DM3107 – Major Research Project

Research Proposal

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3979 Words

List of Illustrations:

Abstract:

Motion graphics, a dynamic form of visual communication, have become increasingly prominent in various fields, changing the way information is conveyed and enhancing user engagement. This research proposal aims to investigate the potential of motion design in enhancing interactions and user engagement, particularly with online applications.

The objective of this research is to provide valuable insights into the strategic use of motion graphics to inform and captivate users, shedding light on their impact on user experiences. The proposal outlines the methods that will be undertaken to gather relevant research, ensuring an informed discussion and analysis to draw conclusions. The research will dive into existing literature, drawing from notable studies such as Lai et al., which highlight the positive influence of animation on visual appeal in websites. Drawing from this information, the study aims to explore how motion graphics, when utilised efficiently, can attract viewers to online portfolios and contribute to improved traction and attention. This proposal also details my own perspectives in understanding the significance of motion graphics and how they could be further understood by discovering their role in online portfolios.

The anticipated outcomes of this research will contribute to the academic discussion surrounding motion graphics but also offer practical insights for professionals seeking to enhance user engagement in online applications and portfolios.

Introduction:

In the dynamic realm of User Experience (UX) and User Interface (UI) design, the integration of motion graphics stands as an important element, promising to improve interactions and engagements. This case study embarks on a comprehensive exploration into the utilisation of motion design strategies with the overarching question: ‘How can we use motion graphics to improve interactions and enhance engagements in user experiences?’.

The choice of investigating this area is rooted in the anticipation that a better understanding of motion graphics will help enhance my comprehension of UX and UI design. This, in turn, will allow me and other designers to create designs that not only resonate with users, but actively captivate the intended target audience.

The objectives of this study are crafted to dissect the complexities of motion graphics in user interactions. These objectives include identifying how motion graphics capture and sustain viewer engagement, exploring the current landscape of online applications utilising motion graphics, and exploring effective strategies for employing motion graphics to retain user attention. Additionally, an objective to critically evaluate the drawbacks of using motion graphics, recognising instances where static visuals might be preferred.

Within this case study, I will investigate the current knowledge of motion graphics and their role in user interactions from trusted sources that are relevant to the research question, ensuring the sources are recent and not outdated. I will gather my own primary research in the following semester to help support the current literature knowledge. With

these discoveries, I aim to address a gap in the existing literature that fails to reflect on how motion graphics aid in online portfolios and if their utilisation improves employment or interest. To address this gap, I will take this research forward into the second semester with an online portfolio that utilises motion graphics to create engaging and attractive interactions.

I will draw my own conclusions and form my own opinions that will aid in creating my project in the second semester: an online portfolio that utilises motion graphics to create engaging and attractive interactions.

Methodology:

For this research project, I have adopted a comprehensive approach by gathering insights from diverse sources, including trusted online platforms such as Onesearch on the Winchester Library and Google Scholar. Additionally, I aim to broaden my perspective by accessing physical reading materials in the University of Winchester's library. Gathering research from these various formats ensured a thorough exploration of my chosen topic - motion graphics and their impact on user engagement and interaction.

In this research process, it is crucial to balance quantitative and qualitative methodologies. Quantitative data focuses on numerical and statistical values, addressing 'how many' of something, which qualitative data delves into the 'why', incorporating observations and interpretations.

Given the study's focus on understanding the impact of motion graphics in user experiences and 'why' it makes an impact, a predominately qualitative approach will be taken. This involves observing the use of motion graphics in a variety of applications and gathering a range of research with multiple viewpoints on their effect. However, to complement this, a few sources utilising a statistical approach may be necessary to build a well-rounded case study.

In addition to this, integrating both secondary and primary sources is essential. Secondary sources provide a solid foundation to interpret information from, drawing from established and credible materials, while primary sources offer unique, firsthand insights. However, as this is the proposal for the information and project I aim to develop next semester, primary research will be further developed going forward, aiming to provide additional depth and original perspectives.

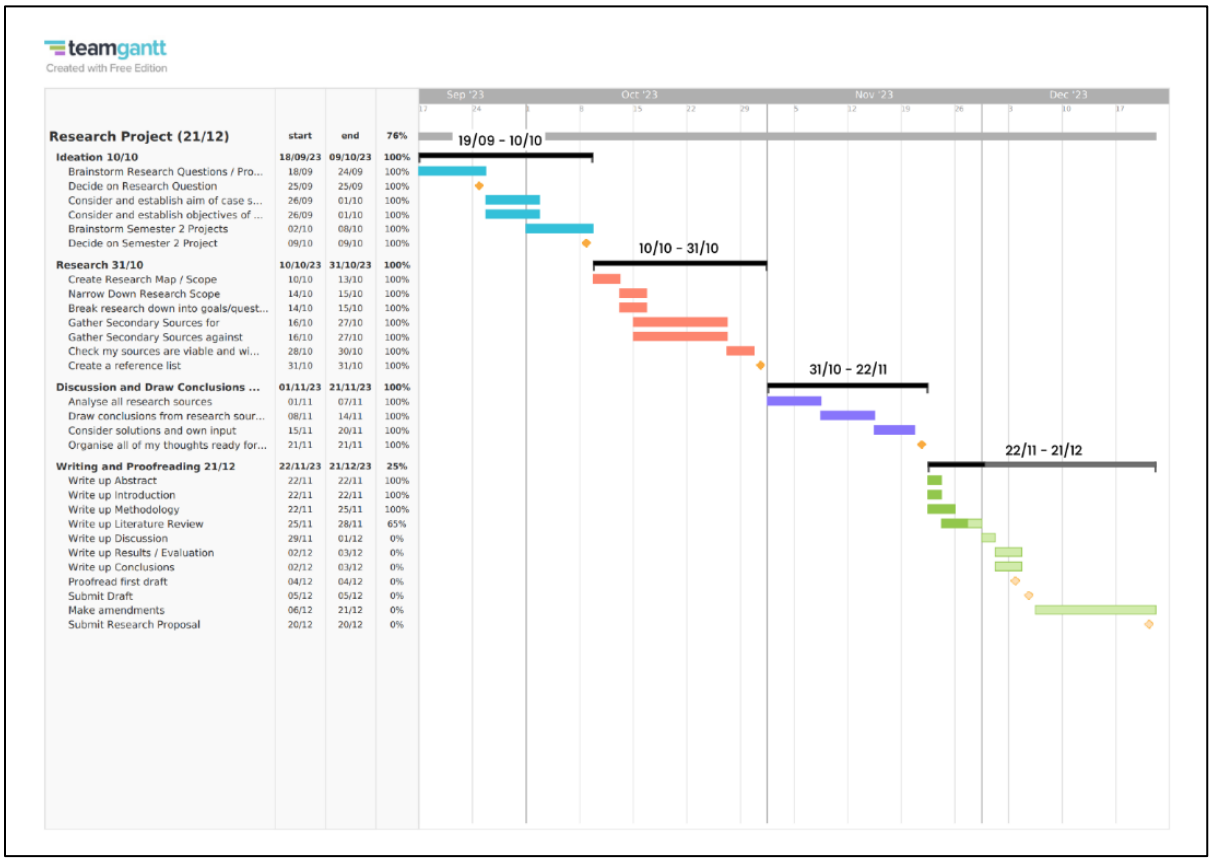
When strategically planning my time, planning for potential unexpected circumstances that could disrupt my progress is my priority. One significant challenge is my involvement in other university projects and a demanding work placement, taking up 24 hours of my weekly independent study time. It is crucial to predict how these commitments may influence both this research project and my simultaneous projects, necessitating flexible time management and strict milestones.

Consideration must also be given to any transportation challenges and the possibility of illness, which may prevent, in-person interactions and feedback from my program leader and peers. To address this, I plan to utilise digital communication tools such as Microsoft Teams and Google Meet, while remaining updated on class content via Canvas. Additionally, to manage illness effectively, I've allocated extra time, recognising the difficulty of extensive digital usage during periods of chronic headaches and illnesses.

However, it is wise to employ physical methods when unwell as this will allow me to utilise time wisely while still prioritising my well-being.

Recognising the potential risk of insufficient sources and research challenges, I must prioritise focus on my research question with a balanced scope. This proactive measure aims to prevent any unnecessary information being gathered and guarantees the successful completion of this research proposal.

When organising my schedule, I established specific goals and targets to provide a structured framework for monitoring my project's progression. This approach enables me to identify my project's status, so that I may make timely adjustments if necessary while staying focused on the task at present. The project's timeline was divided into quarterly



Research Project (21/12)	start	end	76%
Ideation 10/10	18/09/23	09/10/23	100%
Brainstorm Research Questions / Pro...	18/09	24/09	100%
Decide on Research Question	25/09	25/09	100%
Consider and establish aim of case s...	26/09	01/10	100%
Consider and establish objectives of ...	26/09	01/10	100%
Brainstorm Semester 2 Projects	02/10	08/10	100%
Decide on Semester 2 Project	09/10	09/10	100%
Research 31/10	10/10/23	31/10/23	100%
Create Research Map / Scope	10/10	13/10	100%
Narrow Down Research Scope	14/10	15/10	100%
Break research down into goals/quest...	14/10	15/10	100%
Gather Secondary Sources for	16/10	27/10	100%
Gather Secondary Sources against	16/10	27/10	100%
Check my sources are viable and wi...	28/10	30/10	100%
Create a reference list	31/10	31/10	100%
Discussion and Draw Conclusions ...	01/11/23	21/11/23	100%
Analyse all research sources	01/11	07/11	100%
Draw conclusions from research sour...	08/11	14/11	100%
Consider solutions and own input	15/11	20/11	100%
Organise all of my thoughts ready for...	21/11	21/11	100%
Writing and Proofreading 21/12	22/11/23	21/12/23	25%
Write up Abstract	22/11	22/11	100%
Write up Introduction	22/11	22/11	100%
Write up Methodology	22/11	25/11	100%
Write up Literature Review	25/11	28/11	65%
Write up Discussion	29/11	01/12	0%
Write up Results / Evaluation	02/12	03/12	0%
Write up Conclusions	02/12	03/12	0%
Proofread first draft	04/12	04/12	0%
Submit Draft	05/12	05/12	0%
Make amendments	06/12	21/12	0%
Submit Research Proposal	20/12	20/12	0%

milestones and displayed in a Gantt chart (Fig 1), which not only served as a roadmap for the project but also provided a dynamic tool of self-assessment that allowed for agile adjustments when needed.

Fig. 1. A personalised Gantt chart from TeamGantt.com that details the timeline and expected milestones for the research proposal for the first semester.

Quarter 1: Ideation Process - Establishing Questions and Objectives

During the first quarter, my focus was the initial ideation process. I established a direct research question with clearly defined objectives, setting the stage for a well-structured research project.

Quarter 2: Research Scope and Mapping:

The second quarter was dedicated to expanding the research scope and creating a comprehensive research map. This involved specific planning to navigate the wide landscape of information and sources relevant to the research question.

Quarter 3: Establishing Thoughts for Discussion and Results

The third quarter revolved around establishing and connecting all gathered information, bringing together my own thoughts to formulate meaningful discussions and results. This phase aimed to create a cohesive narrative from diverse perspectives.

Quarter 4: Drafting and Proofreading for Submission:

The final quarter was designated for the meticulous process of drafting, refining, and proofreading. This step ensured a well-presented submission aligned with the project's objectives.

To help ensure I reached the targets for each quarter, I created a tactile to-do list (Fig 2) which broke down overarching goals and objectives into smaller, more manageable tasks. By viewing goals as more achievable tasks, I can selectively tackle a few at a time, preventing any overwhelming feelings that may arise when looking at the project.

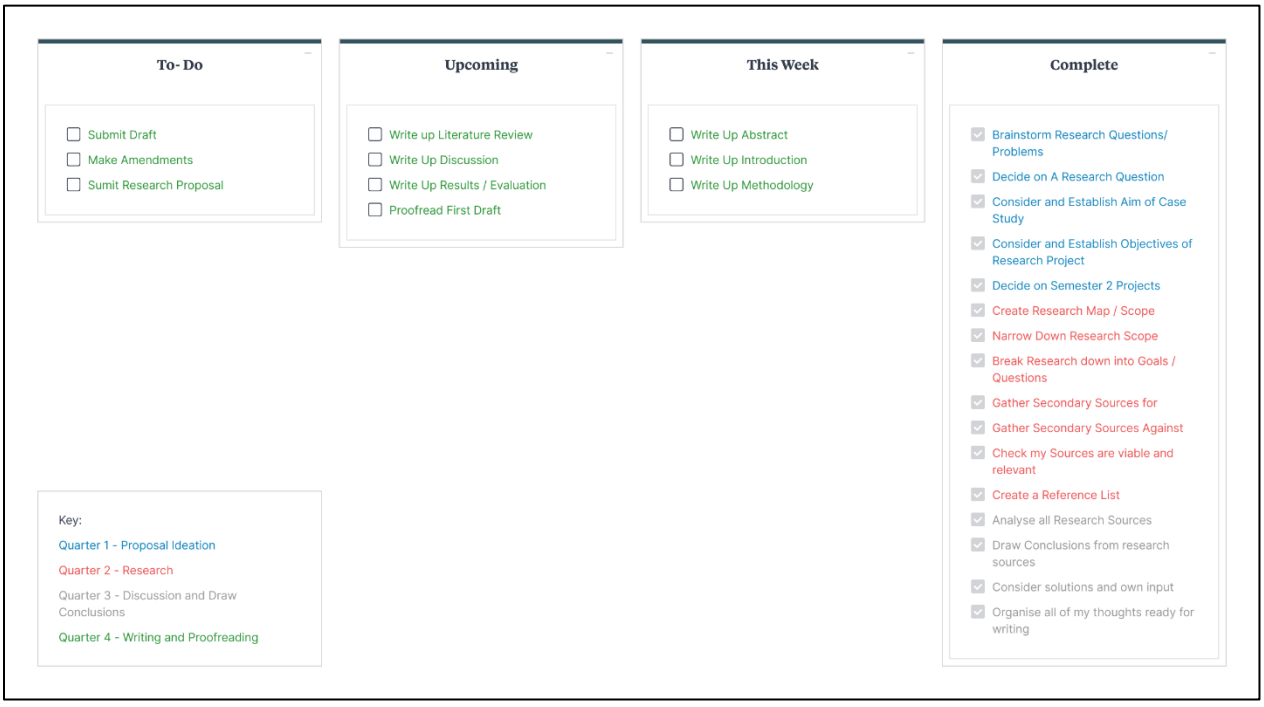


Fig. 2. A tactile to-do list that details the tasks that are required to complete the research proposal.

If I missed a predefined goal or target, it would have been important to thoroughly reassess my timeline. This process includes identifying areas where adjustments can be made to slightly extend the timeline for a specific goal. However, I would need to ensure that these adjustments are not relied on, as this could cause a ripple effect on other targets and overall project goals.

Literature Review:

What are motion graphics?

Motion graphics combine a diverse range of graphical elements such as text, sound, illustration, graphics and more (Geng, 2016). This combination creates a visually interesting experience that captivates users more effectively than static graphics (Fattahi, Shir and Asadollahi, 2014). Understanding how the online world is developing can help emphasise the importance of including motion graphics in UX and UI design appropriately, and with the rise of HTML 5, Fattahi, Shir and Asadollahi believe that the future of the web will be filled with motion design, offering designers a tool to engage audiences and communicate information in a more innovative and creative way.

Training and Techniques:

One notable application of motion graphics lies in training and educational settings. Animated videos have proven instrumental in helping individuals understand techniques and information much more clearly. For instance, research from Michigan State University (Michigan State University, 2019) revealed that animated videos played an important role in encouraging farmers to adopt specific agricultural techniques. In healthcare, 3D animations are used to communicate more complicated details and processes that are ‘otherwise difficult or impossible to perceive with the human eye’.

In a training context, motion graphics offer clarity and interest to new team members (Santoso, Ghassany and Putri, 2021). By utilising sound, images, movements and colour, these graphics transform training processes into engaging and informative experiences that not only help avoid misinterpretations but also ensures a more thorough understanding.

Education:

In an educational setting, motion graphics have demonstrated superiority over conventional learning media such as books or lessons (Hanif, 2020). Hanif's research indicates that motion graphic video media is more effective in education, making it much easier for students to comprehend materials. Interactive video media further enhances understanding, making educational content more accessible.

The versatility of motion graphics allows media to convey information and engage users in a variety of ways. Not only through traditional information, but also through spreading awareness messages to the public (Azahari et al., 2020). The emotional connection created by motion graphics makes learning interactive and enjoyable, simplifying complicated topics through nearly instantaneous visual processing.

Gamification to Enhance User Engagement:

When looking into motion graphics and its role in the media, it's important to consider the incorporation of gamification. Gamification is the process of 'making a task more interesting by adopting gaming mechanics' (Marczewski, 2013). (Ning, 2018) argues that gamification can be a critical tool in enhancing user experience. Gamification in animated simulations not only enhances user experiences but also contributes to safer and more

enjoyable exercises. For instance, McKinsey and Company (McKinsey and Company) use gamification and animated simulations in construction, air transportation and more to ensure their training exercises are safe and enjoyable for new hires.

(Rebelo and Isaías, 2020) discovered a ‘positive correlation between the use of gamification tools and the degree of users engagement’, making it a valuable aspect of motion graphic applications.

Successes:

With all these applications of multimedia in learning and information communication, motion graphics have proven highly successful. Their emotional appeal makes information more comprehensible and sometimes relatable, as discussed by (Azahari et al., 2020) when analysing the use of motion graphics in creating awareness on handling stress. Users are more likely to resonate with content that captures their emotions, creating a lasting impact on their understanding of information. Azahari argues that a person will ‘immediately empathise with and feel the emotions of the experiences that the person watches or sees on a screen’. The effectiveness of motion graphics in education lies in their ability to establish an emotional connection also, as motion graphics can make learning ‘interactive and joyful’ for students when establishing an emotional connection (Hanif, 2020).

Motion Graphics in the Online Realm:

The online world has witnessed a surge in the use of motion graphics in recent years, with websites utilising animation to enhance visual appeal (Lai et al., 2009). Due to their rise in population, it is not surprising that motion graphics help websites become more visually

appealing and can draw attention from viewers to certain elements on a website. The success of motion graphics on the web could be due to their 'distinctiveness from the rest of the stimuli', meaning they stand out amongst static graphics and single-media webpages. Eye-tracking studies, such as (Cheung, Hong and Thong, 2017), suggest websites that incorporate motion graphics have an increased level of interest and engagement.

A specific approach to utilising motion graphics and animations online is in animated banners and advertisements. Flashing and moving elements on a webpage can help consumers find items a lot faster, which could suggest why banner advertisements have seen an increase over the evolution of the online world (Hong, Thong and Tam, 2007). Company managers and media owners are shifting towards combining multiple graphical elements for their online advertising, including animation (Fattahi, Shir and Asadollahi, 2014). Advertisers are opting for more animated media than static options when creating advertising campaigns (Lai et al., 2009), as seemingly, animated advertisements influence a much more positive reaction. Lai et al argues that motion graphics help 'enhance product visualisation so that the products are more comprehensible', which suggests that animation and moving images can help users understand the purpose of a product more clearly.

Despite their successes, motion graphics are still a controversial topic due to their challenges, such as potential distractions and 'negative perceptions' associated with animated banner advertisements (Sundar and Kalyanaraman, 2004). An eye-tracking study that investigated the impact of banner ads found that motion graphics are more effective when consumers are just browsing rather than looking for a particular product, meaning that if a user is not browsing, the use of multimedia could frustrate or distract them (Hong, Cheung and Thong, 2021), as animated ads are 'perceived as more annoying

than their static counterparts'. Careful consideration of motion graphic placement and content is crucial to avoid annoyance and maintain user engagement. Moreover, search engine invisibility and longer website download times are factors that emphasise the importance of a balanced approach to motion graphics implementation.

Motion over Static:

Many argue that motion graphics are more effective than static graphics, particularly in 'mentally visualising a process or procedure'. (Höffler and Leutner, 2007) argues that motion graphics reduce cognitive load that is otherwise increased when a process must be understood from a series of still images, which could "lead to misinterpretations".

Table 1 – Key website design elements for user engagement
(adapted from Garett et al., 2016)

Design Elements	Definition	Examples of Indicators
Navigation	Effortlessness of navigation	- Noticeable menu - Search features
Graphical Representation	Usage of icons, multimedia and contrasting colors	- Adequate image resolution and size - No visual overload
Organization	Existence of a logical organization	- Inclusion of keywords - Clear structure
Content Utility	Information's usefulness and interest	- Quality of content - Content's pertinence to the nature of the website
Purpose	Clear statement of the website's purpose	- Distinctive identity - Inclusion of contact information
Simplicity	Simple website design	- Organized layout - Intuitive functions
Readability	Readable and understandable website	- Simple to read - Accurate spelling and grammar

Fig. 3. Table 1 – Key website design elements for user engagement. Source: 'Gamification as an Engagement Tool in E-Learning Websites' (Rebelo and Isaías, 2020).

The table in Figure 3 looks at key website design elements to help engage users in a website interaction and details the importance of multimedia and graphical representation (Rebelo and Isaías, 2020).

Static over Motion:

On the contrary, (Höffler and Leutner, 2007) argues that animation lacks effectiveness in information retention. In contrast to a sequence of static images, a motion graphic video cannot be closely studied frame by frame. If a certain frame is not clear to the individual, the information may fail to be remembered without revisiting the graphic.

How to Incorporate Motion Graphics:

When diving into creating motion graphics, it is important to consider the components that go into creating them. According to insight from (Song, 2021), elements such as ‘logic, transformation, transition, and soundtrack’ must be carefully addressed during the design process. Additionally, (Azahari et al., 2020) emphasizes the significance of colour choices in maintaining the audience’s undivided attention until the end of the graphic.

Recent trends, as highlighted by (Geng, 2016), seem to have a common style of flat graphic design. This approach aims to optimise delivery of information without overloading the viewer with useless graphics. (Cheung, Hong and Thong, 2017) suggests that incorporating subtle animations not only enhance specific elements but also contributes to a ‘longer viewing time’ on entire webpages. Beyond aesthetics, Geng also argues that considering emotions and narrative is important to consider when integrating motion graphics into media - ‘a good narrative can make motion graphics more attractive’.

Discussion:

Gaining knowledge from the literature review, it is clear that motion graphics play a crucial role in captivating users across various applications. Despite the variety of research on their effectiveness in training, education, e-commerce, and more, there is a noticeable

gap in understanding the impact of motion graphics on digital portfolios. If these animated visuals are instrumental in engaging users in diverse contexts, it is safe to assume that animation can similarly play a pivotal role in captivating viewers within the world of webfolios.

For instance, as argued by (Michigan State University, 2019, Santoso, Ghassany and Putri, 2021, Lai et al., 2009), animations enhance the clarity of information and prevent the risk of misinterpretations. Therefore, in the context of digital portfolios, animations can help clarify complex and intricate design processes. By incorporating animation into a portfolio, visitors could see the thoughtful decisions behind a designer's creative choices and understand that each decision is backed by deliberate decision-making, potentially gaining greater appreciation.

Online portfolios are crafted with the sole purpose of showcasing professional work and capturing the attention of visitors, and research by (Azahari et al., 2020, Lai et al., 2009, Hong, Cheung and Thong, 2021) suggest that the inclusion of animation proves to be a powerful tool in effortlessly grabbing the viewer's attention. In the world of portfolios, the emphasis is showcasing work and gaining traction efficiently. Therefore, employing a diverse range of media, particularly animated elements, becomes crucial in ensuring that content stands out against its static counterparts, contributing to a more compelling and memorable viewing experience.

Capturing the attention of viewers can be more effectively achieved through animations that evoke emotions or adopt a narrative approach, as revealed by (Azahari et al., 2020). Hence, incorporating animation into a webfolio may prove more effective if the graphical content follows a narrative structure. One illustrative approach could involve crafting a story around the design with the use of animated banners.

After discovering the insight from (Hong, Cheung and Thong, 2021), that animation is more effective when users are browsing rather than searching for a specific product, it stands to reason that animation can indeed prove highly effective in the context of a digital portfolio. This is particularly noteworthy considering many visitors to a site of this nature are likely engaged in casual browsing and exploring of the creator's work. However, for this strategy to work on a digital portfolio, it appears that a more subtle approach should be considered, as subtle animations tend to be more effective in sustaining the attention of visitors for a longer time.

Given that the primary objective of a portfolio is to captivate viewers entirely through visuals and aesthetics, it is important to maximise that appeal. Building on insights discovered from (Geng, 2016), recent trends suggest that adopting a 'flat' design approach proves effective in enhancing visual appeal without distracting or overwhelming the viewer. Therefore, incorporating flat motion design with a simplistic 2D approach becomes crucial. However, it is worth noting that this research stems from 2016, so some further trend analysis could be necessary, given the dynamic nature of design trends.

Of course, with most online applications, it is vital to consider the potential drawbacks associated with integrating motion graphics into digital portfolios and weigh them against the benefits. Reiterating findings from (Hong, Cheung and Thong, 2021), it's noted that motion graphics might contribute to higher website download times and remain invisible to search engines. Therefore, if a viewer is casually browsing a portfolio, the extended loading times could lead to frustration and turn them away. Because of this, it is crucial to optimise file sizes, favouring formats such as Lottie files, or GIFs under 1MB.

Results / Evaluation:

Looking ahead, an exploration into portfolios and online presentations featuring motion graphics appears to be crucial in developing this research. Diving into how individuals showcase their work through dynamic visual elements will provide a valuable perspective on the practical applications of motion graphics and how they might help create professional work appear more attractive and inviting.

To support this potential expansion of research, a comprehensive survey would be recommended. This survey should focus on information retention concerning motion graphics within online portfolios. It could investigate user opinions on elements that capture their attention, their level of engagement, and the recall of specific website features. This approach provides a qualitative understanding of user experiences and preferences related to motion graphics, particularly when browsing professional portfolios.

To understand the potential for additional research that can contribute to the discourse on motion graphics and their online applications, I have developed a flow chart highlighting several questions that could be explored through both primary and research approaches. Examples of these questions include: “Do motion graphics on an online portfolio enhance an employer’s attraction to the creators work?” and “how can designers ensure that portfolios remain accessible with motion graphics?” (Refer to Figure 4). Discovering the answers to these questions could seriously aid in a designers approach to their portfolio, creating a set of guidelines and key features that should be included.

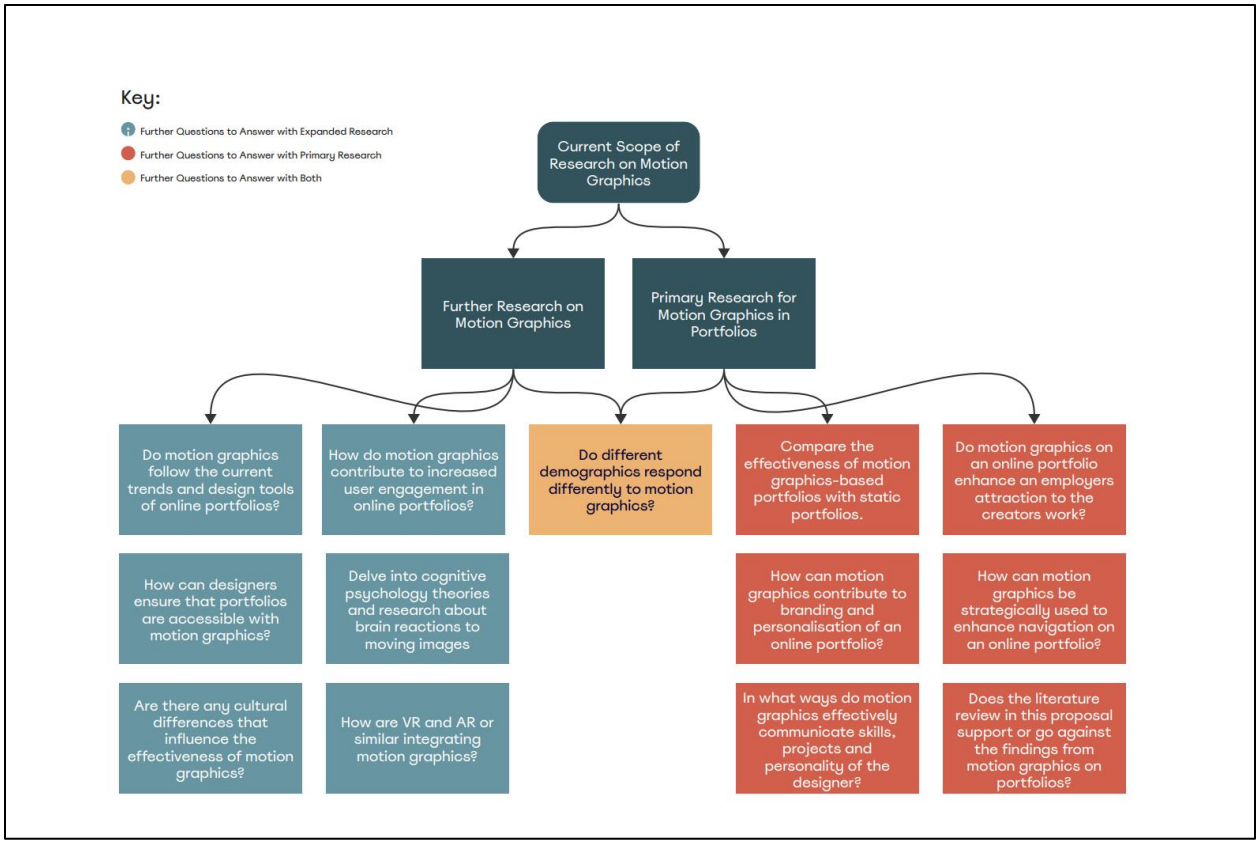


Fig. 4. A flowchart designed to dive into additional questions that could enhance the depth of discussion within this research proposal.

Conclusion:

In summary, the literature review has laid the groundwork for a valuable discussion, presenting various perspectives on motion graphics' effectiveness and challenges. For example, some key findings from the current scope of literature detail how utilising

motion graphics significantly enhances visual appeal and information retention which in turn captures user attention for longer periods of time. The proposed research going forward aims to bridge the existing gap by focusing on the impact of motion graphics in digital portfolios, a relatively under-explored area in current literature.

Therefore, in the upcoming semester, my primary goal is to practically apply what has been learnt and discussed in this proposal. To achieve this, I plan to create two websites - one employing static design elements and the other incorporating motion graphics and dynamic content. These websites will be developed using design tools such as Figma, with the possibility of being developed further using platforms like Webflow or Squarespace. The project will be accompanied by a comprehensive survey comparing user responses to both versions. This survey will assess factors such as user attention, engagement, and interaction preferences.

In preparation for the upcoming semester, I have devised a Gantt chart (Figure 5) like the one crafted earlier this semester for my research proposal. This detailed Gantt chart outlines the steps essential for the successful completion of this project, such as ideation, design, animation, development, and more.

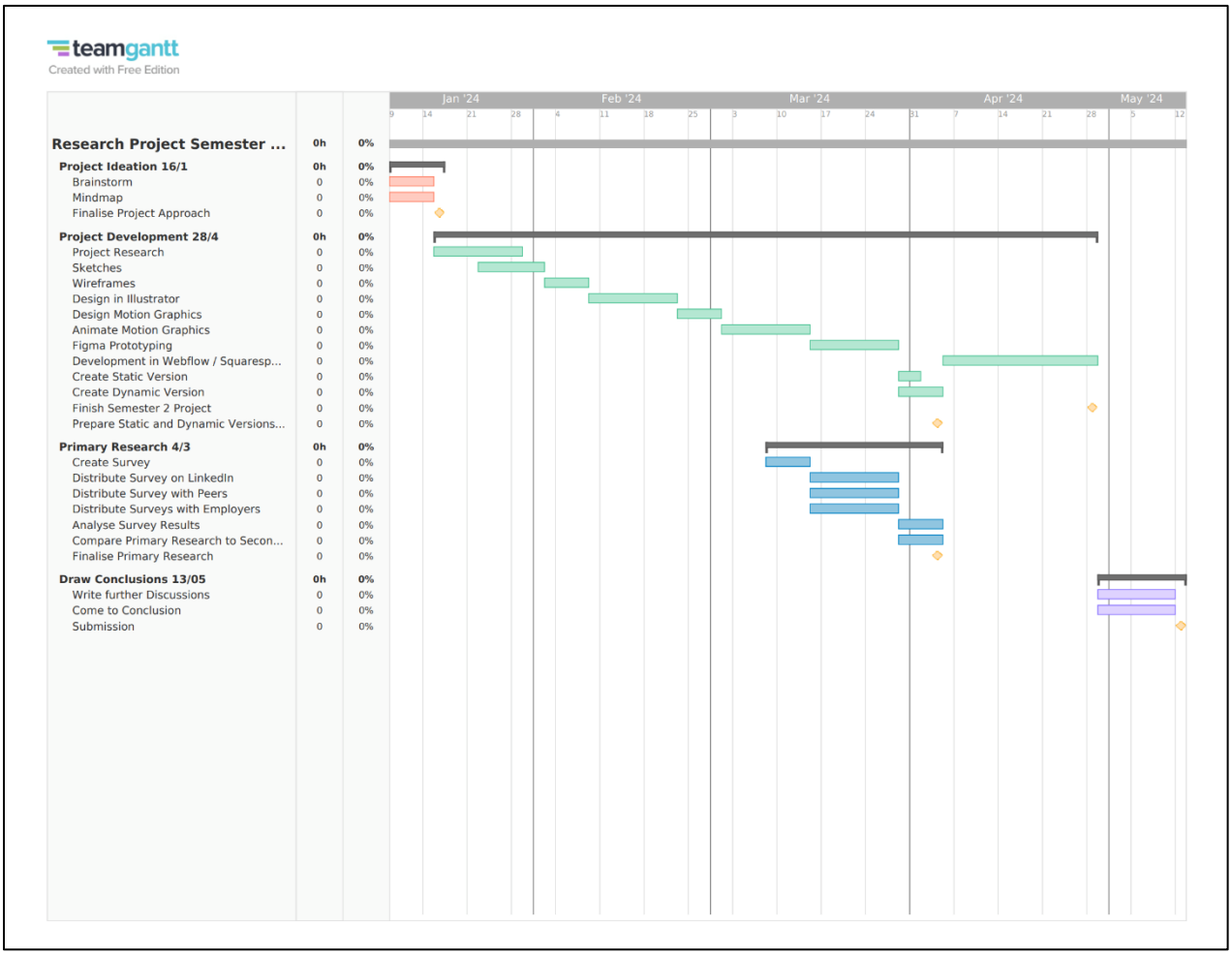


Fig. 5. A Gantt chart created using TeamGantt.com that details the proposed timeline and expected milestones for the project's development during the second semester.

Moreover, I've mapped out a rough timeline, predicting the optimal moments for accomplishing milestones within the project. This planning ensures the collection of primary research at an early state, enabling a smooth and swift process for survey responses. As the survey feedback is fundamental to contributing to this discussion around motion design, allowing for enough time for the survey to gain responses and analysis of the data collected is a priority.

By undertaking this practical project and gathering user feedback, I aim to contribute to the ongoing discussion about the online application of motion graphics, providing further insight that may help designers and other creatives understand the importance of utilising multimedia when showcasing their work to potential clients or employers.

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