A User-Centric Approach to Enhance Usability in Academic Websites -CADVC Website Redesign

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Abstract

In our digital-centric world, having a robust online presence is vital for academic institutions, especially for spaces like art galleries. This research paper documents an initiative aimed to elevate the digital experience of the University of Maryland, Baltimore County's (UMBC) Center for Art, Design, and Visual Culture (CADVC) website. This website promotes modern and contemporary art, design, and visual culture through publications, events, exhibitions, and educational programs. Currently, the CADVC website suffers from a lack of engagement and usability as the website's existing design restricts any desired functionality or feature. The main objective of this project is to focus on improving the functionality, aesthetics, and usability of the website by adopting a usercentered approach. Additionally, this participatory design project prioritizes stakeholder involvement throughout the project starting with the discussion of evaluations of the current website and requirements for the redesign. The CADVC team's vision for the website was inspired by analyzing a few university art gallery websites, including Yale, Harvard, UC Berkeley, and UT Austin Visual Arts Center. Initial findings of the study revealed discoverability issues, navigation challenges, and concerns about the outdated design of the current CADVC website through meetings, surveys, and brainstorming sessions. Further exploration into enhancing usability resulted in the recommendation to utilize an alternative platform for the website as the existing UMBC template had many constraints. Hence, Prototypes and Comparative Analyses were made to make a final decision on which platform to use. Finally, two prototypes of the publications and giving page were developed with usability and functionality as key requirements, and many changes were made to the giving page of the existing website making the pages more user-friendly and efficient. Although redesigning the whole website was not possible within the given timeframe, this project lays the groundwork for ongoing CADVC website redesign, emphasizing user-centric principles, contemporary design, and usability, with the ultimate vision of transforming the website into a visually appealing, user-friendly, and informative digital space.

CSS CONCEPTS

Human-centered computing • User centered design • Participatory-Design • Website Redesign

KEYWORDS

University Websites, User Research, Usability Evaluation, Website Evaluation, Prototyping, Website Redesign, Art and Culture, Participatory Design.

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1 INTRODUCTION AND MOTIVATION

The Center for Art Design and Visual Culture (CADVC) of University of Maryland Baltimore County was founded in 1990. It is a hub for research, exhibition, publication, scholarship, and experimental engagements. The CADVC aims to craft a gallery space and a compelling online space. The current CADVC website [1] may need to be more efficient in offering a filter for navigating publications, elevating the visibility of event and exhibition information on the landing page, and other stakeholder requirements, like a dedicated giving page on the website for the donors with the relevant information.

From this project, CADVC wants a visually captivating and user-friendly website that will engage visitors by showcasing and providing donation information, exhibitions, events, educational programs, and publications. CADVC shared the stakeholder's requirement through a document that discussed their need for a fresh design for a new website/page template by including three main pages: a landing page, a giving page, and a publications page and their functionality with a secure system for financial transactions. They also shared detailed rubrics based on these pages which talked about their needs in detail by stating the problems found with the website. The CADVC team wanted to approach this project in three stages; creating rubrics to understand the need for new web design, evaluating rubrics to find out whether the requirements are feasible, and finding ways to implement the changes on a new design/development platform and possibly implementing them.

The users and stakeholders of this website were identified during the research process as UMBC students, professors, individuals interested in art and gallery publications, general visitors, potential attendees of exhibitions, art and book enthusiasts, researchers, potential donors, supporters, gallery staff, artists, event organizers, potential sponsors, publications department, and potential collaborators. Since the majority of those on this website affect the people involved in art or culture, the project is participatory in nature because it falls inside this domain. The center's commitment to art and culture enriches the lives of its visitors, students, and the art community.

The goal was to analyze the payment methods' gateway techniques and investigate various suggested and similar websites in accordance with the requirements and needs identified during the rubric's evaluation. This was done to gather information and reasoning to identify and resolve issues, incorporate necessary improvements, and provide workable designs.

The aim was to deliver workable design prototypes and potential payment gateway solutions that can be effectively integrated with the functionality and design system of the website. The project's goal was to apply participatory design techniques to improve usability, user happiness, and overall user experience.

This project was initiated with a dedication to community impact, representing a real-world initiative and offering hands-on experience in participatory design. In addition, investigating the Art/Culture discipline of participatory design served as an additional motivation. The thought was also to have a real-time design case study which would add value to the design portfolio. In the portfolio, it is a conscious effort to highlight actual, useful, participatory design

experience. Choosing to work on a project that would improve teamwork abilities and give us a better grasp of managing a real-time design project. This experience highlights the capacity to balance various points of view, ideas, and expertise beyond individual design skills. With this project, we're using our design abilities and skills. The project is a dynamic, real-time journey that reflects the developing nature of design processes rather than merely an academic exercise.

In terms of participatory design, learning how to actively include people and how crucial it is to offer a wellrounded solution that considers the demands of both clients and consumers was anticipated. Conducting research, refining prototypes, cultivating empathy, communicating openly, and reflecting were critical as well. Another expectation was to involve and focus on the end users, clients, and pertinent stakeholders to collect feedback by administering the surveys to gain such skills. A user-centered design was utilized using participatory design concepts that incorporate cooperative input from all parties involved.

Following a search into the field and the workings of participatory design, the project's potential benefits include improved user empathy, effective interaction, satisfaction insights, the ability to identify user input patterns, alignment with various stakeholder perspectives, and iterative design refinement. These advantages promote a usercentered viewpoint that guides the project toward success and enhances one's capacity to learn more about the workings of participatory design as a practitioner.

2 RELATED WORKS

This paper is inspired by existing research and design works that explored website redesigning with usability and better functionality. The insights from these websites and papers have been helpful for this project in terms of exploration of new design trends and guidelines for a better online user experience.

2.1 Design Trends and User Interface

While starting this project, the CADVC team had a vision for this website and gathered inspirations from some university art gallery websites like Yale [2], Harvard [3], University of California Berkeley [4], University of Texas at Austin [5], and Kunstmatrix [22]. Each has its strengths that can be used as inspiration for this paper and weaknesses that need improvement. Yale [2] suffers with a lack of intuitive navigation and inconsistent font sizes on its home page but shines with a well-organized and effective publication page. The publication page has a lot of features and filters as seen in Fig 1 which makes navigation and information retrieval much easier. Since the current CADVC website does not have a proper filter section to categorize the publications, it creates challenges in accessing particular publications. Therefore, a similar filtering section can be implemented in the publication page for easy access.



Figure 1: Yale Art Gallery -Availability of various filters and sorting options

Harvard [3] has a fresh abstract layout of the images in the home page and excels in strong usability, clear organization, and usage of effective metaphors. The events of the center are also marked in a Calendar-view so that the users can check the dates and events quickly. Similar intuitive metaphors can be used to enhance the effectiveness, particularly during the redevelopment of the entire website on a new platform.

Calendar



Figure 2: Harvard Art Gallery- Assortment of Events in accordance with the calendar for easier understanding.

University of California, Berkeley Art Museum & Pacific Film Archive [4] is another website this paper can take inspiration from when it comes to effective presentation of content and the principles of usability. One area where the CADVC site needs improvement is the publication page, which lacks information and can benefit from taking inspiration from the exhibition page of the BAMPFA site. On the BAMPFA site, exhibitions are displayed with a brief description along with dates, enabling users to understand and acknowledge the details of the exhibition



Figure 3: Brief Description of the exhibitions and the publications on the site.

UT Austin's fresh layout faces challenges in consistency because the different font spacing, and placement disrupts the flow of scanning through the website. However, it somehow compensates in terms of functionality with ample content and improved filters [5]. T Kunstmatrix [6] offers an outstanding interface, featuring 3D gallery tours, but faces limitations in providing detailed information about artworks such as the author's name and a brief description

of the artwork. However, Kunstmatrix is an innovative way to display art galleries and would substantially increase the user engagement, because it imitates the user experience of visiting a real gallery. Because of these features, this website had been marked as an inspiration for the redesign by the CADVC team, but given the current time and constraints, this would only be feasible in future redesigns. Moreover, implementing a 3D version of the gallery displaying the artworks to the CADVC website could possibly improve user engagement and enhance user satisfaction.



Figure 4: BAMPFA - Virtual tour of the galleries including the building's layout providing an immersive experience.

Another study by *Polys et al.*, aims to make the virtual art gallery experience even better by improving user interactions [23]. The plan is to simplify how users control the space, drawing inspiration from collaborative environments. Imagine being invited to group chats based on proximity, giving you control over who you interact with. There's also a discussion of adding a 3D map to help users easily navigate and explore highlighted artworks. This project demonstrated through an art gallery prototype, would include features like audio and spatial interaction for a more immersive experience. While it's not something that CADVC is looking for currently, it serves to be a valuable addition in the future.

While each website presents unique strengths, ranging from great information architecture and use of intuitive metaphors to immersive interfaces, they also suffer with distinct challenges that offer valuable insights for the ongoing discourse on user interface and design trends.

2.2 User Experience and Satisfaction

The ultimate goal of this project is to create a website that has improved aesthetics, usability and functionality. To accomplish this goal, specific guidelines have to be followed. A particular study on usability evaluation and redesign of University Portal Websites can be valuable to this design project [6]. The study by *Xiong et al.*, identifies five key indicators for university portal quality assessment: accessibility, content, design, navigation, and organization [6]. Through usability testing and a satisfaction survey, the research analyzes the current website's strengths and weaknesses. The findings highlight issues such as unclear navigation, disorganized content, and dissatisfaction with design. Based on user feedback, the study proposes a redesign with principles emphasizing user-friendliness, visual optimization, improved navigation, streamlined jump links, and better information integration. The research

contributes insights for future university website design, emphasizing the importance of usability considerations. This is relevant to this project, particularly the redesign of the Centre of Arts, Design, and Visual Culture website as the current CADVC website also suffers from similar usability issues such as unclear navigation, disorganized content and limited functionality. Some of the similarities between this paper and the current project includes conducting a targeted usability assessment, gathering user feedback, and prioritizing user-friendly design principles. However, customization is key, and these evaluation criteria, feedback questions, and design elements can be tailored to reflect the unique identity and goals of CADVC.

Another important reminder from the paper is redesigning for an improved user experience and user satisfaction [7]. In this paper, the authors *Wijaya et al.*, talk about how UI/UX influences user satisfaction in online art galleries [7]. They have performed a literature review and survey using the System Usability Scale (SUS) on two art websites called ArtStation and DeviantArt. Through their research, they found that meeting the user requirements, providing consistent design, and simplicity has a great impact on the user experience. The whole idea of our project is to enhance the appearance of the website so that it looks pleasing to use and to improve functionality by integrating effective features, and this paper talks about how this can be achieved in an art website.

One of the important requirements from the CADVC team is to create a website that is responsive on all platforms, and this can be achieved by using techniques like Automatic semantic platform-dependent redesign [9]. *Mori et al.*, suggest a solution for making websites user-friendly across different devices, like desktops and mobile phones [9]. It criticizes common methods like resizing for being less effective. Instead, the paper proposes a smarter approach called platform-dependent semantic redesign. This means considering the meaning behind user interface elements, not just their appearance, to improve usability. In practical terms, this concept involves using algorithms or automated mechanisms to analyze the semantic information of a user interface. It considers factors such as user tasks and dynamically adapts the design for optimal usability on different platforms. However, implementing this approach at this stage might be challenging due to specific constraints, such as time limitations and the need for advanced technical support. However, this is a great method to implement while creating a website from scratch. For this project, this paper can provide insights on how to ensure the CADVC website works well on various devices by focusing on both visual and functional aspects. The referenced papers served as a valuable resource of insights pertaining to the development of websites characterized by functionality, usability, and accessibility.

Overall, the websites and the literature mentioned here gave a significant boost to this redesign project. Insights from these papers have informed our design thinking, particularly in crafting prototypes and making design decisions. For example, the UC Berkeley's Exhibition Page, UT Austin's Functional Layout, Harvard's Calendar-View Metaphor and Usability Evaluation and Redesign Guidelines, all give many design inspirations contributing insights to the ongoing CADVC website redesign.

3 METHODS

3.1 Meeting with CADVC team

3.1.1 Initial stage of requirements analysis

Bi-weekly remote meetings were conducted to improve the collaboration and to gain more insights into the needs and goals. These meetings involved around 6 people including project team members, CADVC director and representative, and participatory design professor. The project began by receiving the requirement document made by the CADVC team during the past year. During the meeting, the CADVC team explained the requirement document and vision for the project, which mentioned the need for new designs for landing, publication, and support/donation page. The team began the work by performing an evaluation on the requirement document to understand the different sections to work

and the priority levels given to various tasks. Fig 5 illustrates the requirements document provided by the team, which contains several sections which includes, Feature name, Feature description, Necessity of feature, Priority of each feature on scale of five. The items are shown in different sections, starting off with the overall changes needed within the website and then categorized into different pages and the requirements inside each page.

	A	B	С		D	E	F	G
1	Feature Name	Feature Description	Is Feature Requi	red?	Weighted Max Value (1 to 5)	Squarespace.com Score	Squarespace.com Notes	Webflow.com Score
2	GENERAL CRITERIA							
3	Offers hosted eCommerce	Checkout takes place off of website and on the platform, so the platform	YES	-	5	5		5
4	RSS input and output	Allows sharing of content across web platforms	NO	-	4	4		4
5	Events and Programs	A section that highlights the gallery's upcoming events, programs, and e	YES	•	5	4		
6	Future Viability	The platform we select will still be viable in the next 5 years	YES	•	5			
7	Tool to create picture slideshows on any page	A tool for creating picture slideshows on any page. Easily assemble from		•				
8	Meets the accessibility requirements	Possible to integrate with Monsido, supports alt texts, etc.	YES	•	5			
9	User-friendly website interface for updates	The platform is easily updated and modified on each page by 'non-expe	YES	•	5 - applicable to everything			
10	Automatic formating	Text, images, and other media files are reflected on the webpage exact	YES	•	5			
11	Upload for PDFs, ePubs, and web publication	The website supports PDFs, ePubs, textual files, etc.	YES	*	4			
12								
13	OVERAL	LL: CRITERIA DEVIDED BY PAGE						
14	Landing Page: Media Files	High-Resolution and Scalable Media Files with Alt Text and Credit Lines	YES	٣	5			
15	Landing Page: Text	Text Content Easily Editable.	YES	•	5			
16								
17	Publications page: Purchase	Streamlined Publication Purchase: Clear Pricing, Shipping Details, and	YES	٣	4			
18	Publications page: Digital Publications	Website Supports Uploading and Downloading Digital Publications, inclu-	YES	•	4			
19								
20	Giving Page: Donation Options	The Giving Page Offers Multiple Support Options: One-Time Donations	YES	•	5			
21								
22	IN DETAI	LS: CRITERIA DEVIDED BY PAGE						
23	Landing Page: Header	Header: Gallery Logo, Name, and Navigation Menu.	YES	•	5			
24	Landing Page: Hero Image/Slideshow	Photo Showcase or Slideshow: Highlighting Gallery Collection, Upcomin	YES	•	5			
25	Landing Page: Introduction	Gallery Introduction: Mission and Current Exhibitions or Events Overview	NO	•	3			
26	Landing Page: Featured Exhibition	Current or Upcoming Exhibition Section: Featuring a Brief Description, F	YES	•	3			
27	Landing Page: Featured Artist	Featured Artist Section: Includes Brief Biography and Artwork Selection	NO	•	3			
28	Landing Page: Events and Programs	Upcoming Events and Educational Programs Section: Featuring a 'Lear	NO	•	3			
	+ E Sheet1 *							

Figure 5: Initial Requirement document sent by the CADVC team

1	Feature Name	Feature Description	Design/Functionality Change Required	Effort level	Evaluation
2	GENERAL CRITERIA	•			
3	Offers hosted eCommerce	Checkout takes place off of website and on the platform, so the platform take	Functionality	High ~	Stripe: Excellent payment gateway, compatible with all web development platf
4	RSS input and output	Allows sharing of content across web platforms	Functionality -	NA -	Requires more information on the input/output data to be shared.
5	Events and Programs	A section that highlights the gallery's upcoming events, programs, and educa	Design -	Medium -	Should be added to the landing page.
6	Future Viability	The platform we select will still be viable in the next 5 years	Functionality -	NA -	Webflow is a powerful platform that offers extensive customization options for
7	Tool to create picture slideshows on any page	A tool for creating picture slideshows on any page. Easily assemble from sele	Design -	Medium ~	Webflow and the other platforms has templates and elements which can creat
8	Meets the accessibility requirements	Possible to integrate with Monsido, supports alt texts, etc.	Design	High ~	Webflow has the option to directly add alt text with ease, but it doesnt have int
9	User-friendly website interface for updates	The platform is easily updated and modified on each page by 'non-expert use	Functionality -	Medium	SquareSpace and WordPress are easier for adding images and making websi
10	Automatic formating	Text, images, and other media files are reflected on the webpage exactly as t	Design -	Low	Webflow and similar platforms provide tools to create responsive websites, eff
11	Upload for PDFs, ePubs, and web publication	The website supports PDFs, ePubs, textual files, etc.	Functionality -	Low -	All the required file types are supported by webflow and other platforms
12					
13	OVER	ALL: CRITERIA DEVIDED BY PAGE			
14	Landing Page: Media Files	High-Resolution and Scalable Media Files with Alt Text and Credit Lines.	Functionality -	Low	Webflow supports High-Resolution and Scalable Media Files with integrated A
15	Landing Page: Text	Text Content Easily Editable.	Functionality -	Low	It is easy to edit text content on any of the platforms such as webflow, squares
16					
17	Publications page: Purchase	Streamlined Publication Purchase: Clear Pricing, Shipping Details, and Disco	Design -	Medium ~	
18	Publications page: Digital Publications	Website Supports Uploading and Downloading Digital Publications, including	Functionality ~	High ~	All the required file types are supported by webflow and other platforms
19					
20	Giving Page: Donation Options	The Giving Page Offers Multiple Support Options: One-Time Donations (Cred	Functionality -	High ~	Dedicated sections for One-Time Donations, Recurring Donations, and Planne

Figure 6: Updated Requirement document by the design team

After discussing with the team, a few additional criteria were added to the evaluation of requirements, including effort level and the assessment of whether it is functionality or a design change. Then the requirements were evaluated based on these two criteria. This evaluation can help the CADVC team to decide whether the requirements are feasible or not within the current platform and data from the effort level assessment will give them more insights on how to prioritize the action steps for the project. As illustrated in Figure 6, the integration of an in-house ecommerce system (row 3 in Fig.6) demanded a high level of effort, while the need for easily editable texts (row 15 in Fig.6) was comparatively low. This makes it easier to understand what feature is easily implementable and what is not.

3.1.2 Platform and payment gateway research

The document was evaluated, and subsequently, research about different platforms was conducted to determine which one is most suitable for the project. Since selecting a platform that can be used for a longer period was one of the major requirements, the team analyzed various design/development platforms such as WordPress, Webflow, Squarespace, and Framer. An analysis is conducted among these platforms to understand which platform better aligns with the needs of the project. The team began to analyze the strengths and weaknesses of each platform. Since the team members were not that familiar with these technologies, sample work was experimented on each platform to find out the different features and tools included within these particular platforms.

The implementation of an internal e-commerce system for the publications page was another significant component that the CADVC team was eager to get underway. For that the team conducted analysis on various payment gateway systems such as Stripe, Authorize.net, Cash.net and PayPal. Since these payment systems cannot be tested without integration, information from the websites of the respective gateway systems was used to gather information. After gathering all the information, the evaluation document was sent to the CADVC team shown in Fig 6.

3.1.3 Feedback

The team received positive feedback from the CADVC team regarding the evaluation information provided, specifically, the details about different platforms and the payment gateway systems. This information offered them the required insights. Meanwhile, the CADVC team also sent the initial requirement document to another important stakeholder in the UMBC IT department for feedback on the feasibility of the set requirements. They provided feedback on a few requirements, such as removing the slideshow for the homepage, adding security for publication ecommerce, and having features for analytics such as Monsido etc. For example, stakeholders voted against the proposal of having slideshows stating "I vote against this because by nature slideshows are likely (usually) inaccessible if they auto rotate (due to the user not having control and proper labeling, etc...) and then if they do not auto rotate, they are often ineffective or less effective at getting scrolls past the first or second slide." and they raised concerns about the security of the ecommerce system. Another comment mentioned the conditions of the giving page, stating "As far as I know this has to go through iModules / Advancement and cannot be made to work on another platform". These comments and feedback were directed specifically to the CADVC team, as they established the website requirements. Fig 7 and Fig 8 illustrate some of the feedback provided by the stakeholders to the CADVC team. The feedback from stakeholders not only assisted the CADVC team but also provided valuable insights to the design team, allowing them to recognize concerns and consider recommendations for the redesign. It would have been more beneficial if they had also reviewed the evaluation conducted by the team, which unfortunately did not happen. Receiving feedback and suggestions would have helped to attain more in-depth information about the feasibility of the design team's evaluation of the current platform. The CADVC team then outlined the subsequent steps for the project. Although the CADVC team commented that they were able to understand the different advantages each platform holds and determine which is better, they expressed a desire to observe the impact each platform could have on the designs (especially the publications page) and requested the team to work on three different prototypes utilizing Webflow [24], WordPress [10] with UMBC template and one without UMBC template. Due to limitations in the UMBC template, alterations to layouts, design elements, and navigation menus are restricted. The template has limitations that restrict significant design modifications, leading to a less-than-optimal user experience. Moreover, it enforces a rigid structure, making it challenging to effectively incorporate new and diverse content. Recognizing these constraints within the current UMBC template, the team specifically requested design demonstrations using WordPress [10], both with and without the UMBC template, as well as utilizing Webflow [24] to understand the differences between the platforms.

						_
GENERAL CRITERIA						
Offers hosted eCommerce	Checkout takes place off of website and on the platform, so the platform takes responsbility for security a	YE	es 🗸		5	
RSS input and output	Allows sharing of content across web platforms	N	0 •		4	
Events and Programs	A section that highlights the gallery's upcoming events, programs, and educational opportunities.	YE	ES 🔻		5	
Future Viability	The platform we select will still be viable in the next 5 years	YE	es 🔹		5	
Tool to create picture slideshows on any page	A tool for creating picture slideshows on any page. Easily assemble from selected media and add alt tex	— •	nuan Barne			
Meets the accessibility requirements	Possible to integrate with Monsido, supports alt texts, etc.		4:45 PM Oct 11			
User-friendly website interface for updates The platform is easily updated and modified on each page by 'non-expert users' - e.g. GAs, student work		I vote against this because by				2
Automatic formating	Text, images, and other media files are reflected on the webpage exactly as they appear in the website d	te d (usually) inaccessible if they a		are likely ble if they aut	to	
Upload for PDFs, ePubs, and web publication	The website supports PDFs, ePubs, textual files, etc.	rotate (due to the	user not		
		having o labeling	control and 1. etc) and	proper then if they		
	OVERALL: CRITERIA DEVIDED BY PAGE	do not a	auto rotate	they are		
Landing Page: Media Files High-Resolution and Scalable Media Files with Alt Text and Credit Lines.		often in effectiv	effective o e at getting	r less a scrolls past		
Landing Page: Text Text Content Easily Editable.		the first	or second	slide.		
		Show less			Ű	



16		
17	Publications page: Purchase	Rryan Barnes
18	Publications page: Digital Publications	4:47 PM Oct 11
19		We now need to add something
20	Giving Page: Donation Options	about security. How will we secure the sessions between us
21		and the pay processorhow will
22		we be responsible if the processor is hacked, or the
23	Landing Page: Header	transaction is hacked between
24	Landing Page: Hero Image/Slideshow	UMBC and the processor.
25		

Figure 8: Feedback regarding the security of the payment gateway system

3.1.4 Prototyping

The prototyping process commenced with the publication page, which had issues with insufficient information about various publications, a lack of filtering options, and overall poor usability attributed to misalignment and underutilization of white spaces. The team conducted a thorough analysis of arts and culture websites from different universities, as suggested by the CADVC team and some other websites which have great user interfaces which align with CADVC's vision. A comparative analysis of websites such as Yale [2], Harvard [3], UT Austin [5] and Kunstmatrix [22] was made focusing on the Navigation and Design, Information Presentation, User Engagement, Overall User Experience. These findings helped to create great prototypes emphasized on consistency, minimalistic layout, enhanced aesthetics and improved discoverability. Also researched different research papers to select the best approaches that can lead to better user satisfaction through the website, which is mentioned in the related works. The team also conducted a survey, which aimed to gain some insights from the UMBC students to find out their opinion and views about the current website. Which gave an overall view of the students, and we were able to use those insights to make better design decisions. Drawing upon the gathered information, three distinct designs were crafted

for the publication page, each incorporating new features such as an enhanced filtering system, improved utilization of white space, additional information for publications, and aesthetically pleasing images.

Since each platform has different levels of flexibility and constraints, every design had some differences, especially the one made with the UMBC template. This was very similar to the current website with some improvements and new additions, in terms of providing a different layout and added publication information. The Webflow [24] and WordPress [10] designs stood out for their aesthetic appeal, aligning with modern design trends inspired by similar websites. They effectively balanced the amount of information needed, enhancing discoverability through a well-defined visual hierarchy and a filter section. After designing the prototypes, the three designs were shared with the CADVC team for review. The CADVC team inquired about the work effort required to implement the website in Webflow and, since everything is designed and developed from scratch, it required more effort and migrating from the existing website will be difficult. Hence, the team opted to proceed with WordPress [10]. Shifting away from the UMBC template necessitates approvals from higher management. Therefore, the discussion concluded with the decision to continue using the UMBC template for the time being and a different template within WordPress in the future.

3.1.5 Final work

CADVC instructed the team to work on the support/donation website after expressing approval of the new designs of the publications page. They provided a sample donation page which was the giving page of the UMBC Library website and suggested to use as a reference. Referring to the sample website, the team made two different designs, one with UMBC template and one with a modern design made with Figma. The designs were made with the aim of making the page easy to navigate. After exploring the new designs, the CADVC team provided the administrator with access to implement the donation page to the actual CADVC website. Since the donation/support feature is not there on the current website, the team began implementing the donation feature to the CADVC website based on the prototypes made. The new changes were added to the existing website and the CADVC team suggested using different images and descriptions which they provided later. Due to the time constraints of this project, the CADVC team suggested concluding the work by adding the Stripe payment feature to the website. Which the team is currently working on.

3.2 Survey

The primary reason behind doing the survey was mainly to understand what the students feel about the existing website and to hear about their suggestions and feedback. Since understanding the user deeply is one of the major aspects of participatory design, the team aimed to achieve insights that can be helpful while making design decisions. Since the CADVC already had the requirements fixed and decided, this survey was mainly conducted to help the team in designing the prototypes. These survey results were not shared with the CADVC team, since the questionnaire and results were more focused on providing insights to the design team.

A set of 20 questions were formulated and then prioritized 10 questions based on the significance of information required which will help to gain a better perception of the website. Then the survey was sent to the students through google forms [14] and received around 15 responses which is very valuable for further work. The survey included multiple choice questions, short answer and linear scale questions to capture different levels of insights. And the google form [14] provides information in graphs (Fig.9, Fig.10, Fig.11, Fig.12) which helps to easily analyze and compare what the students feel about the website.

One of the major questions in the survey was about discoverability, the team tried to understand whether the users were able to easily find the information they were looking for. By capturing the result of this question, the expectation was to understand how discoverable the website is and how the information provided helps the users to

navigate and reach the intended information/page. Additionally, questions were asked to assess the clarity and organization of the website layout. The responses were expected to guide the team in enhancing the current layout or considering a different hierarchy to present the data in a more simplified format. Because one of the design inspirations was the Yale university of Art Gallery [2], which has a great layout with clean design and information presented in a way which is very easy to navigate. Therefore, these results were expected to provide an added strength to the findings of the comparative analysis for the design. Questions were asked to find if any design element on the website is confusing or distracting to the users. Because having confused and distracting elements can reduce the user experience and lead to not being able to complete the tasks efficiently. Thus, it is important that the pages should contain only the needed information and cleaner aesthetics which will help the user to perform the activities more easily. In addition, the team wanted to know the suggestions and feedback from the users, since user feedback and taking suggestions is very important in co-design and that can lead to choosing the design elements and features that will be useful for the users. Along with these questions other questions were also asked to get more clarity about the website and its usability.

The survey included the following questions:

- 1. How often do you use the "Center for Art Design and Visual Culture" Website?
- 2. What features or sections of the website do you use most frequently?
- 3. Were you able to easily find the information you were looking for?
- 4. Have you accessed the university website on a mobile device? If yes, how would you rate mobile responsiveness? (From a scale of 1 to 5, where 5 being the highest and 1 being lowest score)
- 5. Do you find the content on the website relevant and up to date?
- 6. Do you think the overall aesthetics of the website can be improved?
- 7. Is the layout of the website clear and organized?
- 8. Is there anything about the design that you find confusing or distracting?
- 9. Do you have any specific feedback or suggestions for improving the CADVC website?
- 10. How would you rate the overall user experience of the CADVC website on a scale of 1 to 5?

3.3 Brainstorming sessions

Additionally, conducted a brainstorming session with the team members, reviewing sample websites in order to find design inspirations. The idea behind these sessions was to think more deeply into the problem space to identify the different issues existing in the different pages of the website. The pages were divided among the teams to come up with the major issues and then started discussing the areas in which improvements could be made. Everyone came up with ideas and began to think about different ways in which the implementations can be made. To the existing website, new design ideas were added, and this process helped in refining the vision of improving the website design.

4 FINDINGS

4.1 Platform for design/development

One of the major requirements for the CADVC team was to find a platform that can be used for a longer period. The current website works with WordPress platform utilizing the UMBC template. Because of that most of the features of WordPress [10] are not available and there are a lot of constraints for adding new features and design changes. Through comparative analysis and research, we found that Webflow [24] and WordPress [10] without the template are the two best options to design/develop the website.

Webflow [24] is a web design and development platform which allows users to create websites without the need for coding. It allows beginner to advanced user level to create interactive websites with minimal effort when compared to manually coded websites. The drag and drop feature allow users to add interface elements quickly and easily. Since the CADVC website will be maintained by different people, having the flexibility to easily change the contents and add new elements is very important. But there is a learning curve for Webflow [24] which is required to implement different features and elements of the website. Even though this platform has lots of features and advantages, the major issue was transferring the current website to Webflow [24]. Because in Webflow [24] everything must be made from scratch, and it can take a lot of time and effort to build a new website. But when considering the future scope, Webflow [24] is the best choice for developing the CADVC website. Because it allows us to create whatever the requirement is without having any constraints for design and development. And it meets all the requirements and vision of the CADVC to build an interactive, and compelling website which offers great user experience and usability. It also allows the use of 3D objects and advanced animation features which was another vision of CADVC which they expressed during the initial discussion.

On the other hand, WordPress is also a website-builder with a lot of pre-built templates and the choice of editing it. It allows users to create websites easily using the different templates. It also has the drag and drop feature to add more content. But it does not have all the customization and flexibility as Webflow [24] does. Additionally, there is no option to create designs from scratch and it hinders the option to make the designs on our own interests. Nevertheless, when compared to using the UMBC template, WordPress provides a lot of room for customization and improvements. So, if the UMBC template can be removed, the overall design and usability of the website can be improved with WordPress by making new designs. Therefore, the scope of improving the website based on the vision of CADVC will be difficult using the existing UMBC templates.

4.2 Payment gateway system

Another major requirement from the CADVC team was the implementation of an in-house ecommerce system for the publication page and the support/donation page. To do this, a secure payment gateway system was required, and the team analyzed different types of payment gateways such as Stripe [15], PayPal [16], Authorize.net [25] and Cash.net [26]. One of the recommendations of the stakeholder was a secure and safe system for transactions. Therefore, the goal was to find a system which can be easily integrated with the existing website and has industry standard security for the transactions. Information about each system was gathered from the respective websites. From that, Stripe was chosen as the best option for CADVC's payment gateway. Because WordPress and Webflow allow direct integration with Stripe without the need for manual coding, which is one of the major advantages. Along with that, it is also PCI DSS [27] (Payment Card Industry Data Security Standard) compliant, which makes it very secure for transactions. In addition to that, there is no monthly or annual fee for using the service and the only charge is when there is a successful transaction. It will charge 2.9% + 30 cents from a transaction, and it doesn't have any hidden charges, which is an advantage of Stripe [15]. Thus, the team found Stripe to be a better choice as a payment gateway system for the CADVC website.

4.3 Survey

The survey received around 15 responses from the UMBC students, and the results from the survey were used for designing the prototypes. The survey began by asking the features and sections of the website most used and found that 68.8% of the users used the website to use the programs and events page of CADVC. The pages the CADVC team put more emphasis on working on were the publication and donation pages, which came in 3rd and 4th positions in user usage with 18.8% and 12.5%, respectively. This led the team to think that the user experience and the presentation of the pages might be contributing factors to the underutilization of these pages. Also, one another reason

is that the publication page lacked essential information and many publications were reverted to a different site rather than providing the needed information on the website. The team wanted to know whether the users were able to find all the desired information they were looking for and discovered that 50% of the users occasionally found the necessary information, while 31% were unable to find the information at all. This reveals the usability issues and lack of discoverability within the website. Fig 10 shows information about what users think about the overall aesthetics of the website, over 68% of the users expressed that improvements can be made to the website. This provided the team with insights into how most of the users feel about the website's design and overall aesthetics, indicating a clear demand for improvement. While the design and presentation of the website could be better, more than 62% of users have noted that the information itself is up to date. This insight helps us realize that it's not the content that discourages people from using the website but rather the way it is presented.



Figure 9: Survey about most used sections in the site.



Figure 11: Survey about information architecture

Do you think the overall aesthetics of the website can be improved? 16 responses



Figure 10: Survey about the aesthetic of the site

Do you find the content on the website relevant and up-to-date? 16 responses



Figure 12: Survey about up-to-date information

The survey responses collectively emphasize several key findings regarding user preferences for the website's design and functionality. Participants indicated a need for additional information on the homepage to provide better usability. One user commented "We need to incorporate additional information on the homepage to provide a more comprehensive overview.". Users also expressed a desire for more user-friendly and modern designs, with one responding, "Design can be made a bit more user-friendly. And the current one is quite outdated to be frank". These comments and suggestions clearly highlight the call for a better design and indicate a strong need for a website revamp. One user commented that, "Could be more artistic/visually appealing and creative for sure." All these comments really show that users want the website to be easier to use, look better, and have modern, eye-catching elements to make the whole experience better. Figure 13 shows some of the other comments by the users about the suggestions and feedback for the website.

This survey was helpful in finding the user's perspective in terms of discoverability, consistency and the overall user experience on the website. With this information and taking the suggestions into consideration, the team

utilized these findings to inform a redesign aimed at addressing the identified issues. And the team created the designs by also incorporating the findings of this survey. The changes made in the designs are explained in the prototype section of the report. Detailed explanations of these design changes can be found in the prototype section of the report.

Do you have any specific feedback or suggestions for improving the CADVC website? 16 responses				
reduce white space in the homescreen				
None				
Umbc logo takes up too much space				
Try modern designs. Make it more attractive.				
We need to incorporate additional information on the homepage to provide a more comprehensive overview.				
Needs improvements				
Same as above				
Nothing in particular, other than that some of the actual content is older and irrelevant				
making the ui clean and less cluttered				

Figure 13: Feedback by the users via the survey

5 PROTOTYPES

Prototypes are an essential tool for user involvement, communication, and iterative improvement in the design process. Prototypes for publication, support/design page were made using 3 different platforms; Webflow, WordPress with and without UMBC template. The objective was to evaluate the visual appeal and functionality of the designs across various platforms, aiming to identify and choose the most fitting one that aligns with the specific requirements of CADVC.

To enhance the publication page, the team-initiated improvements in the navigation system of the main menu to provide clearer indications of the user's current page or section. Through brainstorming sessions, it was identified that the navigation bar lacked a visual cue. In the Webflow prototype, a solution was implemented by introducing a yellow line beneath the selected menu item, enhancing user navigation and highlighting the active section (Fig.16). As we found through the sample website, the filter system is important and can improve efficiency. A filtering section and search option was added on the left side to search up and filter particular publications in Webflow and WordPress without the UMBC template designs (Fig.15, Fig.16). This will improve the efficiency of the users by obtaining the required publication more easily. In addition to that a quick action session was added to directly go to types of publication such as Open Access, New release, Recommendation, and Trending. Through the survey, the team received suggestions and feedback about having more information on the pages. The sample websites demonstrated a more concise approach by offering brief but informative details about publications, enabling users to grasp content without going into each publication. Taking inspiration from this approach, we made our design by including additional key information like publication summaries, format (hard copy or soft copy), and author details. Additionally, following discussions with CADVC, we incorporated quick-access buttons such as 'Add to Cart' and 'Buy Now', facilitating easier purchase pathways for users interested in acquiring publications. Since the WordPress using the UMBC template does not allow the changes made through Webflow and WordPress without the template, only minor changes were able to be made. The most notable modification involved a layout change, presenting three publications in a row for improved user accessibility, eliminating the need for extensive scrolling to obtain information. Additionally, the size of the images was increased to enhance visibility (Fig.14).

Following the publication page, the CADVC team discussed the giving/donation page during the meetings. A few different designs were made for the page based on their recommendations and requirements in the rubrics, which state: "The Giving Page Offers Multiple Support Options: One-Time Donations (Credit Card, PayPal, or Mailing a Check), Recurring Donations, and Planned Giving. Since the designs will be made with the UMBC template, the new designs the team made with Webflow and WordPress will not be integrating with the donation/giving page. The donation page was not part of the actual website, this page was developed from scratch and included images of the art gallery along with a description of CADVC and how users can contribute through donations. Responding to CADVC's specifications, two donation options were introduced: the 'CADVC General Operating Foundation' and the 'CADVC Exhibition Foundation.'(Fig.17) Clicking on these options directs users to the actual donation page, where they can select various donation amounts and choose between one-time or scheduled payments (Fig.19). These designs have been shared with the CADVC team and verified, and they are now live on the private official page.



Figure 14: WordPress with UMBC Template

Figure 15: WordPress without UMBC Template



Figure 16: UMBC with Webflow



Figure 17: Giving page – Home page





6 DISCUSSIONS

The findings of this project are rooted in the combined efforts of the CADVC team and the design team to improve the digital experience of the UMBC-CADVC website. The discussion about this project revolves around the connection of these findings with existing research that has been gathered up until this point and the design works related to university websites, usability evaluation, website redesign, and participatory design.

6.1 Key Findings

The first thing that was realized was the importance of improving the functionality and usability of the site. Next, the action steps that were crucial to the improvement of the website within the timespan were prioritized. This was possible by focusing on redesigning the more important pages of the site. One other key finding during the process was the complication of using a different content management system like webflow as the entire UMBC sites run on WordPress. Hence it was very difficult to create a design that's trendy with the current template that exists.

6.2 Implications

To assess the system usability, a survey method was utilized that was used in a research paper by *Wijaya et al. and* used those responses to assess the current user experience of the website [7]. Another important insight was from the paper by *Mori et al.*, where they stress the importance of consistent and responsive design [9]. Additionally, while comparing all the other university gallery websites, a summary of each website was created into a table seen in Table.1

Aspect/ College	Yale	Harvard	UT Austin	Kunstmatrix

Navigation and Design	Lack of intuitive navigation and inconsistent font sizes	Abstract image layout may impact user engagement	Fresh layout lacks consistency, hindering readability	Outstanding interface with 3D gallery tours
Information Presentation	Information-rich and well-structured publication page	Informative content, clear navigation, and apt use of metaphors	Despite layout challenges, information- rich content	Unique and immersive interface with 3D gallery tours
User Engagement	Home page design may hinder user engagement	Potential impact on user engagement due to abstract image layout	Lack of hierarchy and distinction may impact user engagement	Limited details about artworks may hinder user engagement
Overall User ExperienceImprovement needed in home page design, but the publication page enhances the user experienceStrong usability and clear organization contribute to a positive user experience		Despite layout issues, offers an information- rich experience with improved filters	Unique and immersive experience, but could enhance user engagement with more artwork details	

Table :1 Comparative analysis between Yale, Harvard, UT Austin and Kunstmatrix websites.

After this analysis, some of the design strengths from the websites were also used as inspirations. For example, the CADVC publication page (Fig.19) shows a brief description of the books like the exhibition page of University of California, Berkeley Art Museum & Pacific Film Archive [4]. Another example is using filters and sorting buttons (Fig. 19) to categorize items into different sections like the Yale Art Gallery [2].



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Popular Releases
New Releases

O Price

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Filters



All Publications

Oletha DeVane: Spectrum of Light and Spinit

New Releases

Maryland-based artist Oletha DeVane (born 1952) has long been a prominent presence in the Baltimore-area art scene, working in all media, including public

sculpture. Spectrum of Light and Spirit documents the first full retrospective of her work, from early paintings to video artworks and interactive sculpture.

Click to access 20220420_UMBC_CADVC_TahirHemphill_Pages-wAltText.v2.pdf

Oletha DeVane: Spectrum of Light and Spirit

Most Popular

Figure 19: Use of filters and features to separate and use brief descriptions to give more information about the publications.

Furthermore, relevant insights for the improvement of CADVC website usability are provided by the study conducted by *Xiong et al.*, [6] on the usability evaluation and redesign of university portal websites. The identification of key indicators for university portal quality assessment, including accessibility, content, design, navigation, and organization, is aligned with the goals of the CADVC redesign. Usability considerations essential for a successful project are guided by this paper. With more and more usability testing with users, qualitative data about the existing can be gathered.

Similarly, the research by *Wijaya et al.*, [7] on the impact of UI/UX design on user satisfaction in online art galleries resonates with the objectives of this project. The work done by these authors supports the importance of enhancing aesthetics and usability to improve the overall user experience by meeting user requirements and providing consistent design. This paper has had a significant impact on the redesign, stressing the importance of user satisfaction. This was one of the reasons the survey was conducted. To assess the usability and user experience of the existing website and to use that information to improve the website.

The concept of "Automatic semantic platform-dependent redesign" presented by *Mori et al.*, [9] proposes a thoughtful approach to ensure user-friendly websites across different devices like phones, tablets, and desktops. In this specific situation, this semantic information is integrated into logical descriptions of user interfaces, encompassing the potential tasks users intend to accomplish. While there are challenges in the implementation of such an approach, the paper provides insights that can be a guide for future efforts to make the CADVC website responsive on various platforms.

6.3 General Themes about the topic

From the analysis of different websites, assessment of the requirement rubric and the insights we got from the relevant research work, the places that need improvement in terms of usability and user experience were evident. However, the necessary actions cannot be taken with the existing template, hence research about different CMS was done. And to analyze that, three prototypes on different platforms were made. However, both the CADVC team and the Design Nexus Team came to the conclusion that it is better to use WordPress since the process of changing the CMS at this stage might not be feasible. Hence, we moved ahead with WordPress. Now the question was whether to stick with the UMBC template or not within WordPress. After days of discussion, it was figured out that the pages that need more iteration have to be made with a new template and not the UMBC template. But even with WordPress, functionality-wise, everyone tried to deliver the results that the CADVC team desired but could not entirely create a site that was like the vision as it was barely customizable. For example, flexible placement of certain Sections, the style of elements, integration of trendy or new elements were not possible with WordPress.

Due to many challenges and restrictions, it took a while to find the middle ground. This is not a complete solution with a groundbreaking design or a design marvel, but this sure is an improved version of the website in terms of functionality and usability. Later, once the team gave permission to access the UMBC site and edit, some changes were made to the existing support site as seen in Figure 20.



Figure: 20 Redesigned Giving page of CADVC Website

6.4 Limitations and Future Scope

Acknowledging the limitations is crucial for a realistic understanding of the project's scope. The initial survey had a sample size that was relatively small, primarily consisting of UMBC students. Expanding the survey to include a more diverse audience could provide additional perspectives about the current practice and experience of the users. Since the project has a time constraint, the opportunity to play around with modern design trends and user testing could not be utilized properly. Another limitation is the template constraint. If there was no particular template to follow, a more effective and efficient website with customizable features and filters could have been created. Additionally, platformdependent semantic redesign, as suggested by Mori et al., [9] presents challenges in implementation due to current project constraints. However, it remains a valuable concept for future consideration. While talking about future scope, one other recommendation that can be suggested is the utilization of a new template outside of UMBC's template, so that the website can be aesthetically pleasing and contain a lot of important information in a customized layout where the information is easier retrieve and also easier understand. to to

7 REPORT SUMMARY (Summary not completed, completion by December 11)

7.1 Strategies

In the participatory design project with the CADVC team, several key strategies were employed to analyze, evaluate, and make informed decisions regarding the redesign of the website. The following strategies were used

Comprehensive Platform Analysis:

- Conducted a thorough analysis of the existing WordPress platform and its integration capabilities within the UMBC templates.
- Explored the feasibility of achieving design and functionality goals within the constraints of the current system.
- Explored the current design problems on the website and researched how to improve the site in terms of usability and functionality.

Comparative Evaluation of Platforms:

- Explored alternative platforms such as Webflow and Framer to assess their potential advantages and features.
- Considered the trade-offs between design flexibility and practical considerations, taking into account the specific needs of CADVC.
- Weighed the different needs and requirements of the website and made sure that the requirements can be achieved through the platform that was going to be used.

Consideration of Stakeholder Preferences:

- Considered stakeholder preferences and priorities in the decision-making process.
- Ensured that the chosen strategies aligned with the expectations and requirements of the CADVC team and other stakeholders.

Scheduled Milestone Meetings:

- Participated in milestone meetings with the CADVC team to review progress, discuss feedback, and plan for future iterations.
- Maintained a collaborative and iterative approach to the design process.

Detailed Reporting and Documentation:

- Responded to specific requests for additional information by providing detailed reports and spreadsheet analyses.
- Ensured that the CADVC team had comprehensive insights into the considerations, evaluations, and decisions made during the project.

These strategies collectively contributed to a thoughtful and collaborative participatory design process, where the CADVC team's input, project goals, and platform considerations were carefully considered at each stage. The approach aimed to achieve a balance between creativity, functionality, and practicality in the redesign efforts.

7.2 Feedback received and discussed

Feedback was essential to our design approach since it helped us ensure the final product met the client's requirements and offered modifications. Emails and biweekly meetings were the primary ways of communication; however, the second type was more effective in providing insightful information and identifying areas that needed improvement from the CADVC team during the project.

7.2.1 Rubric Evaluation and Website Platforms Feasibility

During the first stage, CADVC provided an in-depth requirements list. We determined if each demand was related to design or functionality and verified that it met UMBC's design system, assessed practicality, and verified feasibility. Website platforms were listed in the rubric, which prompted us to suggest and provide comments. Meetings and emails were used to exchange feedback like below. Such detailed feedback really helped us to implement the design efficiently.

<u>CADVC team</u>: Thank you so much for this material. I appreciate the thoughtfulness and detail that you have included here. One additional column that might benefit us would be one that determines whether a given design or functionality is possible with the existing "sites" platform. Could you please add this to your review?

<u>Design Nexus</u>: The UMBC system, while effective in many areas, has limitations in integrating e-commerce plugins. While most design elements can be addressed, there's a lack of flexibility and customization options due to adherence to predefined templates. To achieve a user-friendly, modern site, other platforms like Webflow, Framer, or traditional development may offer more suitable solutions. Further insights are appreciated, and an Excel file can be shared.

<u>CADVC team</u>: We appreciate that you are also thinking ahead of other solutions we may consider. For tomorrow's review, focus on WordPress feasibility. Any insights on other platforms are welcomed but not mandatory. Prioritize WordPress capabilities.

Design Nexus: Evaluated WordPress in-depth.

7.2.2 Designing prototype

Prototypes are vital, guiding CADVC redesign by visualizing concepts, refining functionality, and gathering valuable user feedback for iterative improvements.

Design Nexus: Please find the links and PDFs of the required prototypes below: UMBC Prototype: https://www.figma.com/proto/IsRsVleSe8vuHjHzQnk9La/CADVC-PD?pageid=0%3A1&type=design&node-id=67-539&viewport=155%2C-132%2C0.06&t=ADhirf3KRaxyJ409-1&scaling=scale-down&starting-point-node-id=67%3A539&mode=design

7.2.3 Integrating the designs in the current UMBC template

During this stage, the designs for the "Giving page" were to be posted on the CADVC website for public review and suggestions from users. The CADVC team feedback, crucial for refinement, guided adjustments in design and functionality. WordPress was used to integrate two pages with necessary features. Important comments from the CADVC group at this stage consist of:

<u>CADVC team</u>: Design Nexus will create three iModules-integrated Webflow templates for the "giving page," inspired by the AOK gallery. The chosen option features a 'Donate Now' button leading to a page with two clear donation purposes. UMBC's analytics dashboard tracks various metrics; any additional analytics preferences should be specified. We also reviewed credit card processing research, WordPress giving page template, and stakeholder feedback.

<u>Design Nexus</u>: Please find the attached screenshots of the requested Donation page discussed in the previous meeting. Please review and confirm if they are ready to publish.

<u>CADVC team</u>: Here is the updated text for our giving page. Thank you for this effort! Delete the text in the "select an area of support" section. Please be sure the form linked in "About You" is functional and results are visible to me - if a google form, please make editable by me.

Design Nexus: The given page has been successfully updated as per your requirements and is now live on the website.

CADVC team: Thank you, Design Nexus, this looks great!

7.3 Templates used and why they were used

From the start of the project, deciding upon the platform was a big question. It was crucial to make the right choice as the current template of the website restricts most of the functionality that is mentioned in the requirement such as categorizing filters, a functional giving page with donation forms, a detailed publication page with inhouse e-commerce etc. Hence three important templates were compared against each other to choose one from them. They were Webflow, WordPress and WordPress with the UMBC template.

7.3.1Webflow Template

Pros:

- Enhanced Design Flexibility: Webflow offered more design flexibility compared to the constraints of UMBC templates.
- Intuitive Interface: Stakeholders appreciated the intuitive interface of Webflow, facilitating a smoother design process.

• Opportunities for Innovation: The Webflow templates provided opportunities to innovate in terms of layout, user interaction, and overall aesthetics.

Cons:

- Learning Curve: Some team members noted a learning curve associated with Webflow, which might require additional training for optimal utilization.
- Potential Integration Challenges: Integration with existing systems, such as iModules for donations, needed thorough consideration to ensure seamless functionality.

7.3.2 WordPress Templates

Pros:

- Familiarity: WordPress was the current platform, providing familiarity to users and potentially reducing the learning curve.
- Plugin Availability: WordPress offered a wide range of plugins, contributing to the versatility of the platform.
- Community Support: The extensive WordPress community provided resources and support for troubleshooting and problem-solving.

Cons:

- Design Limitations: Constraints within UMBC templates limited design customizability, potentially impacting the achievement of a modern and user-friendly look.
- Integration Challenges: Integrating certain features, such as advanced e-commerce functionalities, might be challenging within the UMBC system.

7.3.3 WordPress with UMBC Template

Pros:

- Consistency: Utilizing UMBC templates ensured consistency with the university's branding and design guidelines.
- Integration with University Systems: Integration with existing UMBC systems and platforms might be smoother with UMBC templates.

Cons:

- Design Rigidity: UMBC templates imposed certain design limitations, potentially affecting the visual appeal and user experience.
- Limited Customizability: The predefined templates limited the team's ability to create a unique and tailored design for the Publications page.

7.4 Decisions take

7.4.1 Why WordPress

The decision to choose WordPress as the platform for the CADVC website was influenced by several factors, each carefully considered to align with the project's goals and constraints.

• Familiarity and User Base:

WordPress is a widely used content management system (CMS) with a large user base. The team considered the familiarity of WordPress among potential users, including stakeholders at CADVC who might already be

acquainted with the platform. This factor was crucial in reducing the learning curve and ensuring that the CADVC team could easily manage and update the website content.

• Integration Capabilities:

WordPress offers a robust ecosystem of plugins and integrations. Given the requirements for features like online credit readers and iModules scripts, the team recognized that WordPress provides a flexible framework to seamlessly integrate third-party tools. This capability is crucial for the smooth functioning of functionalities like credit card processing and donation tracking.

• Existing Infrastructure:

The decision to continue with WordPress also considered the existing infrastructure at UMBC. WordPress was already the current platform, and transitioning to a different platform might have involved additional complexities, potential data migration challenges, and adjustments to the existing workflow. Staying with WordPress ensured continuity and minimized disruptions.

• Balancing Design Constraints:

While WordPress has some design constraints within the UMBC template framework, the team considered these constraints in the context of the overall project goals. The familiarity and integration capabilities of WordPress were deemed more critical than the design limitations, especially when considering the target user base and the need for a practical and user-friendly interface.

• Stakeholder Input:

The decision to continue with WordPress was informed by stakeholder input, including feedback from the CADVC team. By actively considering their preferences, requirements, and expectations, the team aimed to ensure that the chosen platform aligned with the needs and goals of the end-users.

• Balance of Innovation and Practicality:

While considering more flexible platforms like Webflow, the team weighed the need for design innovation against practical considerations. It was evident that most of the desired functionality can be achieved with WordPress as well. Given the balance between the desire for a modern and user-friendly design and the practical constraints of existing systems, WordPress emerged as a pragmatic choice that addressed both creative and operational aspects. In summary, the decision to choose WordPress was a strategic choice based on its familiarity, integration capabilities, existing infrastructure, community support, stakeholder input, and the balance between design innovation and practicality. This decision aimed to ensure a seamless transition for users, leverage the strengths of the WordPress ecosystem, and align with the overarching goals of the CADVC website redesign project.

7.4.2 Card Reader Analysis

A comparative analysis of the mentioned options for credit card processing in WordPress (Option 1 to Option 4 provided by the CADVC team) and Stripe:

Option	Pros	Cons
Manual Processing	- No set-up costs or monthly fees.	- High security risk due to manual handling of credit card information.
	- Simplicity in execution, especially for low transaction volumes.	- Time-consuming process with weekly or bi-weekly deposits.
		- Lack of immediate transaction confirmation.

Authorize.net	- Online software with secure transactions.	- \$164 setup fee and ongoing monthly maintenance costs.	
	- Availability of a UMBC Merchant Number.	- Additional coordination required with Michelle Rhodes at Truist Bank.	
	- Flexibility for online payments.	- Costs may accumulate over time.	
Online Credit Reader	- Ability to accept credit card orders in person and over the phone.	- Uncertainty regarding seamless integration with the website.	
	- Potential integration with the CADVC website.	- Ongoing merchant service fees.	
	- Moderate setup cost.	- Coordination with another department for details.	
Cash.net - 3rd Party Vending Payment System	- e-Market functionality for online orders.	- High yearly fee of \$3,000.	
	- Used by other departments on campus.	- Need to assess expense vs. revenue.	
		- Limited information provided on integration with the CADVC website.	
Stripe	- Well-established and trusted online payment processor.	- Potential transaction fees (depending on the specific pricing plan).	
	- Seamless integration with WordPress.		
	- Strong security measures and PCI DSS compliance.		
	- Transparent pricing structure.		
	- User-friendly checkout experience.		

7.4.3 Why Stripe

Stripe is a widely used and trusted online payment processor that seamlessly integrates with websites. If the primary goal is to facilitate online transactions through the CADVC website, Stripe may have been chosen for its robust online payment capabilities.

• Integration with WordPress:

Stripe has established plugins and integrations for WordPress that make it relatively straightforward to implement and manage. The ease of integration with the WordPress platform could be a deciding factor, especially if the team values a seamless and efficient setup.

• Security and Compliance:

Stripe is known for its strong security measures and PCI DSS compliance. When handling credit card information, security is paramount. Organizations often prioritize payment processors that adhere to the highest security standards to protect customer data.

• User Experience:

Stripe offers a smooth and user-friendly checkout experience. A positive user experience is essential for encouraging customers to complete transactions. Organizations may opt for Stripe if they prioritize a straightforward and intuitive payment process for users.

• Cost Considerations:

Stripe collects $2.9\% + 30\phi$ per successful charge as long as you're doing under \$1 million in volume per year. Stripe's transparent pricing structure may be appealing, especially if it aligns with the budgetary constraints of the CADVC.

• Flexibility for Different Transaction Types:

Stripe supports various transaction types, including online, in-person, and over-the-phone transactions. If the CADVC envisions a multi-channel approach for accepting payments, Stripe's flexibility across different transaction scenarios could be advantageous.

• Reputation and Reliability:

Stripe has earned a reputable standing in the online payment industry. Its reliability and positive track record may contribute to the decision, as organizations often prefer established and trusted payment processors.

8 ACKNOWLEDGEMENTS

Our team Design nexus comprising Aisvarya Sundaram, Jestin Antony, and Priya Jain demonstrated exceptional collaboration and dedication throughout the project. From gathering requirements from the CADVC team to evaluating the requirements, everyone did a crucial part by sharing their expertise and brainstorming to gather deeper insights. Regular weekly meetings were conducted to discuss the next steps to be done and deliverables requested by the CADVC team. The team collectively provided information and opinions for the evaluation based on individual research. The team researched extensively on the different platforms such as WordPress, Webflow, Squarespace to find the best one for the project. Additionally, everyone researched about the various payment gateways which was a priority requirement by the CADVC team. All this information found through the research and analysis was shared with the CADVC team during the meetings.

Since Priya has experience working with UMBC templates, she took charge of making the prototypes using the UMBC templates. Aisvarya specialized in WordPress in delivering the prototypes for the publications page. Jestin worked on the Webflow platform to make new designs for the website. For the survey part, everyone together made the questionnaires and sent them to the UMBC students. In the report, Priya mainly focused on the Introduction and Motivation part and summary report and also took responsibility for formatting the report. Aisvarya worked on the Related works, Discussions, Summary report, and References. She also helped in gathering information about the title, and CSS concepts with Priya. Jestin worked on the Methods, Findings, Prototypes, acknowledgments, and Conclusion. Most Importantly, we would like to thank Rebecca Uchil and Mariia Usova for their support and Dr. Foad Hamidi for his guidance and involvement, without whom this project would not have commenced. We also thank the participants who volunteered for the survey for this study. ChatGPT and Grammarly are utilized for the correction of grammar mistakes, punctuation errors, and overall enhancement of writing quality. By incorporating these technologies, we were able to ensure writing precision and present our research in a polished and professional manner.

9 CONCLUSIONS

The paper details the effort of redesigning the website of UMBC's Center of Art Design and Visual Culture (CADVC). The project aimed to design the landing, publication and support page with a better user experience and usability in general. Through a participatory and user centered approach, involving UMBC stakeholders, CADVC team, UMBC students and drawing inspirations from other university art galleries, the project addresses several issues related to discoverability, navigational challenges and outdated design concerns.

Different methods including meeting with the CADVC team, survey with students, comparative analysis and brainstorming sessions were successfully conducted to gather information and to make progress with the design work. Major findings of the project include figuring webflow and WordPress without UMBC template for the design/development platforms and Stripe for the payment gateway system. The project yielded multiple new designs for publication, enhancing the aesthetics and functionality of both the publication page and the support/donation page. Additionally, a support/donation feature was successfully integrated into the existing CADVC page.

The findings of this project have the potential to enhance the user experience of the CADVC website in the future and this information will benefit the CADVC team and stakeholders to develop new features and improvements to the website. The project team Design Nexus had a great experience working with a real-world project which has an impact on the students, faculty and other stakeholders. A key recommendation is to transition away from the current UMBC template, as it may constrain our ability to enhance the user experience effectively on that platform.

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