickets -&gt; Football</b></li> <li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 2 Seats</b> they were then able to scroll through seats easily and view sections 1:45 min total (<b>success</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Ticket Office Location, Hours, Operations</b> 30 sec (<b>success</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Football-&gt; Search -&gt; “disability”</b> 1:30 min (<b>fail</b>)</li> </ul>
<u>User 5</u>	<ul style="list-style-type: none"> <li>- <b>Tickets -&gt; Football</b></li> <li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 4 Seats</b> 1:30 min (<b>success</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Search -&gt; “help”</b> 45 sec (<b>fail</b>)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Tickets-&gt; Football-&gt; Virtual Ticket Assistant</b> 45 sec (<b>fail</b>)</li> </ul>

Table 1.1. Accessibility Test Results

Through the completion of the usability test, it is clear that the design of the website is difficult to navigate, with 0/5 participants being able to complete every task, % completing  $\frac{2}{3}$  tasks and % participants completing  $\frac{1}{3}$  tasks. So, the majority of

participants were only able to complete one task. This may also be due to the fact that I am not sure if the website even has some of the information that the participants were looking for. This is alarming because they were asked to complete common tasks, so this is a sign that the website can use significant improvements.

## Accessibility Test Results and Analysis

After executing the test using the Web Accessibility for Designers infographic, we determined that the “NIL” website did not yield sufficient results. Using a breakdown of the 4 major principles, we can conclude that the website’s accessibility is not up to proper standards.

- **Principle 1 - Perceivable:** Synchronized captions were provided for the video on the page, however, the captions were not 100% accurate and were misleading to the reader. Furthermore, there was no media alternative or descriptive transcript provided for the pre-recorded media.
- **Principle 2 - Operable:** Although the animations on the page are not longer than 5 seconds, they are unable to be paused, stopped, or hidden by the user. This causes an unnecessary distraction for the user when attempting to navigate the web page. On the other hand, the “NIL” page does include a descriptive and informative page title.
- **Principle 3 - Understandable:** When importing information into the “Stay Connected” section on the page, the user is not faced with a sudden change in the page or a pop-up window. The user is able to input the information without any interruptions. Additionally, navigation links on the site do not change order when revisiting the web page after being away for a period of time.
- **Principle 4 - Robust:** For the majority of the criteria, the markup is used in a way that facilitates accessibility. ARIA is used efficiently throughout the website to enhance accessibility.

Using WebAIM’s WAVE Web Accessibility Evaluation Tools recommended by Professor Gardner, we discovered that there is redundant alternative text throughout the web page as well as a slight contrast error. However, Accessible Rich Internet Applications are used effectively to enhance the overall content and interface of the web page.

# Conclusions

In this section, we present our conclusions based on our research related to the readability and usability of the Hokie Sports website.

## Website Observations

The website's observations identified a number of crucial places where readability and usability might be improved to greatly enhance the user experience. One of the main obstacles was the navigation menus complexity, which made it difficult for users to locate information fast because there were so many categories and choices. The site's visual appeal and coherence were further diminished by design flaws such as inconsistent fonts, colors, and image sizes. Additionally, readability and information processing were negatively affected by the disorganized arrangement of multiple pages and the absence of clear formatting, such as bullet points for lengthy parts. These results emphasize how crucial it is to streamline navigation, standardize design elements, and rearrange content to guarantee a more user-friendly, aesthetically pleasing, and functional website.

## Usability Tests

The usability test we ran indicated that participants struggled to finish basic tasks, highlighting the need of an interface that is generally simple to use overall. Only a small percentage of participants were able to do even one task, and none of them were able to finish all of the activities that were given to them. This suggests that, especially for simple tasks like finding ticket information or using virtual assistance, the website's layout and design are not clear or easy to use. The issues that need significant improvement include ineffective methods for locating important information and unclear routes to particular sections.

## Accessibility Tests

Based on our assessment utilizing WebAIM's WAVE Web accessibility evaluation tools (WebAIM) and the Web Accessibility for Designers infographic (WebAIM), we have determined that the "NIL" website does not satisfy appropriate web accessibility standards overall. A number of significant problems still exist even if the website has several good aspects, such as the efficient use of Accessible Rich Internet Applications (ARIA) (W3C), Informational page names, and reliable navigation. The site's perceivability is weakened by the synced captions for video content, which are imprecise and best lacking detailed transcripts (WebAIM). Furthermore, the inability to pause or hide animations reduces the operability and introduces needless distractions.

Sight contrast problems and redundant alternative text significantly reduce the site's accessibility.

## Recommendations

Through both primary and secondary research, we were able to gather information regarding the readability and usability of HokieSports.com. After investigating the implications of the design of the website, we can confidently recommend multiple improvements. Such improvements include the following:

- Less wording
- Less hyperlinks
- Less pages
- Shorter video length
- An easy to access chat box to answer a variety of questions
- Addition of an FAQ page

The primary issue with the website is that it contains too much information that is presented in a confusing manner, which is made up of the 6 recommendations listed above. To make the improvement more tangible, we will discuss 2 major options for website improvement.

### Option 1: Refine Navigation Menus

Many issues within the website arose due to unclear and overwhelming information. We highly recommend implementing a menu that is more intuitive in structure and clear in labeling. Categories should contain less hyperlinks, and instead include longer pages that include tables of contents to assist with navigation. In addition, the dark maroon color scheme in addition to many visual elements like pictures and pop-ups, makes the website dysfunctional. The website should instead implement lighter colors, less words, and high contrast between text and background. Doing so should refine accessibility and reduce the time it takes to complete tasks.

### Option 2: Enhance User Assistance Features (AI chatbot)

Another recommendation that we highly recommend is the enhancement of user assistance features, since this can encompass and help eliminate other smaller issues as well. One idea we had is to implement a chat box that stays in the corner of the website throughout all pages a user might access. Also, enhancing the AI to understand more detailed information and therefore provide answers that are specific and easy to understand will greatly improve the user experience.

## References

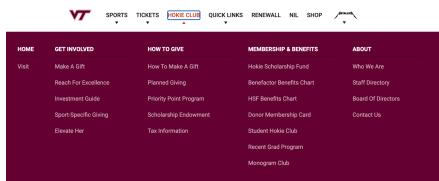
- Department of Veterans Affairs (mmr). “Content Writing and Design.” *VA Web Governance*, 11 Jan. 2023,  
<https://digital.va.gov/web-governance/building-and-managing-va-websites/content-writing-and-design/>.
- Document Design: CRAP Principles:*  *Technical Writing, Fall 2023.*  
[http://canvas.vt.edu/courses/177045/pages/document-design-crap-principles?module\\_item\\_id=2493422](http://canvas.vt.edu/courses/177045/pages/document-design-crap-principles?module_item_id=2493422). Accessed 22 Nov. 2024.
- Document Design: More Design Principles:*  *Technical Writing, Fall 2024.*  
<http://canvas.vt.edu/courses/196807/pages/document-design-more-design-principles#chunking>. Accessed 22 Nov. 2024.
- Gardner, Traci. *Document Design: More Design Principles:*  *Technical Writing, Fall 2024.*  
<http://canvas.vt.edu/courses/196807/pages/document-design-more-design-principles#typography>. Accessed 22 Nov. 2024.
- Last, Suzan, et al. “Integrating Visuals.” *Pressbooks*, 12 Jan. 2022,  
<http://pressbooks.library.tamu.edu/howdyorhello/chapter/integrating-visuals/>.
- Magazine, Author Eleanor Hecks —. Smashing. “How A Bottom-Up Design Approach Enhances Site Accessibility — Smashing Magazine.” *Smashing Magazine*, 4 Oct. 2024,  
<http://www.smashingmagazine.com/2024/10/how-bottom-up-design-approach-enhances-site-accessibility>.
- Plainlanguage.Gov. <http://Plainlanguage.gov>. Accessed 22 Nov. 2024.
- Rocky Mountain College. “The Impact of Typography in Effective Graphic Design | RMCAD.” *RMCAD*, July 2024,  
[www.rmcad.edu/blog/the-impact-of-typography-in-effective-graphic-design/](http://www.rmcad.edu/blog/the-impact-of-typography-in-effective-graphic-design/).
- “Wave Report.” WAVE Web Accessibility Evaluation Tool,  
[wave.webaim.org/report#/https://hokiesports.com/virginia-tech-nil](http://wave.webaim.org/report#/https://hokiesports.com/virginia-tech-nil). Accessed 6 Dec. 2024.
- “WebAIM’s WCAG 2 Checklist.” Web Accessibility for Designers Infographic,  
[webaim.org/standards/wcag/WCAG2Checklist.pdf](http://webaim.org/standards/wcag/WCAG2Checklist.pdf). Accessed 6 Dec. 2024.
- “---.” W3C, <https://www.w3.org/standards/types/#REC>. Accessed 6 Dec. 2024

# Appendix A: Website Observations



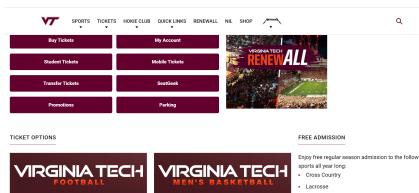
"Figure 1: Home Page of Hokiesports.com." Hokie Sports.

[https://hokiesports.com/?utm\\_source=google&utm\\_medium=paidsearch&utm\\_campaign=evergreen&gad\\_source=1&gclid=Cj0KCQiA3sq6BhD2ARIsAJ8MRwU8owt\\_IHyiEv4NJ5Yr4r68FjINRA3XEE6cozrtmn6fyBp4fNd4kkaAuKEEALw\\_wcB](https://hokiesports.com/?utm_source=google&utm_medium=paidsearch&utm_campaign=evergreen&gad_source=1&gclid=Cj0KCQiA3sq6BhD2ARIsAJ8MRwU8owt_IHyiEv4NJ5Yr4r68FjINRA3XEE6cozrtmn6fyBp4fNd4kkaAuKEEALw_wcB). Accessed 06 Dec. 2024.



"Figure 2: Example of Website Navigation." Hokie Sports.

[https://hokiesports.com/?utm\\_source=google&utm\\_medium=paidsearch&utm\\_campaign=evergreen&gad\\_source=1&gclid=Cj0KCQiA3sq6BhD2ARIsAJ8MRwU8owt\\_IHyiEv4NJ5Yr4r68FjINRA3XEE6cozrtmn6fyBp4fNd4kkaAuKEEALw\\_wcB](https://hokiesports.com/?utm_source=google&utm_medium=paidsearch&utm_campaign=evergreen&gad_source=1&gclid=Cj0KCQiA3sq6BhD2ARIsAJ8MRwU8owt_IHyiEv4NJ5Yr4r68FjINRA3XEE6cozrtmn6fyBp4fNd4kkaAuKEEALw_wcB). Accessed 06 Dec. 2024.



"Figure 3: Image of Ticket Central. Hokie Sports. <https://hokiesports.com/hokietickets>. Accessed 06 Dec. 2024.

## Appendix B: Usability Test

### Directions

Five VT undergraduate students were asked to complete the following tasks as apart of our usability test:

1. Find tickets to a fall sports game
2. Find a help tool to ask about experiencing hypothetical technical errors when buying tickets (FAQ, Chatbot etc.)
3. Navigate through to find info for disability accessibility for a hypothetical family member

### Results

#### User 1:

Task 1	<ul style="list-style-type: none"><li>- <b>Tickets -&gt; Football</b> and scrolled through for 14 seconds until finding next link</li><li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 2 Seats</b> they were then able to scroll through seats easily and view sections 1:30 min total (<b>Success</b>)</li></ul>
Task 2	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Scrolled</b> for 20 seconds</li><li>- <b>Search -&gt; "help"</b> 20 sec</li><li>- <b>Tickets-&gt; Ticket Central</b> 1:00 min (<b>fail</b>)</li></ul>
Task 3	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Football-&gt; Virtual Ticket Assistant</b> 2:00 min</li><li>- <b>Tickets-&gt; Premium Seating -&gt; Scroll</b> 2:30 min (<b>fail</b>)</li></ul>

#### User 2:

Task 1	<ul style="list-style-type: none"><li>- <b>Tickets -&gt; Football-&gt; Student Tickets</b> 30 sec</li><li>- <b>Football season ticket info-&gt; Tickets</b> 20 sec</li><li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 5 seats</b> 1:15 min (<b>success</b>)</li></ul>
Task 2	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Football-&gt; Virtual Ticket Assistant</b> 1:00 min (<b>success</b>)</li></ul>
Task 3	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Premium Seating -&gt; Scroll</b> 2:00 min (<b>fail</b>)</li></ul>

#### User 3:

Task 1	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Single-Game Tickets -&gt; Clemson -&gt; 1 seat</b> they were then able to scroll through seats easily and view sections 1:50 min total (<b>success</b>)</li></ul>
Task 2	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Scrolled -&gt; Ticket Central</b> 1:00 min (<b>fail</b>)</li></ul>
Task 3	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Premium Seating -&gt; Scroll</b> 2:30 min (<b>fail</b>)</li></ul>

#### User 4:

Task 1	<ul style="list-style-type: none"><li>- <b>Tickets -&gt; Football</b></li><li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 2 Seats</b> they were then able to scroll through seats easily and view sections 1:45 min total (<b>success</b>)</li></ul>
Task 2	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Ticket Office Location, Hours, Operations</b> 30 sec (<b>success</b>)</li></ul>
Task 3	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Football-&gt; Search -&gt; "disability"</b> 1:30 min (<b>fail</b>)</li></ul>

#### User 5:

Task 1	<ul style="list-style-type: none"><li>- <b>Tickets -&gt; Football</b></li><li>- <b>Single-Game Tickets -&gt; Clemson -&gt; 4 Seats</b> 1:30 min (<b>success</b>)</li></ul>
Task 2	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Search -&gt; "help"</b> 45 sec (<b>fail</b>)</li></ul>
Task 3	<ul style="list-style-type: none"><li>- <b>Tickets-&gt; Football-&gt; Virtual Ticket Assistant</b> 45 sec (<b>fail</b>)</li></ul>

# Appendix C: Accessibility Test

An accessibility test was conducted on the NIL page of the HokieSports website.

## Video Accessibility Test Results:

### Non-Text Content

Images, image buttons, and image map hotspots have appropriate, equivalent alternative text.

Form buttons have a descriptive value.

Inputs have associated accessible names.

Embedded multimedia is identified via accessible text.



### Captions (Video)

Synchronized captions are provided for non-live video (YouTube videos, etc.).

- Captions are *not* 100% accurate



### Media Alternative

A descriptive transcript is provided for pre-recorded media that has a video track. For optimal accessibility, WebAIM strongly recommends transcripts for all multimedia.

- No transcript is provided for the pre-recorded media

### Use of Color

Color is not used as the sole method of conveying content or distinguishing visual elements.

### Contrast

Text and images of text have a contrast ratio of at least 7:1.

- Contrast ratio is 8.59:1 (Passes WCAG AA and WCAG AAA)



### Images of Text

If the same visual presentation can be made using text alone, an image is not used to present that text.



### Visual Presentation

Blocks of text over one sentence in length:

Are no more than 80 characters wide.

Are NOT fully justified (aligned to both the left and the right margins).

Have adequate line spacing (at least 1/2 the height of the text) and paragraph spacing (1.5 times line spacing).

- 1.15 times line spacing is used

Have defined or inherited foreground and background colors. ✓

Do NOT require horizontal scrolling when the text size is doubled. ✓

### Images of Text

Text is used within an image only for decoration (the image does not convey content)  
OR when the information cannot be presented with text alone. ✗

### Keyboard

All page functionality is available using the keyboard, unless the functionality cannot be accomplished in any known way using a keyboard (e.g., free hand drawing). ✓

Page-specified shortcut keys and access keys (accesskey should typically be avoided) do not conflict with existing browser and screen reader shortcuts. ✗

- New links do not open up a new tab in the same browser

### Pause, Stop, Hide

Automatically moving, blinking, or scrolling content (such as carousels, marquees, or animations) that lasts longer than 5 seconds can be paused, stopped, or hidden by the user. ✓

- There are no animations that last longer than 5 seconds. However, the 3 second animation can not be paused, stopped, or hidden.

### Page Title

The web page has a descriptive and informative page title. ✓



Welcome to the official hub for NIL at Virginia Tech.

When the first notes of Enter Sandman come through the speakers, the ground in Blacksburg literally shakes as Hokie fans jump up and down in anticipation of another Tech Triumph.

### On Input

When a user inputs information or interacts with a control, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user unless the user is informed of the change ahead of time. ✓

### Consistent Navigation

Navigation links that are repeated on web pages do not change order when navigating through the site. ✓

### Name, Role, and Value

Markup is used in a way that facilitates accessibility. This includes following the HTML specifications and using forms, input labels, frame titles, etc. ✓