



# EMOTIONS

A personal narrative of a  
dyslexic adult

With late diagnosis

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A thesis exhibition presented to OCAD University in partial fulfilment of the requirements for the degree of Masters of Design in Digital Futures

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## Abstract

My research project focuses on creating an interactive and accessible web experience consisting of personal stories of a dyslexic adult with late detection.

I share emotional and informational aspects of my personal stories about discovering being dyslexic as an adult and other aspects of dyslexia in an engaging manner for the audience. Through my research, I share my learnings, retrospections, and observations in the form of stories and provide a repository of valuable existing resources (videos, podcasts, books, and articles) to understand better the emotional and behavioural characteristics of a dyslexic adult. The inclusive design approach ensures an adaptive ecosystem, embracing diversity and differences and creating an accessible experience. The interactive documentary, narrative, and information visualisation layers represent personal data in a storytelling format.

Using the autoethnography method, I understand my relationship with dyslexia and its implications for me. The insights gained from the self-reflections and observations are visualised in an informative and interactive manner to share with the dyslexia community. The design research method helped structure the research process to create an efficient and practical design.

Using the iterative design process, I created an interactive web and mobile experience, which is a culmination of my own audio stories, multiple dyslexia-specific resources, and an inclusive format of customization



elements to enable accessible viewing for other dyslexic viewers from the community.

The main element of the project is to tell an audio-visual story that is relatable and provides an ability to enable people from the community to connect through my content. Through this project, I try to generate valuable takeaways for the dyslexia community or individuals after engaging with the interactive web experience and allowing them to help themselves better.

## **RESEARCH QUESTION(S)**

Primary question

- How might I create an interactive and inclusive digital experience of my narrative of being a dyslexic adult with a late diagnosis that is relatable, educational, and accessible?

Secondary question

How might I create strategies that foster other dyslexic individuals to engage and dialogue with my digital narrative?

Keywords

Dyslexia in adulthood, late diagnosis of dyslexia, autoethnography, Inclusive design approach, interactive narrative, accessible design principle, Dyslexia friendly digital experience, Information Visualisation, iterative design method

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# 1. Introduction

## 1.1 About thesis

The British Dyslexia Association adopted the Rose (2009) definition of Dyslexia:

Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Characteristics and features of dyslexia include difficulties in phonological awareness, verbal memory, and verbal processing speed. Dyslexia occurs across the range of intellectual abilities. It is best thought of as a continuum, not a distinct category, with no clear cut-off points. Co-occurring difficulties may be seen in aspects of language, motor co-ordination, mental calculation, concentration, and personal organisation, but these are not, by themselves, markers of dyslexia. A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to well-founded intervention.<sup>1</sup>

People with dyslexia do not outgrow it. People can be diagnosed with dyslexia at any age, and the testing for children and adults is different.<sup>2</sup> According to McLoughlin and Leather, "Adulthood is the longest stage of human development." (2)<sup>3</sup> There is a massive difference in challenges faced by an 18-year-old and a 45-year-old adult. Learning difficulties must be understood in context and age groups. A dyslexic adult is more than a grown-up child. It is essential to include the appropriate approaches, interventions, and accommodations to support a dyslexic in different stages of life.<sup>4</sup> Dyslexia occurs across a range of individuals, and its progression through

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<sup>1</sup>"About Dyslexia," British Dyslexia Association, accessed February 10, 2024, <https://www.bdadyslexia.org.uk/dyslexia/about-dyslexia/what-is-dyslexia>.

<sup>2</sup>Understood team, What is dyslexia?, n.d., <https://www.understood.org/en/articles/what-is-dyslexia>.

<sup>3</sup> David McLoughlin, and Coral Leather, *The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2*, (Auf. Newark: Wiley-Blackwell, 2013).

<sup>4</sup> McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2".

various stages of life differs vastly. There may be typical patterns or trends, but every individual experience dyslexia differently.

A dyslexic adult faces numerous differences, such as time management, organization skills, sequential ordering, numeracy skills, memory retention, and mental fatigue, often overlooked or forgotten. These differences frequently impact their social and mental states, as a result, affect their behavioural characteristics. Multiple adults with dyslexia face low confidence, low self-esteem, anxiety, frustration, depression, and anger, because of their differences.<sup>5</sup> Dyslexic adults face multiple environments or spaces of interactions, such as social, educational spaces, professional spaces, relationships, and marriage. People with dyslexia often tend to be rejected by peers in social settings, or they adopt self-isolation to avoid embarrassing situations.<sup>6</sup>

Dyslexia in adulthood is rarely a topic of conversation because it is seen as a disability for reading and writing rather than looking at it more holistically for individuals.<sup>7</sup> Dyslexia often occurs at different intensities in different individuals because it occurs in a spectrum, and its implications vary per individual. Dyslexia in adulthood is a complex concept because, as an adult, the room for errors is reduced, consequently making it a non-conducive environment for people with dyslexia.

In the case of late detection, the added layer of complexity arises from the emotional trauma of being unaware of it (dyslexia) in the early stages of life,

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<sup>5</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2".

<sup>6</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2".

<sup>7</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach. 2," Pg-2.

which leads to feeling perpetually confused and stupid.<sup>8</sup> The time spent not knowing about dyslexia earlier leads people with late detection to be the victim of other people's anger, frustration, and disappointment towards them (dyslexics). Moments of feeling inadequate in childhood and not being provided with a solution cause a massive scare. Being constantly afraid of performing certain task such as spelling, reading, and writing as it becomes with a challenge and causes a lot of embarrassment.

## 1.2 Personal Story

I want to share my story, and the impact late detection had on me before and after I learned I was dyslexic. A colleague who was aware of dyslexia suggested that I might be dyslexic. They observed the patterns and errors in my work and suggested I get tested. I met with a speech therapist and family neurologist who went through my session results and officially diagnosed that I have dyslexia. The diagnosis process included questions and situations where they analysed my responses.

My parents were present and listened to the doctor regarding my newfound cognitive disability, feeling helpless. While the diagnosis relieved me, it also allowed my parents to understand the difference it made to my abilities.

I asked my mother if she had noticed any differences in my capabilities, and she replied that she did not know enough to have seen me struggling with it. My mother shared this newfound knowledge about me with my aunt,

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<sup>8</sup> Jutta Treviranus, "Technologies and difference – Insights from the social justic repair kit project", (2021).

who ultimately dismissed the diagnosis, which further concretized the idea of not acknowledging or accepting my dyslexia. I do not hold it against my mother for not accepting my dyslexia, and I understand that she comes from a different world view. My diagnosis overwhelmed and relieved me, but it also helped me decode this new cognitive difference. I felt that my incompetencies and incapacabilities were not because I did not try hard enough but because I was not fully equipped to perform those specific activities to their fullest capacities. I began to forgive myself for being so hard and constantly judging my performance to improve and be more efficient in my daily life. I allowed myself to be me, make mistakes, and slowly learn and correct them. When the speech therapist could not help me with strategies or support, I was disheartened. As I was diagnosed in my adulthood, there was a lack of speech strategies. However, she helped me use supportive technologies to address common errors, such as typos or spelling. She also advised against informing my co-workers about my dyslexia. It was challenging to navigate this new information, and I searched for answers on the internet to help myself better, but I could not support myself.

I was vigilant of the activities and tasks I was doing, how they impacted my efficiency, and the results of those tasks. By being reflective and observant, I discovered that colour-coded analysis, better font, more time, and less pressure enabled me to achieve better results in terms of performance. I recorded and built on these observations and began embracing my differences by informing my manager, friends, partner, and a few colleagues who understood and supported my dyslexia. In the social context, I began to be vocal about my dyslexia, and I stopped apologising for

my behavioural traits, such as saying random words in conversations. I often used, 'Oh, this is my dyslexic brain doing its thing,' and people understood in some instances, allowing room for more errors.

This project stems from multiple personal instances and an urge to create a collection of personal stories and resources easily shareable with other dyslexic adults through an accessible digital experience.

### 1.3 Project Creation

This project is an interactive digital experience that presents my narrative of being a dyslexic adult with a late diagnosis and showcases its emotional implications as an individual.

This project intends to create a support system, through my personal stories and existing resources on dyslexia, for the people in the community. I struggled with finding stories and resources on dyslexic adults as information was scattered, demotivating me in my journey. When I engaged with the external resources on dyslexia, it helped me to understand deeper things and further decoded my dyslexia better for myself.

Through this project, I try to generate conversations with other dyslexic individuals as they are engaging with my stories and accumulating existing resources. It is a common approach in the dyslexic community to learn from pieces of evidence and lived experiences that can enable them to relate or retrospect with their own lives. My personal experiences and insights become a resource or support for the growth of the dyslexia community which is grounded in the recognition that every experience is different. A large part of



the support for the developing community of dyslexia is a validation of the difference and variability.

I am creating a digital tool that individuals from the community can easily access without any restrictions. The digital experience consists of both mobile and web versions which would be interactive and dyslexia friendly to accommodate everyone's needs and preferences.

## 1.4 Scope

This research project aims to:

- Understand dyslexia in adulthood, consequential behavioural traits, positive attributes, dyslexic in multiple environments, current pathological and societal portrayal (ref -2.2)
- Use an inclusive design approach and its dimensions, capturing examples of lived experiences approaches of other dyslexic individuals, the benefit of digital media providing customisable tools, and web accessibility principles for dyslexia(ref-2.3)
- Create the interactive documentary and narrative portrayal of the information via multiple possibilities of audio, visual, animation, films, and live feed format(ref-2.4)
- Study multiple examples of documentaries, narratives, and information-based web experiences for inspiration and design creation(ref-2.5)

The methodology is research-creation, as it allows the flexibility of artistic expression with the intersection of multiple fields (ref-3.1). The

extensive use of autoethnography (ref-3.2) to capture my lived experience of being a dyslexic adult, the design research method (ref -3.3), and iterative design (refer 3.4) are methods used in the research and design capabilities of the project.

The research focused on conveying my journey of dyslexia through stories and lived experiences through an accessible and interactive digital experience.

## 1.5 Limitations

There are a few limitations of the project, which are listed below:

- This project is currently limited to sharing my stories of dyslexia. Including stories from other dyslexic individuals would require a longer time frame.
- The medical perspective (ref-2.2.5) on dyslexia is argued and not considered in the entire project as it has a narrowed perspective of viewing disability as a condition to be cured. It is my view that medical field lacks a holistic approach, and ignores the behavioural, societal, and contextual impact of dyslexia on individuals.

## 2. Literature and contextual Review

This chapter contains the literature and contextual review explaining the project's structural base and inspirations. I discuss education psychology, dyslexia in adulthood, its implications for self, environments, and society, and an inclusive design approach with accessible digital experiences. I inquire into interactive documentaries and narratives with new media and digital experiences, highlighting the information layout, structuring, and visualization of data or stories.

### 2.1 Education Psychology

Dyslexia is considered a domain under educational psychology. There is a growing interest in neuro psychology and biology in the medical field.<sup>9</sup> Under the field of educational psychology, dyslexia is only considered as the part of learning disabilities that is connected to reading and writing, which does not represent its entire impact on the individual. This categorisation of dyslexia would not be accurate as dyslexia spans a lifetime and impacts individuals differently in different contexts. For dyslexic individuals, navigating multiple stages of life requires appropriate interventions as it does not happen naturally. Interventions and support are effective when they are specific and not generalised. "The evidence or examples should be relevant and particular." (xv)<sup>10</sup> For McLoughlin and Leather," an evidence-based

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9 Galaburda, Albert M, "Neurology of Developmental Dyslexia", *Current Opinion in Neurobiology* 3, no. 2 (April 1, 1993): 237–42. [https://doi.org/10.1016/0959-4388\(93\)90216-L](https://doi.org/10.1016/0959-4388(93)90216-L).

<sup>10</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2", (Aufl. Newark: Wiley-Blackwell, 2013), xv.

practise in psychology integrates the best available research with clinical expertise in the context of patient characteristics, culture, and preferences.” (8)<sup>11</sup>

The medical and scientific research continues to fail to provide a complete picture, given its vast variations.<sup>12</sup> Medical field focuses on dyslexia being a learning disability and does not encapsulate all the complexities of being a dyslexic adult. Therefore, this research focuses on taking a personal and evidence-based study. Evidence in this project focuses on the lived experiences, strategies adopted, cultural preferences, and characteristics of me, providing context and specific approaches adopted in a situation.

## 2.2 Dyslexic adult and its implications

Dyslexia in adulthood is intimidating and can be confusing. Adult dyslexics constantly try to determine why certain tasks are more challenging, why they cannot be efficient at the same level as others in particular context, and how to support themselves better.<sup>13</sup> There is a need to understand one's capabilities better and create adequate support to make learning and creation more conducive for adult dyslexics. The lack of better adult-specific resources and retrofitting children's strategies for adults are inappropriately generalised because adult dyslexia evolves with individuals as per different phases of their lives.<sup>14</sup>

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<sup>11</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2", 8.  
<sup>9</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," xvii.

<sup>13</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2", (Auf. Newark: Wiley-Blackwell, 2013).

<sup>14</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2".

As adults, individuals have multiple phases and roles performed in environments completely different from a child. Hence, the approach to having adult-based support is essential in addressing their complexities. It is essential to understand that dyslexia is more than a reading, writing, and spelling-based condition because it impacts memory, retention, organization skills, and time management in adults. Dyslexia is assumed to be more prevalent in children and, therefore, is often overlooked in adults. The manifestation of the intensity of adult dyslexia also varies across different phases of developmental stages and environmental demands. The complexity of adult dyslexia varies with ethnicities, cultural backgrounds, languages, and economic groups. Therefore, the need to have a more specific and self-reflective approach can be fruitful in decoding the various complexities. Maximum attention is given to children with dyslexia to minimize its impact on their adult life. However, the need for attention for adult dyslexia is equally vital as it evolves.<sup>15</sup>

The constant homogenous approach of 'one size fits all' is highly faulty and defies the concept of spectrum-based learning disabilities. The generalised intervention designs and support strategies do not work for everyone, and creating an individual-specific approach is possible with more retrospection of self-abilities. For adult dyslexics, the trial and error method is the best approach to self-assess and adopt support strategies. The shift

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<sup>15</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2".

among healthcare professionals and other allied resources is slowly diverging into an evidence-based approach to create customizable support.<sup>16</sup>

As stipulated by McLoughlin and Leather, the pillars of evidence make the self-assessment process holistic and specialized for dyslexic individuals (figure 1 below). The focus on an individual's characteristics, preferences, and circumstances has to be deeply examined through self-assessment and reflection to analyse the result with existing life evidence. Additional support from the professional covers the technical knowledge (expertise in dyslexia) and further helps in the decision-making process.

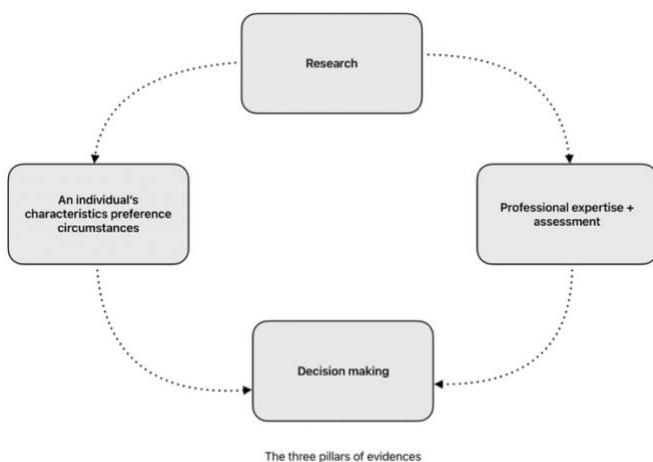


Figure 1: The Three pillars of evidence David McLoughlin & carol Leather, 2013

<sup>16</sup> David McLoughlin, and Coral Leather, " The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auf. Newark: Wiley-Blackwell, 2013).

### *2.2.1 Consequential behavioral characteristics*

Consequential behavioural characteristics tend to stem from the impact of being dyslexic in a non-dyslexic world, where it may create emotional traumas and low self-esteem, leading to affective behaviour in individuals. These emotions can have more impact on the individual than the difference of dyslexia as these characteristics can damage their personality and develop self-doubt. Self-doubt leads to isolation, which demeans the general personality of an individual. A significant impact of behavioural characteristics is a lack of confidence, low self-esteem, anger, frustrations, and anxiety.<sup>17</sup>

These affective characteristics are far more critical because it is challenging to resolve them, as teaching someone to read can be easier than improving their confidence.<sup>18</sup> Dyslexic individuals struggle with extreme self-doubt and have delicate confidence. In this project, I focus on emotional impact to showcase the implication of it on the individual. Sir Jackie Stewart, a former world-champion motorsports racing driver who is also dyslexic, describes his experiences as:

Wolf (2008) quotes a speech by former world champion racing driver Sir Jackie Stewart, in which he said, 'you will never understand what it feels like to be dyslexic. No matter how long you have worked in this area, no matter if your own children are dyslexic, you will never understand what it feels like to be humiliated your entire childhood and taught every day to believe that you will never succeed at anything.'<sup>19</sup>

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<sup>17</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auf. Newark: Wiley-Blackwell, 2013).

<sup>18</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," 13.

<sup>19</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auf. Newark: Wiley-Blackwell, 2013), 13.

### *2.2.2 Positive attributes of being dyslexic*

The abilities of dyslexic individuals are constantly undermined, and their creative and artistic traits are often overlooked. They are great at visualizing 3D objects and lateral thinking and can overcome problems by thinking laterally or approaching them unconventionally.<sup>20</sup> Dyslexic individuals can be great at making leaps in thinking by joining macro data points and processing the information quickly. Every dyslexic individual has different skill sets at various intensities, bringing variation among each gifted individual. There are multiple examples of entrepreneurs and innovators who have dyslexia, which gives them the edge to understand problems differently and see a more holistic approach.<sup>21</sup>

### *2.2.3 Dyslexia with late diagnosis in adulthood*

The diagnosis of dyslexia in adulthood can bring in a constellation of emotions ranging from relief to feeling overwhelmed and confused. The diagnosis of dyslexia is a pivotal piece of information for any dyslexic adult. From being diagnosed to embracing dyslexia is a considerable journey for every dyslexic individual, as it has been for me. Adults with dyslexia become adept in masking their dyslexia without realising it as they try to protect themselves and develop a defence mechanism to cope with different situations.<sup>22</sup> People with dyslexia can hide and mask their differences with

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<sup>20</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auff. Newark: Wiley-Blackwell, 2013).

<sup>21</sup> Petrova, Jillian. "The Many Strengths of Dyslexics." Accessed July 9, 2023, <https://dyslexiahelp.umich.edu/dyslexics/learn-about-dyslexia/what-is-dyslexia/the-many-strengths-of-dyslexics>.

<sup>22</sup> Jutta Treviranus, "Technologies and difference – Insights from the social justice repair kit project", (2021), 296.



high intelligence and tenaciously use compensatory strategies to deal with situations.<sup>23</sup> The implications of discovering dyslexia can be complex for individuals because the emotional stress of keeping up with societal expectations can subject them to negative perceptions, stereotypes, misunderstandings, and discrimination. Adults with dyslexia must navigate through multiple stages of their lives, from their careers to personal and social lives, which might require them to juggle various skills, which can be tiring for them to push against their superpower constantly.<sup>24</sup> Lack of support systems and acknowledgement of dyslexia amongst adults further pressurizes dyslexic adults to reflect and retrospect their differences and uniqueness. Unpacking the dyslexic way of thinking can be challenging and involve a lot of friction with existing systems.

#### *2.2.4 Dyslexic adults in different contexts/environments*

Dyslexia affects and empowers different realms of dyslexic individuals' lives. It impacts their school, workplaces, social interactions, and personal spaces, which are significant components of one's life.

**Educational environment** – Dyslexic individuals understand that processing information in a conventional way requires more effort and time.<sup>25</sup> They need additional supportive strategies to perform tasks and be at par with others. Multi-media support while teaching is essential for the better

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<sup>23</sup> Minnesota Neuropsychology, LLC, "Stealth Dyslexia: Introduction," March 7, 2021, [https://www.mnneuropsychology.com/articles/Stealth\\_Dyslexia.html](https://www.mnneuropsychology.com/articles/Stealth_Dyslexia.html).

<sup>24</sup> Lena W Carawan, Blace A. Nalavany, and Carol Jenkins, "Emotional Experience with Dyslexia and Self-Esteem: The Protective Role of Perceived Family Support in Late Adulthood," *Aging & Mental Health* 20, no. 3 (March 3, 2016): 284–94, <https://doi.org/10.1080/13607863.2015.1008984>.

<sup>25</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auffl. Newark: Wiley-Blackwell, 2013).

performance and memory retention of dyslexic students. Dyslexic students are better at audio-visual learning than text-based learning.<sup>26</sup> Higher education entails major transitions for dyslexic students, including moving away from home and losing an implicit structure they heavily relied on to perform adequately. Combining the independent lifestyle and academic progression can be challenging for them.<sup>27</sup>

**Work environment** – Through little empirical research, the disclosure rate of being dyslexic to employers still has some level of reluctance among individuals.<sup>28</sup> Some organisations have good accommodations and respond positively to the difference, whereas others tend not to acknowledge or do it at an obligatory capacity with inappropriate accommodations.<sup>29</sup>

Working efficiently and professionally with dyslexia does not seem like a barrier but a relief after a rigid school system with tests and examinations. Many professionals with dyslexia perform adequately in their workspaces, but some jobs are dyslexia friendly compared to others. Individuals who choose to tap into their strengths tend to be more comfortable in their workplaces and require less accommodation, whereas individuals who work against their strengths face hidden challenges connected to literacy at work.<sup>30</sup> Their lateral thinking abilities in certain situations allow them to ‘think outside the box’ and solve problems. Therefore, in particular conversations, they can draw

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<sup>26</sup> *The True Gifts of a Dyslexic Mind*, (TEDxMarthasVineyard, 2015), <https://www.youtube.com/watch?v=dPyzFFcG7A>.

<sup>27</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Aufi. Newark: Wiley-Blackwell, 2013),163.

<sup>28</sup> L.A Price, P.J Gerber & R. Mulligan, "To be or not to be learning disabled: A preliminary report on self-disclosure in adults with learning disabilities," (Thalamus 2005), 23, 18– 27.

<sup>29</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Aufi. Newark: Wiley-Blackwell, 2013),219.

<sup>30</sup> McLoughlin, and Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Aufi. Newark: Wiley-Blackwell, 2013).

connections between strange ideas and cause bewilderment among listeners.<sup>31</sup> These situations could make them seem odd or weird for others to interact with, isolating dyslexic individuals further. Advanced technologies, such as artificial intelligence, are not inclusive which makes these systems more biased against people with dyslexia.

**Social environment** – The difficulties in processing information can vastly interfere with social skills, specifically in social communication, whether speaking, reading, or writing. Imagine an instance when someone has trouble placing an order in a restaurant because they do not know how to read it or when someone does not participate in an argument or discussion due to a lack of particular vocabulary that they cannot recall at that moment or saying an incorrect word in a conversation, confusing people. These are common struggles for a dyslexic individual and can isolate them, keeping them from participating to avoid embarrassment or annoyance. For example, dyslexic individuals would be inclined to say, ‘Beat the bush about’ rather than ‘Beat about the bush’.<sup>32</sup>

**Personal environment** – It is essential to have a supportive family ecosystem as it influences self-esteem and enables adults to adapt to demanding and changing situations in adulthood. Families with more accepting phenomena should focus on supporting the adults to understand their niche and build on their strengths to reduce the difference.<sup>33</sup> Such

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<sup>31</sup> Neil Alexander-Passe, “Dyslexics: Dating, Marriage and Parenthood. 1st ed,” (New York: Nova Science Publishers, Incorporated, 2013).

<sup>32</sup> David McLoughlin, and Coral Leather, “The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2,” (Auff. Newark: Wiley-Blackwell, 2013),134.

<sup>33</sup> Lena W Carawan, Blace A. Nalavany, and Carol Jenkins, “Emotional Experience with Dyslexia and Self-Esteem: The Protective Role of Perceived Family Support in Late Adulthood.” *Aging & Mental Health* 20, no. 3 (March 3, 2016): 284–94, <https://doi.org/10.1080/13607863.2015.1008984>.

support systems do not exist for everyone. For example, questioning one's behaviours as incompetent highlights that the family has not accepted dyslexia. Disclosure and acceptance of close family members are essential for dyslexic individuals to feel safe in that relationship.<sup>34</sup> The acceptance and embracing of one's dyslexia by other members is critical for individuals to accept it entirely.

### *2.2.5 Current pathological and societal portrayal*

For medical studies, disability is a condition that needs to be cured, corrected, and normalised, enabling individuals to perform at their optimal level.<sup>35</sup> Alison Kafer explains this as "The medical model of disability frames atypical bodies and minds as deviant, pathological and effective, best understood and addressed in medical terms."<sup>36</sup> Literature shows emphasis in curing an individual of their disabilities rather than morally correcting the societal norms, processes, and policies to enable them with their differences to be fairly accommodated in society.

According to the medical model, disabilities exclusively belong in the medical sciences as it requires to be decoded, improved and provided care.<sup>37</sup> This categorisation of dyslexia as a medical problem further removes it from society, not addressing the societal issues or political movements rather treating it as a problem for resolution or eradication. Such attitudes reduce

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<sup>34</sup> Neil Alexander-Passe, "Dyslexics: Dating, Marriage and Parenthood. 1st ed," (New York: Nova Science Publishers, Incorporated, 2013).

<sup>35</sup> Alison Kafer, "Feminist, Queer, Crip. 1st ed," (Bloomington: Indiana University Press, 2013), 5.

<sup>36</sup> Alison Kafer, "Feminist, Queer, Crip. 1st ed," (Bloomington: Indiana University Press, 2013).

<sup>37</sup> Kafer, "Feminist, Queer, Crip. 1st ed, ".

diversity and inclusion in society and suppress the voices of the marginal and opportunities for an innovative future.<sup>38</sup>

### *Societal portrayal of dyslexia*

There has been an increased awareness and empowerment of dyslexic individuals, enabling them to perform well in their lives. Multiple readings and videos provide real-life examples and stories of success in business and innovation.<sup>39</sup> These inspirational stories also occur in specific environments and situations that do not consider poverty or the availability of resources, making it harder to advocate for individuals to have access to resources.<sup>40</sup> Success stories act as catalysts for dyslexic individuals to feel positive in a society that has undermined them and illustrate a better world for people with dyslexia by focusing on their strengths. These examples enable society to respect and cooperate more with dyslexic individuals. However, feeling empowered is followed by the pressure of achieving greatness. Constantly stating examples of Einstein, Richard Branson, Jamie Oliver, Nick Jones, and many other great minds and entrepreneurs who have achieved unattainable results causes intense pressure on dyslexic adults to find their passion and crave excellence. How is dealing with dyslexia without being pressured to

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<sup>38</sup> Kafer, "Feminist, Queer, Crip. 1st ed, ".

<sup>39</sup> Alison Coleman, "How Dyslexic Thinking Gives Entrepreneurs A Competitive Edge," (Forbes, Accessed October 7, 2023), <https://www.forbes.com/sites/alisoncoleman/2023/05/16/how-dyslexic-thinking-gives-entrepreneurs-a-competitive-edge/>.

<sup>40</sup> Jutta Treviranus, "Inclusive Design- Valuing difference, Recognizing complexity: Introduction, " (Singapore, Springer, 2023),17.

achieve greatness or being treated as an outsider in multiple environments possible? <sup>41</sup>

## 2.3 Inclusive Design Approach

The inclusive design approach is adaptive, with no set rules or criteria to measure success. Success depends on the individual's needs, goals, the system, and the context. Inclusive design is developed on three dimensions of value.<sup>42</sup> The three dimensions are human difference and variability, inclusive co-design process, and designing complex adaptive systems in flux.

### 2.3.1 Human difference and variability

The first dimension focuses on embracing the diversity and differences among individuals, which is their greatest asset. The uniqueness of the individuals' differences allows them to be an expert on their differences, creating innovative and generative explorations. <sup>43</sup> The value of an individual's lived experience is significant as it is unique and never identical to another individual. The lived experience contains multiple facets, such as identity, gender, age, ability, culture, and context, which add uniqueness to each person. Jutta describes individual variations as "All data about a person should be governed by the person, and the value derived from the data should vest with the person that is the subject of the data." (13)<sup>44</sup>

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<sup>41</sup> Kate Griggs, "(14) 5 Reasons Dyslexic Thinking Makes Great Entrepreneurs," (LinkedIn, Accessed July 9, 2023), <https://www.linkedin.com/pulse/5-reasons-dyslexic-thinking-makes-great-entrepreneurs-kate-griggs/>.

<sup>42</sup> Jutta Treviranus, "Inclusive Design- Valuing difference, Recognizing complexity: Introduction," (Singapore, Springer, 2023),10.

<sup>43</sup> Jutta Treviranus, "Inclusive Design- Valuing difference, Recognizing complexity: Introduction," (Singapore, Springer, 2023),11.

<sup>44</sup> Treviranus, "Inclusive Design- Valuing difference, Recognizing complexity: Introduction," 13.

The traditional design method of finding commonalities and reducing the differences ignores a wide variety and devalues the spectrum of diversity in order to create a profitable design. The inclusive design approach, however, embraces the spectrum to create an integrated, adaptable system.<sup>45</sup> The design should not be segregated as it would lack the flexibility to operate within the system and innovate within it (ref-3.2 for implementation in the project).

### *Lived-experience approach to better understand dyslexia*

Self-reflections and discoveries are essential to understanding one's capabilities and enabling the feeling of being in charge of every aspect of a dyslexic life.<sup>46</sup> For McLoughlin and Leather, the personal discovery of one's needs and preferences is essential to inclusive design.<sup>47</sup> For a dyslexic adult, it is crucial to understand one's strengths, differences, and uniqueness to achieve specialised support strategies and better navigate complex situations. The constant need to discover oneself and self-audit one's skill sets to better support oneself in different environments by setting goals, needs, and priorities becomes the only way to survive for dyslexic individuals.<sup>48</sup> A dyslexic adult's self-discovery and reflections on their performance lead to a better understanding of their needs and help them gauge an achievable task. Reflections and observations of their traits allow them to be prepared for the

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<sup>45</sup> Treviranus, "Inclusive Design- Valuing difference, Recognizing complexity: Introduction," 14.

<sup>46</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auffl. Newark: Wiley-Blackwell, 2013).

<sup>47</sup> "Insights | The Inclusive Design Guide The Inclusive Design Guide," Accessed October 17, 2023. <https://guide.inclusivedesign.ca/insights/>.

<sup>48</sup> David McLoughlin, and Coral Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auffl. Newark: Wiley-Blackwell, 2013).

possible lack of abilities and accommodate themselves in specific situations. Better awareness of their discovery enables them to communicate their differences, adjust in various environments, and generate more adaptative and flexible design solutions.<sup>49</sup>

### *Instances of dyslexic individuals sharing*

These lived experiences become a form of knowledge exchange among community members. There are a few remarkable instances from YouTuber Jo Crawford, podcaster Stephen Martin, and educational technology consultant Richard Wandermann. These individuals are dyslexic and successful, constantly sharing their knowledge and experiences with the community. They aim to spread awareness, share their discoveries, and offer general expertise in dealing with dyslexia. They use formats such as audio, video, and conferences to communicate with the audience, making their content accessible to dyslexic audiences. Their use of audio-visual media format to share information ensures their message has a broad and maximum reach and attracts a diverse audience.

### *Jo Crawford*

Her content comprises her personal stories, struggles, and interventions of being a dyslexic. She addresses her journey and her relationship with dyslexia through the video format. She began by making general videos on dyslexia, learning techniques for dyslexic individuals, why one should get tested for dyslexia, signs of being dyslexic and assistive technology for

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<sup>49</sup> "Insights | The Inclusive Design Guide The Inclusive Design Guide," Accessed October 17, 2023. <https://guide.inclusivedesign.ca/insights/>.



dyslexia, sprinkled with her discoveries and stories to contextualise the video. She talks about accessible journalism for people with dyslexia, as it is her area of expertise, and informs the audience about her strategies. These nuggets of information become extremely useful for a dyslexic viewer to connect better and relate with the content.<sup>50</sup>

She uses an audio-video format for easy accessibility for other dyslexic individuals. The mode of communication on YouTube is accessible and inclusive as it is not text-based.

### *Stephen Martin – Truth About Dyslexia*

The podcast Truth About Dyslexia focuses on helping dyslexic individuals and adults with ADHD deal with various challenging topics in their lives (below figure 2). The host and producer Stephen Martin discusses his journey towards managing, understanding, and becoming aware of how dyslexia affects him.<sup>51</sup>

He maintains each podcast episode between 6 and 12 minutes as they are easy to listen to for a neurodiverse audience with shorter attention spans. The topics of the podcast vary from:

- Coping with different phases of adulthood, such as employment, relationship, business, education, and social engagements
- Coping with emotional and mental well-being, such as dealing with feeling overwhelmed or lacking self-esteem

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<sup>50</sup> *My Dyslexia Journey*, 2020, <https://www.youtube.com/channel/UCh87oeQFzfos3oxE6Q3nZA/videos>.

<sup>51</sup> Dyslexia the Gift Blog. "Truth About Dyslexia," Accessed October 24, 2023. <https://blog.dyslexia.com/podcasts/truth-about-dyslexia/>.

- Positive attributes and discussing hidden traits of being dyslexic

He highlights different topics that help listeners decode and understand their reasoning for dyslexia and addresses logical reasoning behind specific ways of doing and being a dyslexic individual. Guest speakers, hosts, and experts in the field also appear on various episodes. His podcast has established an incredible community through its Facebook page support group and website. He actively fosters community learning and engagement to impact individuals meaningfully. His format of association is accessible, generative, and inclusive as it mainly focuses on the audio-based output, making it highly favourable.

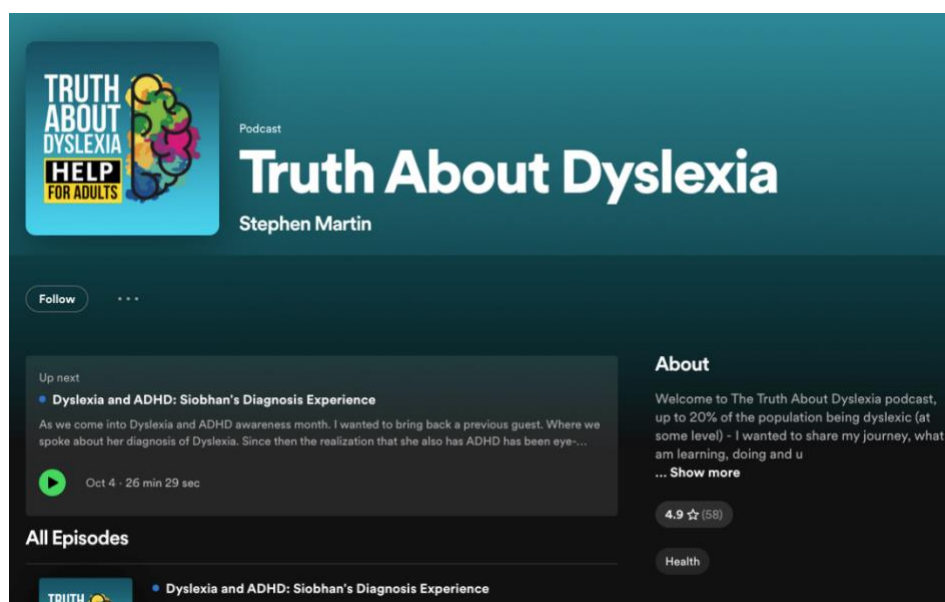


Figure 2: Screenshot from Spotify, Stephen Martin, via Spotify account

### *Richard Wanderman*

He was a writer and a consultant for children with dyslexia and was also a dyslexic adult. He appreciated the ease of typing over handwritten content because, as a person with dyslexia, writing was a difficult task. He realised he could write content without caring about his handwriting and extensively

advocated the idea of technology as a combination with dyslexia, as technology aided the process and provided the tools to focus on strengths rather than weaknesses. He encouraged using computers as they make recording one's ideas easier. It is easier to edit, change, and work with ideas on computers as they make publishing or sharing ideas easier.<sup>52</sup>

According to him, a computer makes writing more conducive as it is flexible and adaptive, which serves the purpose of catering to dyslexic individuals. This level of customisation allowed people with dyslexia to convey their thoughts through typing, practising their writing, or using text-to-speech to listen to their written content. He shared his knowledge and experiences in schools, educational institutes, and technological corporations to provide supportive strategies to children with dyslexia.<sup>53</sup>

He actively began engaging with topics on dyslexia in the 1980s, using talks and affiliations with schools and writing journals and articles.

Jo Crawford, Stephen Martin, and Richard Wanderman have shared their experiences and journeys as dyslexic adults through various media formats to communicate with the community, becoming primary sources of learning. McLoughlin and Leather support this by stating that people with dyslexia enable unique experiences at different intensities, where personal

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<sup>52</sup> Richard ,Wanderman, "How Computers Change the Writing Process for People with Learning Disabilities", LD online, 24<sup>th</sup> October 2023, <https://www.ldonline.org/your-stories/personal-stories/how-computers-change-writing-process-people-learning-disabilities>.

<sup>53</sup> Wanderman, "How Computers Change the Writing Process for People with Learning Disabilities", LD online, 24<sup>th</sup> October 2023, <https://www.ldonline.org/your-stories/personal-stories/how-computers-change-writing-process-people-learning-disabilities>

discovery and experiences become the primary sources of learning and sharing in the community.<sup>54</sup>

While creating any form of content, one should consider how the audience interacts with the material. The content created should be accessible for individuals such as Stephen Martin, who is conscious of the medium of engagement. Therefore, I chose to work with audio recordings of my personal stories, considering any dyslexic individual as part of my audience. Stories like Stephen Martin's inspired me to adopt this structure of storytelling.

### 2.3.2 Inclusive co-design process

The second dimension focuses on the inclusive design process by bringing the beneficiaries together to frame the problems and co-design the design process with the approach to address the challenges.<sup>55</sup> The codesigning exercise in the inclusive design research process is not predetermined; the research is designed collectively to ensure no exclusions. The aim is to create a diverse and flexible system that incorporates individuals' requirements on the edge of the spectrum.<sup>56</sup> The problem has no fixed solution as the context and environment keep evolving. The process of inclusive designing is continuous. It is an iterative process, which requires it to be evaluated by individuals with lived experiences and, in each iteration,

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<sup>54</sup> David, McLoughlin, and Coral, Leather, "The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2," (Auf. Newark: Wiley-Blackwell, 2013).

<sup>55</sup> Jutta Treviranus, "Inclusive Design- Valuing difference, Recognizing complexity: Introduction," (Singapore, Springer, 2023),10.

<sup>56</sup> Treviranus, "Inclusive Design- Valuing difference, Recognizing complexity: Introduction,"14.

provide their feedback and perspective (ref-3.2 for implementation in the project).

### 2.3.3 Designing a complex adaptive system in flux

The third dimension is understanding the complex adaptive system and unpacking the dependencies and the nest layers within the system. In the case of the project, dyslexia with late diagnosis becomes the complex adaptive system which is constantly evolving and the layers that impact it are the struggles, interventions, medical system, society, family, workspace, education, employer. These layers are also changing constantly and accounting for their change is essential to create an adaptive system.

Everything in the system is entangled and variable, which means it constantly changes, and a linear approach would not resolve the problem.<sup>57</sup> The system has multiple layers, and each layer is accounted for, or the concept of an accessible approach will disintegrate, considering that each layer in the system creates a sustainable system and reduces the chances of the threat of survival. The inclusive design approach creates new knowledge and reveals data gaps, past mistakes, and unmet needs, highlighting the missing perspectives.<sup>58</sup> The iterative approach to exploring potential possibilities leads to continuous improvement (ref-3.2 for implementation in the project).

Jutta mentions the importance of community "This usually entails open and transparent development that supports customization, user-continued

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<sup>57</sup> Treviranus," Inclusive Design- Valuing difference, Recognizing complexity: Introduction,"10.

<sup>58</sup> Jutta Treviranus," Inclusive Design- Valuing difference, Recognizing complexity: Introduction, " (Singapore, Springer, 2023),17.

design, and contributions from an open community.”<sup>59</sup> Therefore, the community space is an essential layer in dyslexia knowledge building.

### *Self-help groups and community*

Self-help groups provide a sense of community through shared experiences among members. Every member shares their experiences with coping strategies or pain points. These groups attempt to tackle problem-solving and mutually provide a circumstantial evidence-based support system. McLoughlin and Leather distinguish self-help groups from individual self-help in that they represent a mutual helping process, with members supporting and helping others while simultaneously helping themselves.<sup>60</sup> This support system can provide different elements of personal discovery than professional help. The community creates a sense of togetherness and eliminates the feeling of isolation.

These are the dimensions of inclusive design approach that is an essential structural aspect of this project and the basis of the autoethnographic method.

In this project, the first dimension is represented by adopting an auto-ethnographic approach to reflect on personal experiences recorded as audio stories. The second dimension is reflected in cocreating intervention strategies derived from my existing ones, which are adaptive and evolving. It is presented at each story level to showcase my support interventions in different situations. The third dimension is captured through auto-

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<sup>59</sup> Treviranus, “Inclusive Design- Valuing difference, Recognizing complexity: Introduction,” 18.

<sup>60</sup> David McLoughlin, and Coral Leather, “The Dyslexic Adult: Interventions and Outcomes; An Evidence-Based Approach 2,” (Auffl. Newark: Wiley-Blackwell, 2013), 272.

ethnographical reflections, which unpack multiple layers of environments, emotions, differences, and intensities. These various layers are used as filters in the project to showcase the multiplicities of the stories and their impact.

### 2.3.4 Benefits of Digital Media

With the emergences of digital media, the convenience of accommodation provided tools and flexibility to the individual on spectrum to make changes as per their requirements. The range of options with digital technologies is more inclusive than the traditional print media.<sup>61</sup>

Specificities and specialised tools for everyone allow individuals to shine in their area of work. A 'one size fits one' removes the barriers and creates specialized design solutions to include every user through the margins.<sup>62</sup> The adaptability of design solutions creates these possibilities to morph, evolve, stretch, and generate a more integrative system. Dave L. Edyburn states that "good design for people with disabilities benefits everyone." (2)<sup>63</sup>

### 2.3.5 Web accessibilities for dyslexics

Regina states in her book, "Accessibility is essential for developers and organisations that want to create high-quality websites and web tools and not exclude people from using their products and services W3C." (22)<sup>64</sup>

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<sup>61</sup> Dave L. Edyburn, "Universal design for learning, *Special Education Technology Practice*, 7(5), "2005, 16-22.

<sup>62</sup> "One-Size-Fits-One | The Inclusive Design Guide The Inclusive Design Guide," Accessed October 24, 2023, <https://guide.inclusivedesign.ca/insights/one-size-fits-one/>.

<sup>63</sup> Dave L. Edyburn, "Universal design for learning, *Special Education Technology Practice*, 7(5), "2005, 16-22,2.

<sup>64</sup> Regina M. Gilbert, "Inclusive Design for a Digital World: Designing with Accessibility in Mind," (NewYork: Apress,2019),22.

Creating accessible websites for dyslexic individuals requires focusing on certain primary principles and, most importantly, the scope of personalisation for each person with dyslexia. Dyslexia is a spectrum condition, and everyone has different needs on the spectrum depending on their struggles. Throughout the research, I ensure that I follow the UX primary principles and design guidelines for websites with dyslexia, specifically to enable users (viewers) to create their own experiences as frictionless as possible per their requirements.

Regina M Gilbert proposes the following Inclusive Design User

Experience principles:<sup>-65</sup>

- Give users choices – We should stop assuming how the user should access the content rather than provide them with a choice to adjust or choose as per their preferences and conveniences.
- Put users in control – Allow users to have control and flexibility, such as allowing them to zoom the website or giving them a chance to press play instead of having auto-play.
- Design with familiarity in mind – The balance between the new and familiar design on websites and apps is essential while designing. Following the standard UI components for the apps is necessary as they have built-in accessibility.
- Prioritize features that add value – The features that resolve specific accessibility issues will also create a richer and easier experience for the other users.

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<sup>65</sup> Regina M. Gilbert, "Inclusive Design for a Digital World: Designing with Accessibility in Mind," (New York: Apress, 2019), 173.



Regina M Gilbert proposes the guidelines for designing web pages and mobile for dyslexic individuals: – <sup>66</sup>

- Use of simple words
- Use of dyslexia-friendly font
- Use of flexible font size
- Use of appropriate background colour
- Proper colour contrast (followed with W3G)
- Use of appropriate line spacing
- Use of appropriate text hierarchy
- Use of zoom feature
- Use of text-to-speech feature
- Use of distinguishable actionable elements (e.g.,-links)
- Use of multi-media format to convey messages (video, audio)
- Actionable links are easily distinguishable
- Appropriate spacing between active and inactive elements
- The touch target size must be large enough to touch accurately
- The structure should have a logical and hierarchical heading structure and content

These guidelines allowed me to create a holistic digital experience (for mobile and web). Providing more customizable options with these features can create multiple permutations and combinations, enabling users (viewers) to personalize their experiences. By embracing emerging

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<sup>66</sup> Regina M. Gilbert, "Inclusive Design for a Digital World: Designing with Accessibility in Mind," (New York: Apress, 2019), 96, 180.

technologies, various avenues exist to convey information instead of leading with only a text-based communication.<sup>67</sup>

The increasing use of audio and video-based formats for consuming content and information enables many dyslexic individuals to overcome the reading barrier. The aim is to create a multi-media experience that is highly customizable and accessible for dyslexic adults.<sup>68</sup>

## 2.4 Interactive documentaries and narratives

The definition of interactivity is complicated as it depends on the medium and the flexibility provided by it. The other influencing factor is the engagement of the reader/viewer with the narrative, which can be between two people, a person and a medium, or between a person or the message.<sup>69</sup> The new media advancements have provided opportunities for multiple mediums and ways of engagement to create endless possibilities for narrative presentations.

Digital storytelling and documentaries have given individuals the power to record and share their stories and the agency of framing, expanding, and making personalised digital narratives.<sup>70</sup> Focusing on personal narratives and marginalised voices spreads awareness of less familiar and unique topics. The newer technologies and their multiplicities have made everyone a

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<sup>67</sup> Susie, Gronseth, "Inclusive Design for Online and Blended Courses: Connecting Web Content Accessibility Guidelines and Universal Design for Learning," (*Educational Renaissance* 7, 2018), 14.

<sup>68</sup> Peter, Coppin, "Using Dyslexia to Explore the Cognitive Characteristics of Illustrations and Text; Using Illustrations and Text to Explore the Cognitive Characteristics of Dyslexia," (2009).

<sup>69</sup> Melanie C. Green, Keenan M. Jenkins, "Interactive Narratives: Processes and Outcomes in User-Directed Stories," *Journal of communication* 64, no. 3 (2014), 479–500.

<sup>70</sup> Dean keep, "Database Documentaries: New Documentary Practices in Emergent Narrative Spaces and the Classroom," (September 18, 2015).

director, writer, technician, and producer of their stories. The easy accessibility of the platform and base of communication amongst other viewers/audiences becomes an excellent motivator for a creator to leap into creation and sharing. According to Burdick et al., database documentaries are:

Modular and combinatoric, branching and hypertextual, often structured more like a multimedia prose piece than a film. Consisting of a series of tracks through an actual or virtual database, the documentary can be built out of a wide range of media types: not just film and video, but also sound, static image, text, animation, actual documents (or their digital equivalents), even live or dynamic feeds from the World Wide Web. Database documentaries are multi-linear. They are not watched, but rather performed by a reader/viewer who is provided with a series of guided paths; and, unlike the cinematic documentary, which is free-standing, database documentaries may be built on multiple, overlapping databases.<sup>71</sup>

The interactive documentaries have multiple formats, from audio, visual, and animation, with dynamic features, which have created a more engaging platform for the reader/viewer. Various formats have enabled multiple exits and entry points, challenging the linear beginning, middle, and end format. By familiarizing themselves with new media technologies and unlocking new possibilities for interacting with them, the agency of creators generates creative/hybrid documentary forms.<sup>72</sup>

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<sup>71</sup> Anne, Burdick, Jane, Drucker, Peter, Presner, Todd, and Schnapp, Jeffrey, "Digital Humanities. London" (The MIT Press, 2012), 54.

<sup>72</sup> Dean keep, "Database Documentaries: New Documentary Practices in Emergent Narrative Spaces and the Classroom," (September 18, 2015).

The following three examples capture different types of narrative structures and interactions.

The 'After the Storm' project is linear yet has rich media, which inspired me to incorporate audio-visuals, characters, and colours, and make them interactive to engage the viewer. An audio first-person approach is intimate and immediately helps connect with the creator. The 'Prison Valley' project allows users to explore and create their journey within the experience freely. It inspired me to create an experience where every viewer could have the liberty to create a personal journey. The project has nuggets of information and a navigational bar, which assists the user throughout the experience. Similarly, I ensured that the navigational bar was consistent throughout my project. The 'Vimy' project categorises the stories/testimonies into different themes and allows the viewer to navigate them via choices. The visual aesthetics and ambiance of the experiences match the theme of the experience. Therefore, I created similar categories for the stories and tried to use constant visual language.

#### *2.4.1 After the Storm - Linear Narrative and Navigation with Semi-open Interactions*

Through the project, I discovered an interactive documentary written and directed by filmmaker Andrew Beck Grace after surviving a tornado disaster in 2011. 'After the Storm' is a documentary on a lived experience and personal narrative, focused on describing the experience of surviving the tornado and addressing disaster survivors.

The documentary is a first-person audio narrative with videos, newspaper clippings, images, interviews, animations, and data visualisation, creating vivid imagery of the incident. The variety of formats paints a holistic experience for the viewer. The documentary voice-over is an intimate and emotional experience guiding the viewer.<sup>73</sup>

A linear narrative framework paints a timeline of events: we watch the tornado destroy homes, people surviving, and the aftermath of a natural disaster. The element of interactivity involves scrolling across the experience, using clickable artifacts and video clips to provide agency to the viewer shown in figure- 3 & 4. The agency of user control is directly proportionate to freedom in the interactive experience.<sup>74</sup> The interactivity is limited yet rich in media, which is collaged to make it a comprehensive experience.

The aim was to have a seamless and intuitive navigational system for the viewer. Though the experience was linear, a map of the different chapters allowed the user to jump or revisit different sections, generating a different simulation of the path for the experience. Such experiences may serve as education and entertainment for the viewer as they can be 'engaging and persuasive'<sup>75</sup> formats to allow more fertile ground to gain a richer understanding of the narratives.<sup>76</sup>

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<sup>73</sup> "Independent Lens and The Washington Post Launch First Joint Online Distribution Venture, After the Storm - The Washington Post." Accessed October 24, 2023, <https://www.washingtonpost.com/pr/wp/2015/04/27/independent-lens-and-the-washington-post-launch-first-joint-online-distribution-venture-after-the-storm/>.

<sup>74</sup> Melanie C. Green, Keenan M. Jenkins, "Interactive Narratives: Processes and Outcomes in User-Directed Stories" *Journal of communication* 64, no. 3 (2014), 479-500.

<sup>75</sup> Melanie C. Green, Keenan M. Jenkins, "Interactive Narratives: Processes and Outcomes in User-Directed Stories" *Journal of communication* 64, no. 3 (2014), 479-500.

<sup>76</sup> Melanie C. Green, Keenan M. Jenkins, "Interactive Narratives: Processes and Outcomes in User-Directed Stories" *Journal of communication* 64, no. 3 (2014): 479-500.

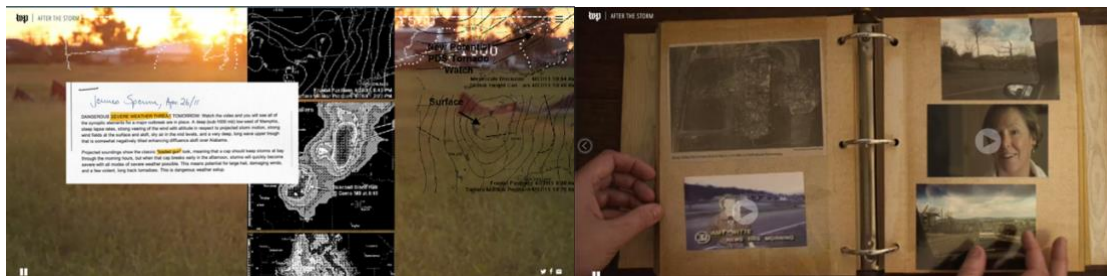


Figure 3 Image shows the snippets of stories with rich media of video and clips, *After the Storm*, Andrew Beck Grace via the official website -<https://whatcomesafter.org/#/dear-future-disaster-survivor> (left to right) (permission granted)

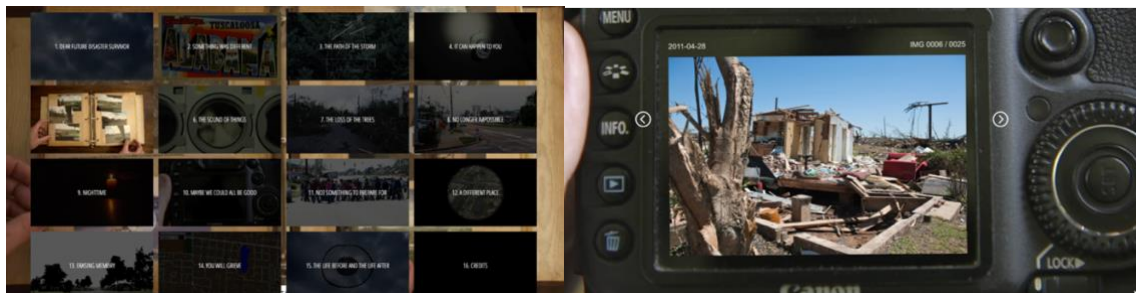


Figure 4 Image shows the map of the experience and media depiction, *After the Storm*, Andrew Beck Grace via the official website -<https://whatcomesafter.org/#/dear-future-disaster-survivor> (left to right) (permission granted)

## 2.4.2 Prison Valley- Branching Narrative with Non-linear Navigation and Open Interactions

This web-based interactive documentary focuses on a 'Prison Valley' in Colorado. The main character is an investigative journalist in the valley, learning about the workforce, inmates, imprisonment, prison, and the industry. The project was created by French journalist David Dufresne and photojournalist Phillipe Brault, who have exhibited their documentary on various platforms.<sup>77</sup>

The documentary is set up as a road trip with multiple detours, involving interviews of other characters and exploring environments with information connected to various artifacts. The experience contains audio, visuals,

<sup>77</sup> Inge de Leeuw, "The 6 Most Innovative Interactive Web Documentaries." Accessed October 24, 2023. <https://www.vice.com/en/article/xyvmyd/the-6-most-innovative-interactive-web-documentaries>.

characters, videos, news clippings, and data points regarding the subject to provide context and background for the user as shown in figure 5 below.

The narrative pattern has a main storyline, but the numerous detours provide supplementary information and offer the viewers agency to choose their experience. The multiple detours branch into story components within the experience. Users can choose their detours and collect information without compromising the main storyline. Prison Valley's navigation allows users to freely explore the valley and create their journey within their storyline to enable adequate control.

The interactivity in the documentary relies heavily on the cause-effect and immediate response to the character in the experience. The importance of 'point and click' impacts the storyline or the user's journey within the experience.<sup>78</sup> Being responsible for the storyline and defining the character's journey impacts the user's level of engagement.<sup>79</sup> With increasing media resources, documentaries now have the flexibility for users to generate experiences.

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<sup>78</sup> Judith, Aston, Sandra Gaudenzi, and Mandy Rose, "I-Docs: The Evolving Practices of Interactive Documentary," (La Vergne: Columbia University Press, 2017).

<sup>79</sup> Melanie C. Green, Keenan M. Jenkins, "Interactive Narratives: Processes and Outcomes in User-Directed Stories" *Journal of communication* 64, no. 3 (2014): 479–500. <https://whatcomesafter.org/>

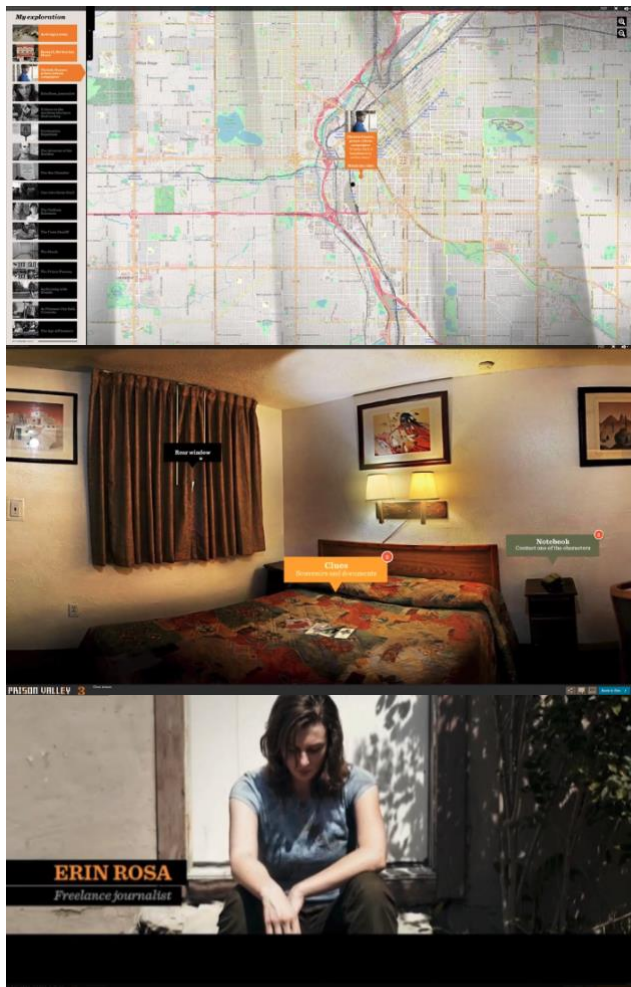


Figure 5 Map of experience, explore the room, stories, Prison Valley, David Dufresne & Phillipe Brault, via official website-  
<http://prisonvalley.artetv/flash/#en> (top to bottom)(permission granted)

### 2.4.3 Vimy – Virtual Memorial – Branching Narrative Non-linear Navigation and Open Interactions

The virtual memorial created by Anne Lagace, Gonzalo Soldi, Claude Guilmain, and Sylvain Bellemarre aims to create a digital pilgrimage to document the selected testimonies of war survivors and allow the viewers/visitors to reflect on their relationship with the war.<sup>80</sup>

This project creates a visual aesthetic of a soft and hazy landscape, representing the ‘Vimy’ memorial in the background. Testimonies by civilians

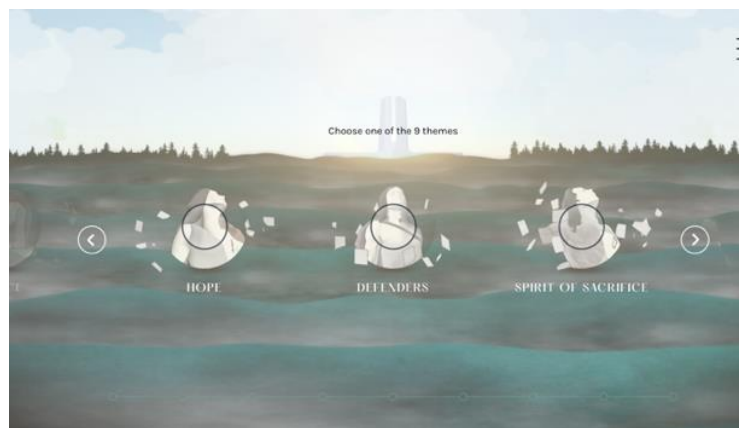
<sup>80</sup> Canada, National Film Board of Canada, “About | Vimy: A Living Memorial – The Digital Pilgrimage.” National Film Board of Canada. Accessed October 24, 2023, [https://www.nfb.ca/interactive/vimy\\_digital\\_pilgrimage](https://www.nfb.ca/interactive/vimy_digital_pilgrimage).



or members of the military from different areas are presented in the form of audio, videos, or written stories, distributed into nine themes for the audience/viewer to interact. Visuals and a textual introduction preface the concept for the viewer shown in Figure 6. The nine themes give viewers a layer of control and agency to choose their stories and path in the experience. The interactivity in the journey allows users to decide the direction of the narrative and the freedom to navigate in the experience as shown in figure 7 & 8.<sup>81</sup> Ultimately, the experience enables users to provide their testimony by contributing to the collective heritage.



Figure 6 Introduction page and setting context, *Living Memorial*, Anne Lagace, Gonzalo Soldi, Claude Guilmain and Sylvain Bellemarre, Introduction via official website- [https://www.nfb.ca/interactive/vimy\\_digital\\_pilgrimage](https://www.nfb.ca/interactive/vimy_digital_pilgrimage) (left to right) (permission granted)



<sup>81</sup> Melanie C. Green, Keenan M. Jenkins, "Interactive Narratives: Processes and Outcomes in User-Directed Stories" *Journal of communication* 64, no. 3 (2014): 479–500.



Figure 7: Themes assigned to each type of story, *Living Memorial*, Anne Lagace, Gonzalo Soldi, Claude Guilmain and Sylvain Bellemarre, Themes sections via the official website- [https://www.nfb.ca/interactive/vimy\\_digital\\_pilgrimage](https://www.nfb.ca/interactive/vimy_digital_pilgrimage) (permission granted)

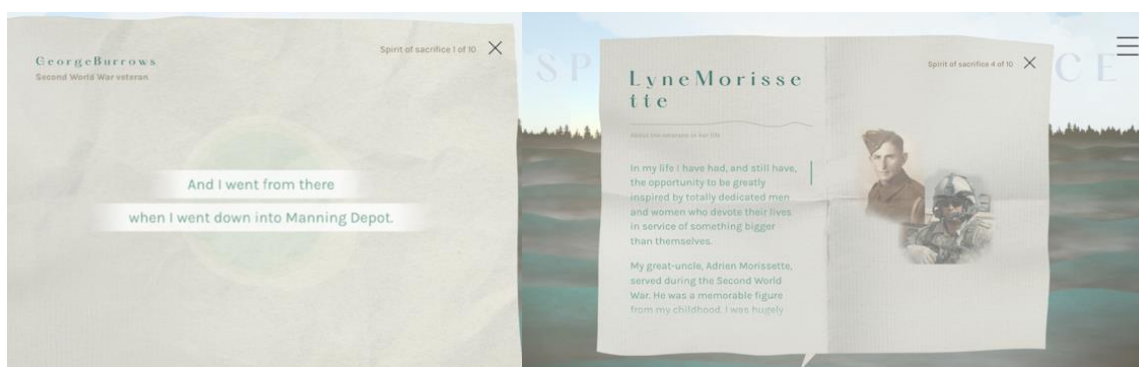


Figure 8 : Type of stories audio and written, *Living Memorial*, Anne Lagace, Gonzalo Soldi, Claude Guilmain and Sylvain Bellemarre, Themes sections via the official website- [https://www.nfb.ca/interactive/vimy\\_digital\\_pilgrimage](https://www.nfb.ca/interactive/vimy_digital_pilgrimage) (left to right) (permission grant)

Interactive narratives and documentation can have active qualities to create immersive experiences for the viewer/audience. “Transportation into narratives are defined as cognitive and emotional immersion in the story, accompanied by vivid mental imagery.”<sup>82</sup> Such narratives immensely impact users, enabling them to have a reflective and transformative experience. Connecting the content through interactivity is a perfect way to convey the message. These narratives show users multiple ways of branching and achieving navigational freedom. I have also branched and connected

<sup>82</sup> Melanie C. Green, Keenan M. Jenkins, “Interactive Narratives: Processes and Outcomes in User-Directed Stories” *Journal of communication* 64, no. 3 (2014): 479–500.

different stories within my project. The open interactions and navigations allow the user to explore freely, which is another major structural implementation in my project's design, including multiple media types and maintaining thematic visual aesthetics.

## 2.5 Information Structuring and visualisation

Presenting information in a manner that is accessible and easily understandable for the viewers/audiences is essential. Information layout and visualisation are vital as they enable the audience to connect with emotions rather than just presenting data with numbers.<sup>83</sup> This space allows the freedom to explore and experiment with information and its communication. 'Yesterday, Today and Tomorrow' an extensive data set in an accessible manner.

This project was one of the best examples of using emotions as a data representation and segregation, which became my project's primary source of inspiration. They used large data sets and filtered them with emotions, timelines, and other topics, which was an interesting way of utilising filters and providing information. I have adopted a similar structure of data filtration in my project, such as emotions, timeline, and environment, and with the permutation of these filters, generated new information. I was inspired by the simplicity of interactions and navigational structure of 'Yesterday, Today and Tomorrow', which was impactful and engaging. While brainstorming the

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<sup>83</sup> Nathan Yau, "Data Points : Visualization That Means Something", (John Wiley & Sons, Incorporated, 15-04-2013).

design, I maintained a similar design feel by decluttering it and ensuring a constant navigational system and simple interactions.

### *2.5.1 Yesterday, Today and Tomorrow*

This is a great representation of large sum of data filtered primarily by the focus of using emotions. The creators are a team from 3Jam studio who have created an experimental visualisation of emotional impact of pandemic amongst the masses. They have focused on bringing the feelings and sentiments of the people in the foreground to address the wave of emotions with the pandemic. The use of AI to process thousands of Tweets and finally creating a structure which is segregated through emotions. The creators have adopted colour codes for emotions to create a visible filter to view the data. The team with the power of AI have identified 9 topics of discussion which became another form of filter for the audience to be able to easily as well as extensively view all spectrum of information.<sup>84</sup> This experience has adopted simple filtrations method to enable control and also the power to explore through the experience easily. The creators have added micro animation to bring smaller joys within the experience for the user such as hover animation, using of blob like shape for information, using of soothing music, simple interactions. I have been influenced to use filters as a mechanism of segregation and using micro responsive interactions.

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<sup>84</sup> Mind Inside and Jam 3, "Yesterday, Today, & Tomorrow, n.d.,"<https://www.nfb.ca/interactive/yesterday/>.

### 3. Methodology & Methods

This chapter consists of the methodology of the project and significant methods adopted for the successful completion of the project. I use research-creation and autoethnography to capture my reflections and stories. To create, I have used the design research method and iterative design method to complete the research and design aspects of the project.

#### 3.1 Research Creation

For this project, research creation was the primary research methodology. Research creation is defined as an amalgamation of creative and academic research practises to enable the development of knowledge and innovation through artistic expression, scholarly investigation, and experiments.<sup>85</sup>

I employ the ideology of a self-reflective personal approach to better decode dyslexia in adults and an inclusive design approach, which is layered with my experience as a dyslexic adult with a late diagnosis. For the project, I have designed an interactive and accessible digital experience to represent the emotional and behavioural characteristics through my stories as a dyslexic adult and catalogued additional resources about dyslexic adults/individuals through existing knowledge. The method of autoethnography is used to capture lived experiences, using web accessibility rules for dyslexia (ref- 2.3.5) and interactive documentary style (ref-2.4)

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<sup>85</sup> Government of Canada, Social Sciences and Humanities Research Council of Canada. "Social Sciences and Humanities Research Council," May 11, 2012. <https://www.sshrc-crsh.gc.ca/funding-financement/programmes-programmes/definitions-eng.aspx#a22>.

engagement for the viewers to create design guidelines. This methodology has allowed me to add layers and create interdisciplinary insights into different fields, developing a more holistic research approach for the project. The research-creation process allows the artist the possibility of creative renewal, experimentation, and professional development and research.<sup>86</sup>

### 3.2 Autoethnography

I received approval from the Research Ethics Board on 17<sup>th</sup> November 2023; my file number is 102444. I received permission to inquire about myself with adequate precaution effectively and have attached the personal informed consent form (Appendix A :Personal REB, 1). I interacted with my family and friends to better understand myself, and I have attached the consent form and questionnaire (Appendix A: Personal REB, 2).

Autoethnography is the practise of understanding an individual's identity and working on it deliberately to decode their representation within or exceeding the society.<sup>87</sup> This method enabled me to understand my dyslexia better and unpack its connections in society. Dyslexia occurs in a spectrum. Therefore, every individual on the spectrum has a distinct experience. Every dyslexic individual encouraged to record and assess their dyslexia to better support themselves. The ability to share their findings becomes a goldmine of insights (evidence) for people in the community.

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<sup>86</sup> Natalie Loveless, "How to Make Art at the End of the World: A Manifesto for Research-Creation. 1st ed," (Durham: Duke University Press, 2019).

<sup>87</sup> David Butz, and Besio Kathryn, "Autoethnography," (*Geography compass* 3, no. 5 2009), 1660–1674.

Autoethnography is a method that reduces the crisis of representations as it motivates researchers to acknowledge their identities, lives, beliefs, feelings, and relationships and report the findings.<sup>88</sup> This method encouraged me to record my stories and personal observations, which brought back the emotions felt during the incident took place, coating the experience with an emotional component. The physical experiences and embodiments are intertwined with the emotions because including emotions makes one an honest researcher.<sup>89</sup> I am more confident in documenting my experiences in depth than talking on behalf of others. In this method, the constant tension of having the outsider and insider perspective regarding social practice and social constrain remained.<sup>90</sup> The deeper analysis of the self consequentially made me more empathic towards myself and created a space to critique cultural beliefs, practises, and experiences.

The figure 9 below showcases the connections between the autoethnography method and inclusive design approach across all the three

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<sup>88</sup> Tony E Adam., Stacy Linn, Jones Holman, and Ellis Carolyn, *"Autoethnography,"* (New York, New York: Oxford University Press, 2015).

<sup>89</sup> Tony E Adam., Stacy Linn, Jones Holman, and Ellis Carolyn, *"Autoethnography,"*(New York, New York: Oxford University Press, 2015).

<sup>90</sup> Tony E Adam., Stacy Linn, Jones Holman, and Ellis Carolyn, *"Autoethnography,"*(New York, New York: Oxford University Press, 2015).

dimensions.

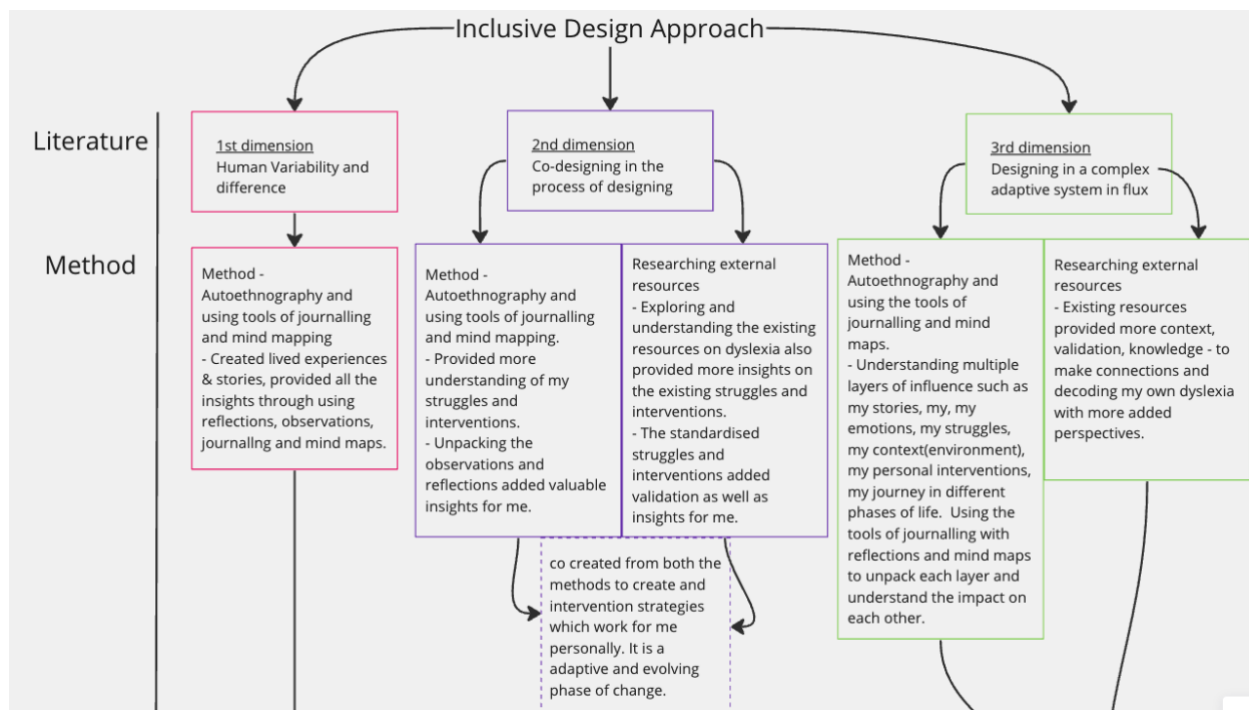


Figure 9: Inclusive design approach relations with method autoethnography (ref Appendix:G for more) Author image

The three dimensions of inclusive design relates to autoethnography as the core of lived experiences is rooted in self-reporting your experiences. The following dimensions are human variability and difference, co-designing in the process of designing and designing in a complex adaptive system in flux are listed below:

- The first dimension of the inclusive design approach mentions the value of capturing the unique lived experience of every individual and how they become experts in their lives (ref-2.3.1).
- The second dimension of the inclusive design approach works towards co-designing the design process. Autoethnography method enabled to create the data for me, and eventually I became the project's researcher and designer. I have been co-creating each process thoroughly in the project. Another aspect of my reflections highlighted



the usage of a hybrid version of interventions for me due to my late diagnosis. The co-creation of personal interventions and existing standard interventions together have developed an adaptive and effective structure for me (ref-2.3.2).

- The third dimension of the inclusive design approach is designing a complex system with multiple layers nested within, influencing it. Through autoethnography, I decoded the layers of my influences: my stories and emotions, education- university and school, workplace- employer and culture, home- family, social- friends, personal struggles, and interventions, standardized interventions, and the dyslexia community, medical approach, society as shown in figure 10. These layers affect each other largely, but autoethnography and reflexivity have enabled me to understand each layer and address it in depth to understand their influence on each other (ref-2.3.3).

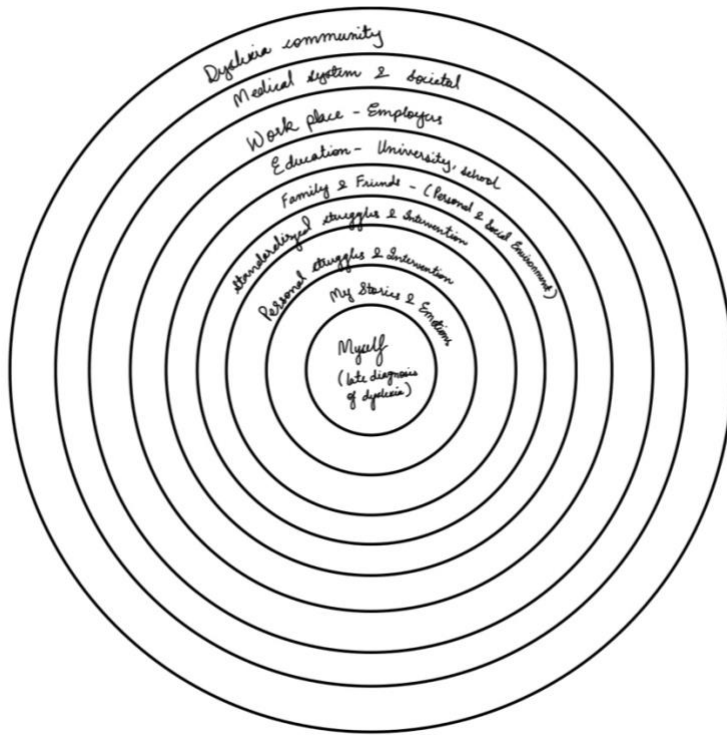


Figure 10 : Layers of influence for me in the project (Authors Image)

The inclusive design approach gave me the framework to create a personalized criterion. The framework had a generative structure, allowing me to add diverse perspectives. The design framework supports diversification and invites additional insights, promoting personal understanding extension. The accountability of adaptivity in the personal structure is essential.

### 3.2.1 Reflexivity Autoethnography

Reflexivity Autoethnography allowed me to have deeper and more careful self-reflections to further understand the intersections of self and

society in terms of general, personal, and social aspects.<sup>91</sup> The impact of reflexive autoethnography on me is listed below:

- Reflecting on my experiences clarified the influences of my struggles, uniqueness, moments of weakness, emotions, and environments. These reflections began to illuminate various other observations and conversations with people.
- The balance of intellectual learning and space for methodological rigor, emotions, and creativity allowed me to experiment with newer ways to communicate my experiences.
- The increased self-awareness quotient and lack of support due to the late detection of dyslexia highlighted the social justice and non-conducive spaces that made me strive for healthier environments and situations.

This reflection activity raised questions, and my research on dyslexia began to provide several parallel connections and answers. I started recording my feelings, emotions, and instances of being dyslexic and its influences on my behaviour as an adult.

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<sup>91</sup> Tony E Adam., Stacy Linn, Jones Holman , and Ellis Carolyn, "Autoethnography," (New York, New York: Oxford University Press, 2015).

EMOTIONAL JOURNEY	SOURCES	TIME
unable to text properly - taking longer to people might feel annoyed with this texting style on receiving multiple message instead of 1 solid long one. I	<a href="https://www.youtube.com/watch?v=pD84K-h6rJU&amp;t=21s">https://www.youtube.com/watch?v=pD84K-h6rJU&amp;t=21s</a>	
Sometimes not completing a assigned tasks and my parents get very angry - when I forget info information they have as a child I remember being labelled as a clumsy kid and eventually I accepted it but sub consciously I was trying to avoid It caused panic, anxiety and my self esteem as well. I really struggled to face myself in class and other people - I am undermining myself - setting expectation whichever difficult to achieve. I remember using computer to complete I felt stupid unable to write spelling - my younger brother was very good at it - he would correct my text and material. I My mother taught me hindi and helped me understand the phonic and help me breakdown the words in small if possible. I feel stupid and embarrassed in the rubric	<a href="https://www.youtube.com/watch?v=1arHnoN86Vx&amp;t=21s">https://www.youtube.com/watch?v=1arHnoN86Vx&amp;t=21s</a> book - dyslexia intervention/outcome - overcoming it talking my friend from school, personal observation , my personal struggle -evident one - personal reflection personal struggle	

Figure 11: A few sources (Authors Image)

In the process of researching and reflecting, I collected several resources on dyslexia in adulthood, such as videos, podcasts, books, and articles rich in knowledge accumulation. All resources regarding dyslexia in adulthood had multiple evidence and explanations regarding the struggles of being dyslexic in various scenarios. While collecting and engaging with these resources, I could relate and connect my experiences with other dyslexic individuals' stories, which helped me validate my dyslexia. I drew connections regarding my language, memory, and sequencing struggles and reflected on the reasons for my behaviour and interventions. The research expanded my purview of the intervention strategies adopted for dyslexic individuals. I began drawing connections between my intervention strategies and established ones. Through these connections, I could cocreate intervention strategies and adapt them as per the complex system. The exposure to varied resources and perspectives helped me evaluate complex situations better (ref-2.3.2,2.3.3).

These resources are valuable to me and have become essential to my digital experience.

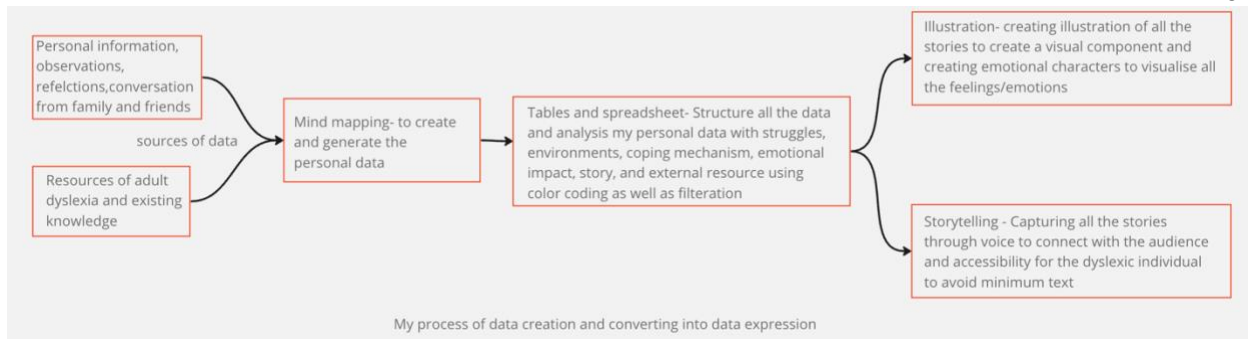


Figure 12: My process of data creation, processing to data expression into illustration and storytelling (Authors Image)

Due to my dyslexia, my process of reflection and capturing valuable insights from the research was different, and the tools I used to record the information were mind mapping and spreadsheets. I began creating mind maps, combining stories and connections with my researched knowledge of dyslexia. The data collection and the progress of data being represented is shown in the figure 12 above.

### - Mind maps

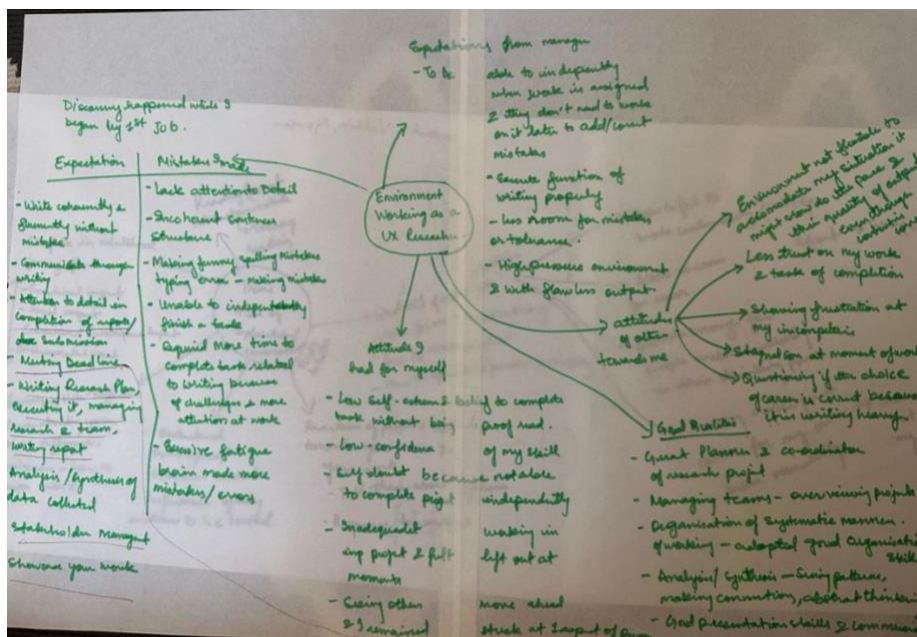


Figure 13: Mind mapping exercise of work environment (Author Image)

Mind maps are visual tools that allow one to brainstorm ideas organically without worrying about structure or order. It helps to analyse the information visually and make connections between them (example in figure 13). Mind mapping is a great tool for dyslexic individuals because it enables them to think, learn, and visualise.<sup>92</sup> I recorded what I had learned from external research on dyslexia and my reflections in the mind map format. The mind map was my primary tool for data creation and generation during the initial process of reflection. It benefited my thinking process and has become second nature in recording information or thinking. The open structure and the flexibility of a mind map allowed me to quickly make connections and draw parallels between internal observations and external information about dyslexia. I created multiple mind maps based on different environments and external resources.

This tool also highlighted the repetitive incidents and stories that manifested in different intensities and stages of my life. It helped me segregate different environments and stages of life to map the impact of the incidents/stories on me.

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<sup>92</sup> MindGenius Ltd, <https://www.mindgenius.com/what-mind-mapping-means-for-dyslexia/#:~:text=Mind%20mapping%20is%20fantastic%20method,asset%20when%20revising%20and%20learning.>)



the categories to identify the connections quickly. Colour-coding helped me organise better and remember the key concepts for the dyslexic brain.<sup>93</sup>

After categorisation and colour coding, I used filters (in a spreadsheet) to segregate the data and observed variations within the data. I added filters of emotions in each story and their occurrences in different environments. These filters created a permutation and combination of stories for me and the viewer/audience.

#### - Illustrations

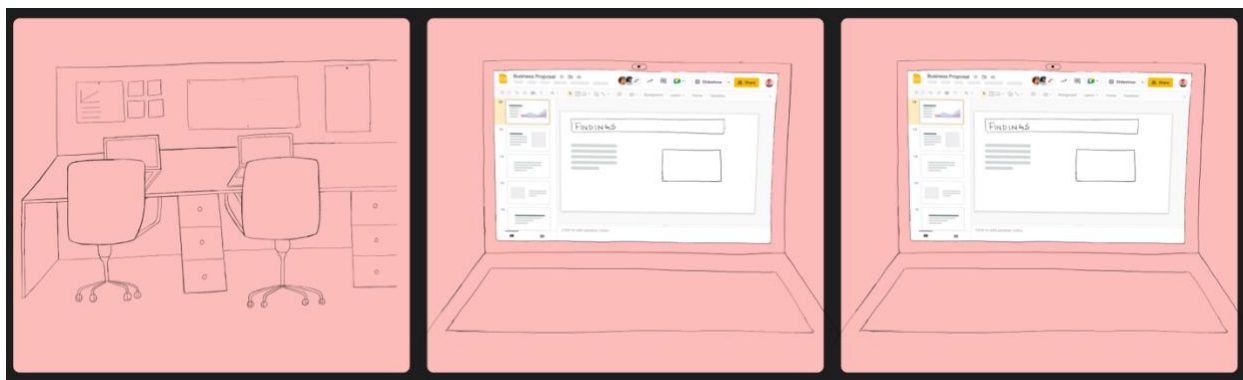


Figure 15: Illustration sequence for one story (Authors Image)

Data generation and analysis were followed by visualisation and creation. I started illustrating my stories to give the audience a visual context of my incidents as shown in figure 15. I also captured the essence of the different emotions by characterising them and visualising the feelings from the stories to make them real and expressive.

#### - Storytelling

Storytelling was adopted to convert the data into a digestible format for the audience. I used an audio format for story narration to create an

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<sup>93</sup> Fatima dalani Adult Dyslexia Treatment: Using Color, <https://vocal.media/psyche/adult-dyslexia-treatment-using-color>,2023.



accessible format for dyslexic audiences. The audio version minimised text exposure and made it approachable for dyslexic individuals to interact with the material. The storytelling format is extremely friendly for individuals to relate to and understand the content.

### 3.3 Design research method

I am the researcher and the designer for this project, and this method allowed me to dive deeper into the role of the researcher to become a better designer. While researching, I also developed a reflexive practice to learn more about my needs and capacities using multiple tools, such as mind maps and spreadsheets.

The design research methodology aims to make design more effective and efficient, enabling design practise to develop successful products.<sup>94</sup>

Creating a good design requires systematic, in-depth research, and this method provided a framework for my design process.

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<sup>94</sup> Blessing, T.M Lucienne, and Chakrabarti Amaresh, "DRM, a *Design Research Methodology*,1st ed" (London: Springer London, 2009).

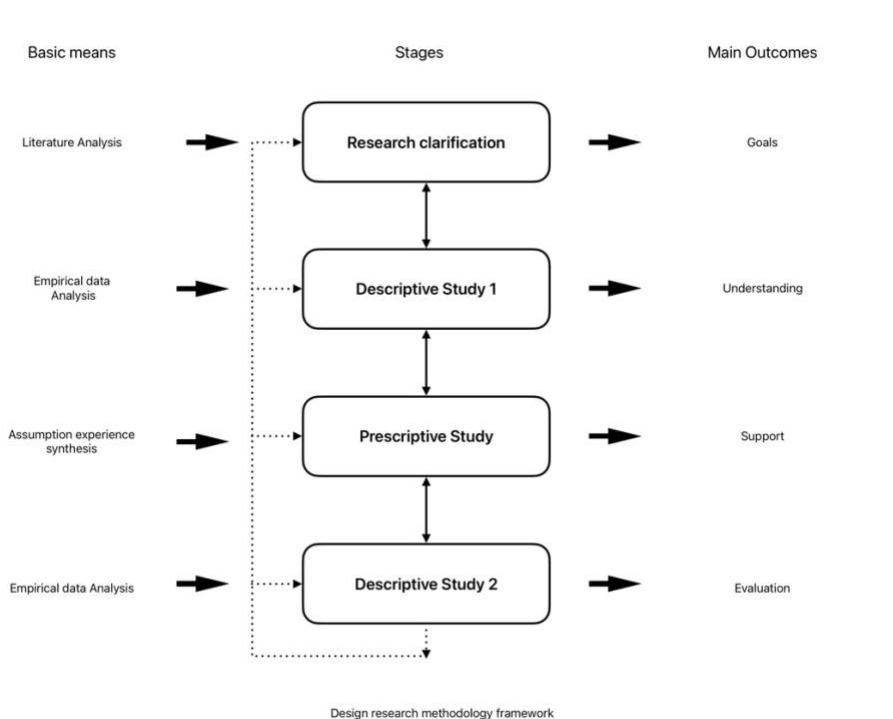


Figure 16: Design Research methodology framework, Blessing, T.M Lucienne, and Chakrabarti Amaresh

These stages of research resonated with my research process, but the only shortcoming was that it purely focused on the researcher's lens, missing the designer's lens. I focus on the designer lens in the iterative design method. (ref-3.4)

Each stage of the framework generated more value in the research process.

The 4 stages of design research method is listed below:

- Research clarification – This stage allowed me to generate the goal and objective of the project by finding evidence or indicators to formulate a realistic goal.<sup>95</sup> My personal experiences became the data, and the reflections, observations, and stories became the evidence, which, in turn, became the goal of representing a dyslexic adult with a late diagnosis. I began to look for similar examples of dyslexic

<sup>95</sup> Blessing, T.M Lucienne, and Chakrabarti Amaresh, "DRM, a Design Research Methodology, 1st ed" (London: Springer London, 2009).

individuals sharing their stories with the community, such as Jo Crawford, Stephen Martin, and Richard Wandermann (ref-2.3.1), and began to understand the value of sharing their stories and knowledge about dyslexia became an advantage of decoding dyslexia for myself. This process of finding more individuals provided clarity in communicating with the dyslexic community and helped share the discoveries about my dyslexia. The first dimension of the inclusive design approach of valuing lived experiences, as every individual has a unique journey with their background variation (ref-2.3.1), was also reinforced.

- Descriptive Study I – With clarity of goals, this stage required me to review the literature and understand the factors that influence the effective design of my stories for the community.<sup>96</sup> Designing an experience that addresses the need to create an engaging and dyslexic-friendly experience was, thus, essential. My literature review focused on unpacking dyslexia in adulthood, the implications of a late diagnosis, and the impacts of emotional characteristics and environments (ref-2.2.1, 2.2.2, 2.2.3, 2.2.4). These external existing knowledge systems provided more information about dyslexia, which enriched my learning and drew parallels from these resources to my stories. The other factors of focus were inclusive design ideologies of designing an accessible technology for the community (ref-2.3.1, 2.3.2,

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<sup>96</sup> Blessing, T.M Lucienne, and Chakrabarti Amaresh, "DRM, a Design Research Methodology, 1st ed" (London: Springer London, 2009).

2.3.3). The category of engagement and interactivity was essential to examine, which enabled me to explore interactive documentary and narrative topics that consisted of works by different artists and designers with web-based experiences (ref- 2.4, 2.5).

- Prescriptive study – This stage, with an increased understanding of the interdisciplinary fields, provided the chance to explore and have multiple design considerations to create a desired design for the viewer.

Literature review and information helped me create a specific design guideline, which is an amalgamation of inclusive web accessibilities for dyslexics (ref- 2.3.5) and interactive documentary and narrative (ref-2.4). I have been drawing deep inspiration for the designing process using these guidelines to create efficient design that is inclusive for the individuals from the community (ref –3.3.1 section below).

- Descriptive Study II – This stage focuses on evaluating the project's applicability and usefulness.<sup>97</sup> I received the approval for the thesis course level Reb, file number 2024-10. I conducted a few tests with the participants to evaluate their understanding of the concept and tried to capture their first impressions. The testing was conducted with a varied set of individuals, not just dyslexic adults because this usability testing would resolve basic navigational issues in web and mobile experiences.

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<sup>97</sup> Blessing, T.M Lucienne, and Chakrabarti Amaresh, "DRM, a Design Research Methodology,1st ed"(London: Springer London, 2009).

I have included both neurodiverse (ADHD, autistic, and dyslexic) and non-neurodiverse individuals. The participants were from the OCAD ecosystem and outside OCAD. The invitation template (Appendix: B class REB, 1), User testing consent form (Appendix: B class REB, 2), and Questionnaire (Appendix: C Class REB, 3) are attached.

The secondary objective of the testing was to observe their usability and interactions with the digital experience. This phase yielded useful insights, further developing the project's concept and making (ref-4.8). This design research method provided a comprehensive approach to conducting research and concert findings for the design phase.

### *3.3.1 Design Guidelines*

I generated design guidelines for this project to cater to the intersection of inclusive web practises and interactive documentary and narrative building. The guidelines enabled me to use the fields more comprehensively in the creation. The four guidelines are listed below:

- Put the user in control - Allowing users control and flexibility to access the content. To enable the users to control their experience in narrative-based content and allow them to navigate through the experience freely, depending on the structure. Narrative structure and linearity are directly proportional to the freedom of a user to navigate through the narrative. Ensuring a flexible and open narrative structure in the project allows the user to create their journey in the experience.

- Give users choices – Users should be provided with choices at their convenience. In the project, it was important to ensure users could control and customise the experience according to their accessibility needs and exploration capabilities. I added Immersive Reader by Microsoft to cater to their text-based needs. It provides multiple entry and exit points to discover and control stories with proper backwards, forward, and play and pause buttons.
  
- Design with familiarity – Using familiar iconography, colours, and shapes to easily create visual imagery that adapts to the users' understanding. <sup>98</sup>
  
- Use of Interactivity-based format to share information – The interactivity is based on the medium and flexibility provided to create the experience. The increase in new media brought in audio, visuals, animations, gifs, and dynamic features to create a more engaging experience for the viewer. <sup>99</sup> I aim to create a wholesome experience by adding audio, visuals, and dynamic interactions that allow users to consume the content and offer more options for me to make content.

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<sup>98</sup> Regina M. Gilbert, "Inclusive Design for a Digital World: Designing with Accessibility in Mind," (New York: Apress, 2019), 22.

<sup>99</sup> Anne, Burdick, Jane, Drucker, Peter, Presner, Todd, and Schnapp, Jeffrey, "Digital Humanities," (London: The MIT Press, 2012), 54.

### 3.4 Iterative Design Method

Enginess mentions that “Iterative design is a methodology that positions your digital experience is a living project that you should regularly tweak and improve upon as you go, rather than building it in one fell swoop and being done for good.”<sup>100</sup>

This type of design method is considered cyclic that consists of prototyping, testing, adjusting, and refining the design. I have followed the iterative making process to create the design for the digital (web & mobile) experience. The project has had multiple cycles of rework and refinement to create an enjoyable experience for the viewer. I created my version of the iterative design method with brainstorming, designing, auditing, self-testing feedback, and synthesis. The steps of brainstorming, designing, and testing are the same in my version of the method, but auditing is an addition. To comply with the design guidelines (ref-3.3.1) and web accessibility rules (ref-2.3.5), the audit became a core evaluation stage in the process.

The figure 17 below shows the method process. I brainstormed inspirations and consulted design guidelines to create multiple versions of different screens and explored various possibilities. I started designing on Figma (prototyping software for mobile and web designing)<sup>101</sup>, in line with all design considerations. While developing the designs, I had other ideas to solve the problem better. I have been auditing my design with the web

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<sup>100</sup> “What Is Iterative Design? (And Why You Should Use It),” Enginess, October 27, 2021, <https://www.enginess.io/insights/what-is-iterative-design>.

<sup>101</sup> Figma – It is a tool for designer to create, share, test design for websites, mobile apps, and other digital products and experience. <https://www.figma.com>

accessibility UX principles (2.3.5) and W3G dyslexia guidelines to ensure a better experience. I conducted navigational and usability testing simultaneously to keep tweaking the usability issues, which were observed while the design had a couple of screens ready with navigational connects on Figma. The feedback sessions with my advisors helped me gain more insights to refine the design. I collated the observations and feedback to understand the design-related shortcomings and further synthesised them, which generated the next cycle of brainstorming and designing.

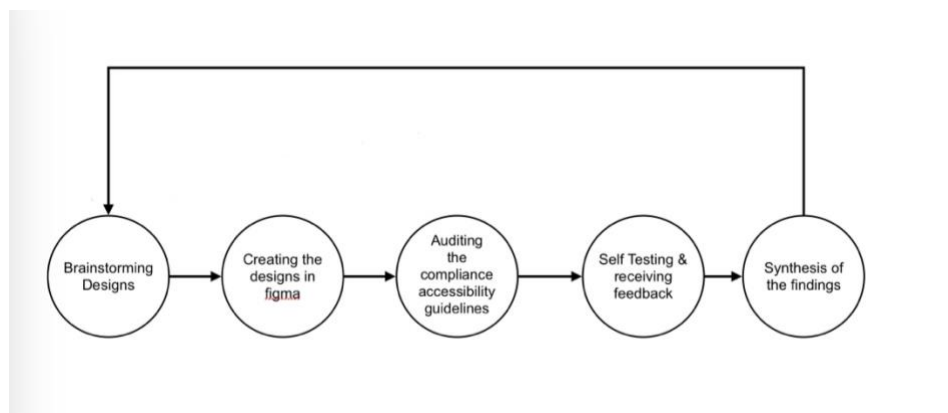


Figure 17: Iterative development cycle method (Authors Image)

My iteration cycle was generating and refining the design on Figma (software web/mobile). With each cycle, I became more aware of the usability, purpose, navigation, information visualisation, and accessibility issues. I tested with participants often to learn and fix the interactivity of the prototype, which gave me additional insights to develop a better design solution.



## 4. Final project and design process

This chapter captures the process of creating and developing the digital prototype for both web and mobile experiences. Designing consisted of multiple aspects of the prototype, which evolved with the iterative design method. The process of collecting personal data and the generation of stories were important aspects of story creation. Creating emotional characters and their iterative development were important for their final versions. The phase of testing and coding the digital experience is presented with its roadblockers and changes in the project.

The project was designed with multiple elements and a list of design guidelines, with reference to web accessibilities (ref-2.3.5) and interactive narratives (ref-2.4). The four principles generated with the amalgamation of both these fields are as follows:

- Put the users in control
- Give users choices
- Design with familiarity
- Use of interactivity-based format to share information

These principles were core resources in creating, designing, and regulating the project design. The principles helped me focus on my concept and make design decisions during the creation process.

## 4.1 Data collection, story generation, and narrative structure

This section consists of data collection, data processing, story creation and generation, and developing a narrative structure.

### *4.1.1 Autoethnographic data collection and generation*

Reflexive autoethnography (ref – 3.2.1) was the initial stage in data creation and collection. First, I listed my observations and current incidents of my understanding of dyslexia. The research process of unpacking dyslexia in adulthood and finding multiple valuable resources was a powerful tool of knowledge.

I started using mind maps while reading, listening, and watching resources to record information or any resonance and validation I received of my dyslexic experience. It led me to new pieces of information and differences about my dyslexia. The introspection and studying the existing resources of various lived dyslexic experiences validated many confusions, pains, and struggles and championed a deeper understanding. Once the mind maps and connections became more apparent, I began recording them in a tabular format. The table format created a more structured collection of inorganic information.

writing challenges	WHICH LANG SKILLS COME WITH DIFFICULTY? - writing, reading, maths	
surrounding people and object	HOW IS THE GENERAL INTERACTION WITH THE SPACE? level of concentration/ clumsiness	
Sounds decoding and similar sounding words	ANY ISSUES RELATED TO HEARING OR DECODING THE SOUNDS OF THE LETTERS? - spelling, similar sounding words,	
Cognitive coping and fatigueness	DOES YOUR BRAIN FEEL TIRED? WHEN DOES IT HAPPEN? WHAT HAPPENS WHEN THE COGNITIVE ENERGY IS LOW OR HAVE BEEN ON HIGH USE? WHAT IS THE IMPACT?	
Multitasking and large information	HOW DO YOU FEEL WHILE MULTITASKING? HOW DO YOU FEEL WITH INFORMATION OVERLOAD?	
Linear thinking	HOW DO YOU THINK? HOW DO YOU CONNECT WITH SEQUENTIAL /LINEAR PROCESS?	
consequential affects due to emotional affect from the lack of confidence and skill of reading/writing without mistakes	HOW BEHAVIOURAL AFFECT ON US DUE TO HAVING DYSLEXIA AND BEING IN AN ENVIRONMENT?	
Retention/comprehension due to wordiness and format being writing	DO YOU HAVE COMPREHENSION/RETENTION ISSUES? WHEN DOES IT HAPPEN? WHAT KIND OF FORMAT OF GAINING OF KNOWLEDGE	
direction and location idetification	HOW DO YOU NAVIGATE USUALLY? WHAT KIND OF DIFFICULTIES YOU FACE? WHAT DO YOU USUALLY REMEMBER?	
Understnading time	HOW IS TIME MANAGEMENT AND ORGANISATION OF TASKS?	

Figure 18: Colour coded categories of the struggles/challenges (Authors Image)

The spreadsheet and table creation added more dimensions to the thinking process of reflections. The dimensions of differences, interventions, strength, trigger moments, emotional impact, personal stories, environments, timelines, and sources emerged. Once the data was systematically arranged, I began to make sense of the information and switched to the role of a researcher rather than an auto-ethnographical participant. I organised the information by categorising similar challenges and struggles into a bucket and colour-coded each of them as shown in figure 18. Buckets of writing challenges, decoding sounds, cognitive coping and fatigue, linear thinking, multitasking and extensive information, and comprehension and retention began overlapping with the information collected from journals, books, and

other sources. These processes became an important source of validation for me and highlighted the intensity of my dyslexia.

INTERVENTIONS	Environment - school graduate studies	environment - workspaces	WHAT IS BEING TRIGGERED? (emotion, memory, curiosity, reflection)	curious	EMOTIONAL JOURNEY	SOURCES
creating a rough structure of all the points to be written for the essay/ report anything long complex written info. Writing everything in a order with bullet points creating a linear structure with the thought flowing in a structure. It challenging but briefly creating a basic context matter	writing critique, review of reading, pieces of writing for thesis or other project Using the type corrector and reading the content trying to convey my ideas and make sense - sentences sturcture with 1st	writing coherently - proper structure in given time might be challenging need to be able to work in well paced environment. Difficult to work in fast paced environment with high churning rate of the writing work.	can affect the mental state in terms of low self esteem and self doubt due to lack of proper ability of doing th task - writing is a chore and can be challenging in certain situations.		unable to text properly - taking longer to convey my message. I feel like i dont fit in while texting people.	
		becomign tired lead to making more mistakes and silly funny mistakes and grammer issues became more evident	being annoyed and cursing myself for making stupid mistakes - being screamed by the manager as well for the same - not efficient quality of work		Affects the mental and emotional relation of doing the task - being hard of myself and not understanding my own challeng	
	avoid this in school setting	Try to plan ahead and keep time to preform efficiently and not rushing through the work- fast pace project and not having time to see the content can cause issues for thoughts being incoherently flowing and not on the same level - making			feeling not fitting in the environment due to the performance quality is low compared to others not meeting expectation of manager and project - not delivering on time and causing chaos feeling stressed constantly and unable	<a href="https://www.youtube.com/watch?v=spD64K-h6sJUK">https://www.youtube.com/watch?v=spD64K-h6sJUK</a> <a href="https://www.youtube.com/watch?v=starHooN86VW&amp;t=21s">https://www.youtube.com/watch?v=starHooN86VW&amp;t=21s</a>
Naturally happened - Automatically writing though broken down and sending multiple messages instead of sending 1 long text Preferred to be in silent spot and places with less distraction to avoid being lost - Evaluate the nature of the text and your priority of reading it properly to decide with I have always created written down deadline and submission on my calendar in macbook or Postit - helps set a target			general reflection - preferring to talk to people on call over texting them. I feel texting is my generation things I remember to prefer reading or studying alone in silent places. I still like doing reading in library or my room alone sometimes in park it is		people might feel annoyed with this texting style on receiving multiple message instead of 1 solid long one. I	personal observation
			I dont remember multiple incidents from my own school which happened to me and my friends remind me. I remember moments when i would bump into something and not realising being hurt of days and		Sometimes not completing a assigned tasks and my parents get very angry - when I forget imp information they have as a child I remember being labelled as a clumsy kid and eventually I accepted it but sub consciously i was trying to avoid	<a href="https://www.youtube.com/watch?v=starHooN86VW&amp;t=21s">https://www.youtube.com/watch?v=starHooN86VW&amp;t=21s</a>
			Emotional memory and struggle - in school. I remember being very panicked and concerned when I had In a work environment and taking live notes on my computer with the screen presented for everyone to see		It caused panic, anxiety and my self esteem as well. I really struggled to face myself in class and other people - I am	book - dyslexia intervention/outcome - overcoming it
With more usage of technology, the support and correction in writing was constantly being highlighted - It made my			Making silly mistakes while writing - feeling annoyed and stupid by my on ability - I never understood why this		undermining myself - setting expectation whichever difficult to achieve. I remember using computer to complete	personal observation , my friend
while typing started to identify the patterns of typing and focusing on pattern to form the word instead of surffion them through			There are so many incidents where I havent been able to read new word and reading it weirdly / wrongly. I still continue to do this and feel like this. I remember making mistakes on easy spelling which I would have known and written multiple times - still do it. I Why can't dyslexic	What is the issue with hearing the sounds?	I felt stupid unable to write spelling - my younger brother was very good at it - he would correct my text and material. I wasn't taught phonics properly or I	personal struggle -evident one - personal reflection
					My mother taught me hindi and helped me understand the phonic and help me breakdown the words to spell it correctly.	personal struggle

Figure 19: Filtrations data with added filters of environment, emotions (Authors Image)

Using filters and playing with different dimensions, such as emotions, timelines, environments, intensity, stories, personal steps of coping, and linking with external resources, brought richness to the information as shown in figure 19. I began to add filters in the data, such as emotions and environments, to check the variation and difference in the information. The mapping of emotions and creating filters added more clarity about the emotional impact of my memories. Another layer of the environment's filter created more context for the stories and enabled me to understand the intensity of the stories. The dimension of time as a filter became essential to show the evolving journey. These filters created an interesting combination and permutation of stories for me and the viewer/audience.



Twine allowed me to connect the stories through emotions overlapping with other stories as shown in figure 20. I discovered that every story had two types of emotions: trigger and consequential.

I could differentiate between the trigger emotion and consequential emotion for each story as emotions are not felt in isolation but in multiplicities. In my stories, certain moments have a heavy, consequential feeling that still affects me. The breakdown of the emotional flow of the stories and mapping it was essential for me. This text-based interaction helped me understand the stories and map the connections and narrative structure.

**Narrative structure** - This tool became a proof of concept to structure my non-linear narrative rather than branching out and looping with one another (ref -2.4.2,2.4.3). The looping occurred because similar emotions appeared in different stories even though the stories had linear progression of sequences. In projects like 'Prison Valley' and 'Vimy', the entire experience's narrative was flexible, allowing the viewer to explore it freely. In 'Vimy', similar stories were categorised under a theme to create a thematic structure. Similarly, I tried to find the connections between the stories to categorise them under a theme. I saw similarities between the project 'Yesterday, Today and Tomorrow' (ref- 2.5.1) because my emotion categories were also: anger, sad, disgust, fear, and joy.

Though Twine helped me structure my narrative and emotions, I did not have the flexibility to colour-code and customise the connectors per my

requirements. Therefore, I switched to working with the mind map using the tool Miro<sup>103</sup>.

As a visual learner, I wanted to return to an organic structure of mind maps to see the connections and colour-code them. Miro allowed me to create colour-coded, highly customisable mind maps with more flexibility as shown in figure 21.

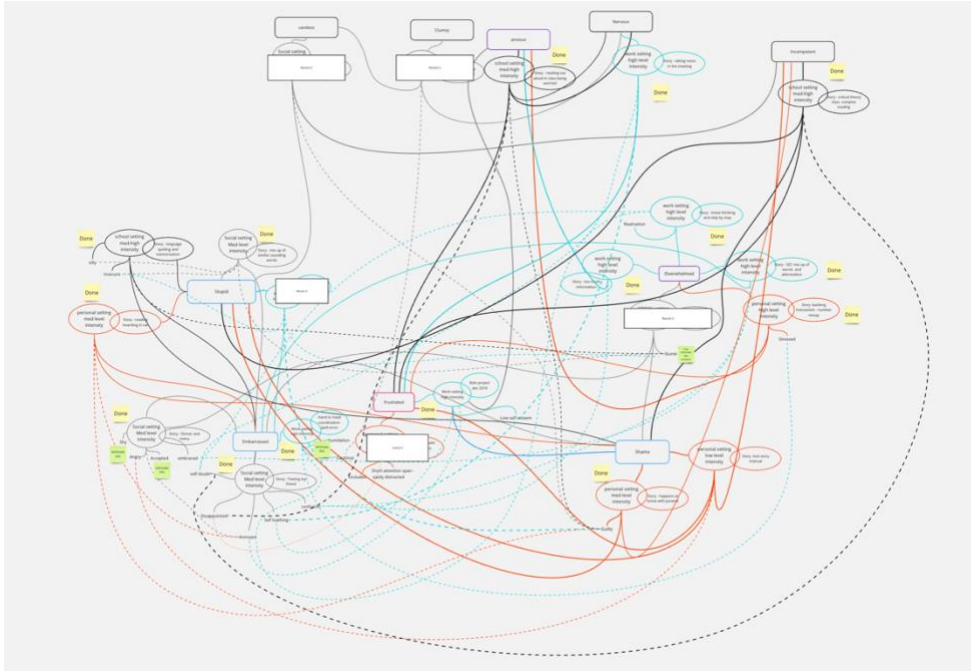


Figure 21: This was the entire mind map of all the stories and was comprehensive, using keywords instead of the whole text (Authors Image)

With this software, I could easily connect emotions using multiple colours and lines between stories, trigger and consequential emotions, and environments.

<sup>103</sup> Miro – It is a online workspace for innovation that is visually reminiscent to whiteboards. It allows to add various content from text to images, create maps & diagram, and work with visual templates together with a team. <https://miro.com/>

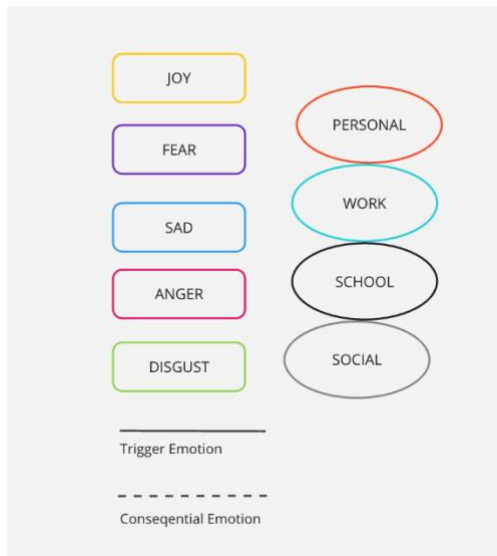


Figure 22: Index for the mind map (Authors Image)

The index used in the mind map created using Miro is shown in figure 22 above.

The final step was to create a structured spreadsheet with combined information. The main objective was to use the spreadsheet to easily navigate the data, using filters to see different permutations and combinations of all dimensions of time, emotions, environments, trigger emotions, consequential emotions, coping steps, and links to resources as shown in figure 23.



Emotions	Status	Emotion status	environment	Timeline	Intensity	Year	Story description	Story illustr	Steps to cope	Links of resources
Overwhelmed	done	primary	PERSONAL	Before...	HIGH	2015	-banking transaction - number mixup	done		Book - sequence issue
Overwhelmed		primary	WORK	After 2...	HIGH	2018	SEC mix up of words and abbreviation	done		
Overwhelmed		primary	WORK	After 2...	HIGH	2022	linear thinking and step by step	done		
Overwhelmed		primary	WORK	After 2...	HIGH	2022	too much information			living with a dyslexic partner
Shame	Done	primary	PERSONAL	After 2...	LOW	2022	lock story manual	done		personal
Shame		primary	PERSONAL	Before...	MED	2017	happens at home with parents	done		organisation - made by dyslexia- youtube
Shame		secondary	WORK	Before...	HIGH	2019	bolo project dec 2019	done		personal observation - true guilt of dyslexia mind - dean bragione
Shame		secondary	SCHOOL	After 2...	HIGH	2022	critical theory class -complex reading			personal
Shame		secondary	PERSONAL	Before...	MED	2000	reading hoarding in car	done		book
Shame		secondary	SCHOOL	Before...	MED	2000	language spelling and memorisation			
Shame		secondary	SOCIAL	Before...	MED	2005	Dinner and menu			Living with dyslexic partner
Frustrated	done	primary	WORK	Before...	HIGH	2019	bolo project dec 2019	done		personal observation -true guilt of dyslexia mind - dean bragione
Frustrated		secondary	PERSONAL	Before...	HIGH	2015	-banking transaction - number mixup	done		Book - sequence issue
Frustrated		secondary	PERSONAL	After 2...	LOW	2022	lock story manual	done		personal
Frustrated		secondary	WORK	After 2...	HIGH	2020	taking notes in the meeting			personal
Frustrated		secondary	SCHOOL	After 2...	MED	2022	critical theory class -complex reading			personal
Frustrated		secondary	SCHOOL	Before...	HIGH	2000	reading out aloud in class being worried			Dyslexia -outcome & intervention
Embarrassed	done	primary	WORK	Before...	HIGH	2018	Hand to head coordination -spell error			personal
Embarrassed		primary	SOCIAL	After 2...	MED	2014	Texting my friend			personal
Embarrassed		primary	SOCIAL	Before...	MED	2005	Dinner and menu			Living with dyslexic partner
Embarrassed		secondary	PERSONAL	Before...	MED	2000	reading hoarding in car	done		book
Embarrassed		secondary	SCHOOL	Before...	MED	2000	language spelling and memorisation			
Embarrassed		secondary	SOCIAL	After 2...	MED	2010	mix up of similar sounding words			personal
Embarrassed		secondary	WORK	After 2...	HIGH	2018	SEC mix up of words and abbreviation	done		Book - sequence issue
Embarrassed		secondary	PERSONAL	Before...	HIGH	2015	-banking transaction - number mixup	done		book
Stupid	done	primary	PERSONAL	Before...	MED	2000	reading hoarding in car	done		book
Stupid		primary	SCHOOL	Before...	MED	2000	language spelling and memorisation			
Stupid		primary	SOCIAL	After 2...	MED	2010	mix up of similar sounding words			personal
Stupid		secondary	PERSONAL	Before...	MED	2017	happens at home with parents	done		organisation - made by dyslexia- youtube
Stupid		secondary	SCHOOL	After 2...	HIGH	2022	critical theory class -complex reading			personal
Stupid		secondary	PERSONAL	After 2...	LOW	2022	lock story manual	done		personal observation - look for resource
Anxious	done	primary	SCHOOL	Before...	HIGH	2000	reading out aloud in class being worried	done		Dyslexia -outcome & intervention

Figure 23: Final spreadsheet table with all the information (Authors Image)

Story structure for all the stories – My personal stories had a sequence shown below:

- A trigger moment due to a circumstance or event
- An emotional experience due to the inadequacies or difficulties of task completion and being in an environment that causes more pressure or impact, feeling a strong immediate emotion
- A response stage by masking my issues or trying my best to complete a challenging task (in the response stage, other consequential emotions emerge, impacting my overall feeling during or sometimes after the incident)

This clear structure developed in my stories as it was adopted from the atlas of emotions created by Ekman to explain the emotional journey<sup>104</sup>. The stories are impactful and emotional because they highlight my challenges and struggles and my emotional well-being.

<sup>104</sup> Paul Ekman, atlas of emotions, <https://atlasofemotions.org/#triggers>

## 4.2 Iterative creation of characters – Emotions

Creating characters representing emotions was fun but unpacking them was important before drawing them.

In dyslexia, visual cues are essential to follow through information, and dyslexic individuals are known to be visual thinkers. I see the significance of the shapes and colours as it adds visual cues in the way I memorise. The association of shapes and colours comes extremely naturally to me, so I adopted the association for other viewers in the design. I bring in the sensibilities of creating something that resonates with me and the concept of visual thinking that would positively impact the audience from the community<sup>105</sup>. I follow the UX principle (ref-2.3.5) of creating something familiar and comfortable for all dyslexic viewers (design with familiarity).

### Ekman emotions ideology

Paul Ekman states “Emotions are a process, a particular kind of automatic appraisal influenced by our evolutionary and personal past, in which we sense that something important to our welfare is occurring, and a set of psychological changes and emotional behaviours begins to deal with the situation.”<sup>106</sup>

Emotions occur automatically as a response to situations we cannot control. There are seven universal emotions, but I chose to work with five primary emotions – anger, sadness, fear, disgust, and joy as shown in figure

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<sup>105</sup> Vanessa Victor, The power of being a visual thinker, <https://www.youtube.com/watch?v=SoJW4dFGnx8&t=185s>.

<sup>106</sup> Paul Ekman, “Universal emotions,” <https://www.paulekman.com/universal-emotions/>.

24 & 25. These emotions go beyond language, culture, regional, and ethnic differences. Each emotion impacts distinctive signals, physiologies, and timelines.<sup>107</sup>

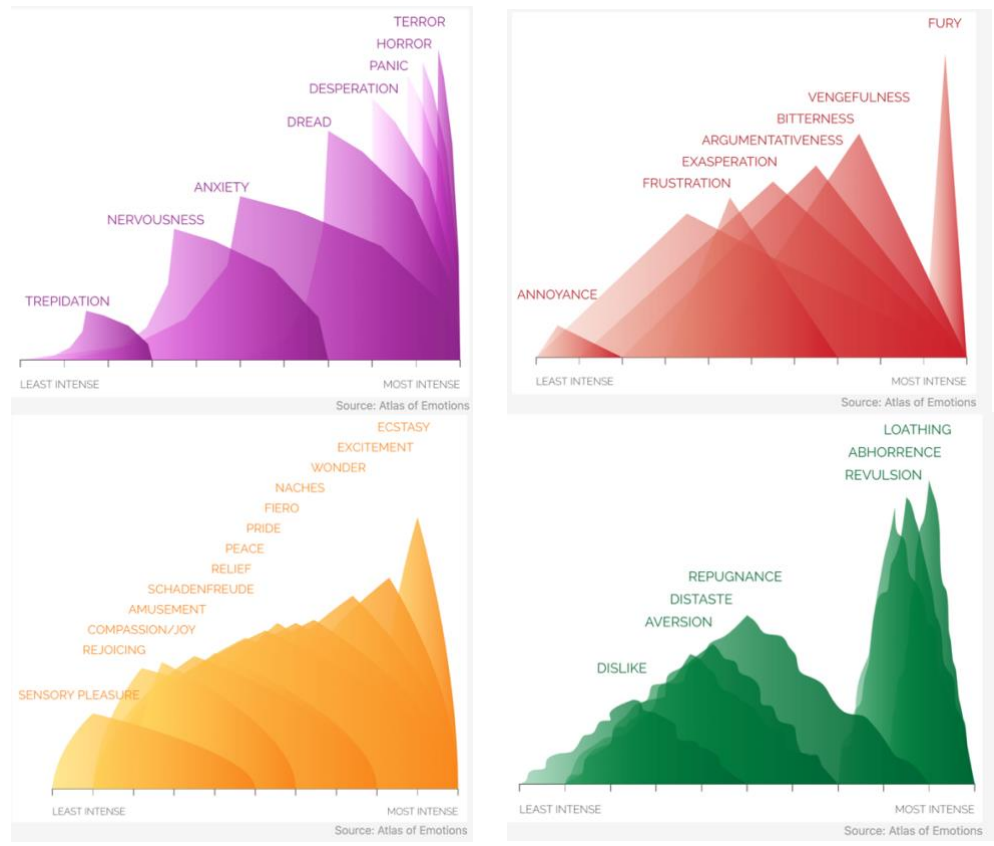


Figure 24: Fear, Anger, Joy, Disgust, Paul Ekman, via official website-<https://atlasofemotions.org/#states/anger>.

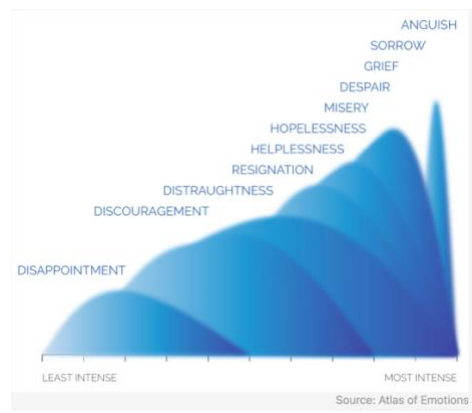


Figure 25: Sad, Paul Ekman, via the official website-<https://atlasofemotions.org/#states/anger>.

<sup>107</sup> Paul Ekman, Universal emotions, <https://www.paulekman.com/universal-emotions/>.

Each universal emotion expands into a range of emotions. This range helped me map stories into appropriate emotion categories, such as segregating anger into annoyance and frustration.

In the image below, I have listed the trigger and consequential emotions from the stories and segregated them into subcategories of each universal emotion as shown in figure 26. Some emotions were not listed in the subcategory of universal emotions (Paul Ekman list), so I tagged them as trigger and impact and subjectively categorised them under one universal emotion category.

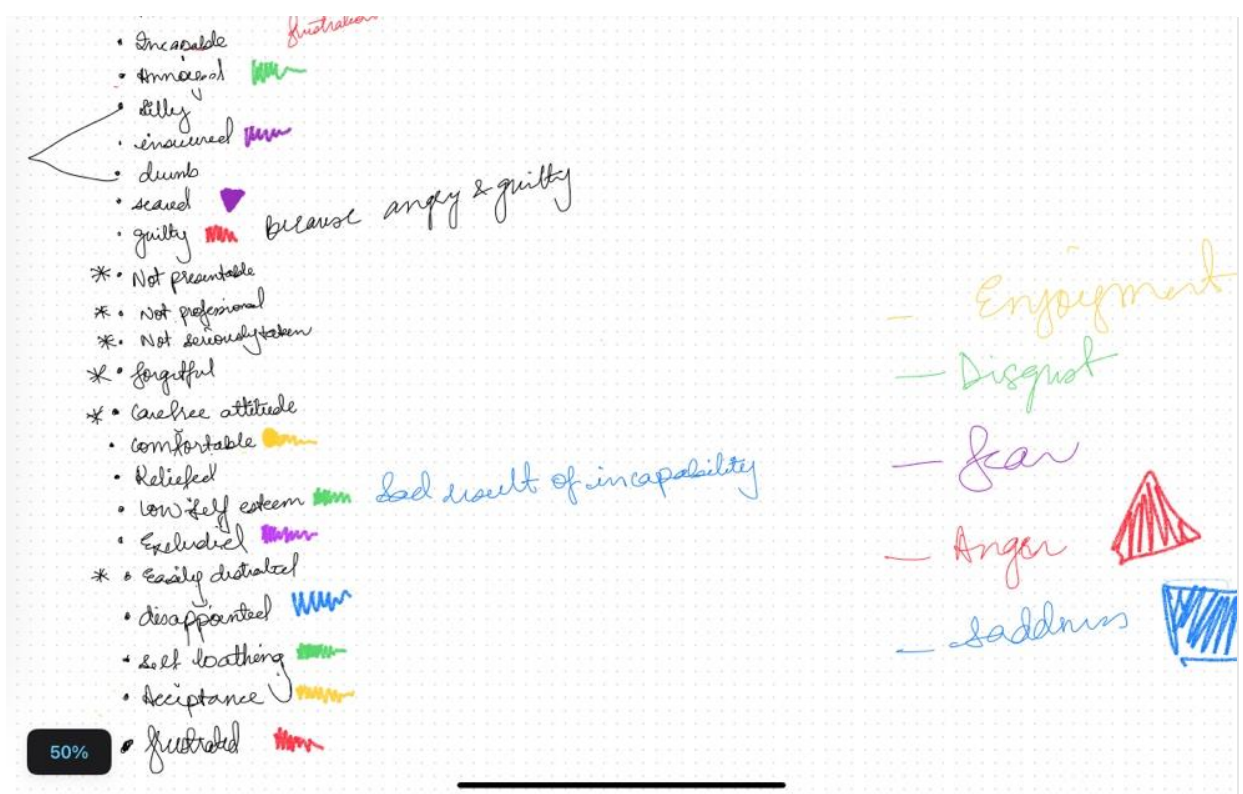


Figure 26: Segregation of emotions with colour (Authors Image)

#### 4.2.1 Colour relation with emotions

Colours impact internal and external stimuli and activate emotional responses as a consequence.<sup>108</sup> Colours are strongly connected to emotions. It is commonly used in advertisements, print media, movies, and multiple instincts to influence attitudes and behaviours. Colours have also impacted my moods and emotions. Borrowing from the structure of Ekman colour and emotion relation, I associated each emotion with a colour. The Atlas of Emotion website uses the colour-emotion connection– Anger is red, Fear is purple, Disgust is green, Sadness is blue, and Joy is yellow.<sup>109</sup> These associated colours and emotions have been visualised in various media, such as in the movie “Inside Out,” advertisements, and animations. Considering the design with familiarity principle, I have used similar colour language for my viewers.

#### 4.2.2 Character development of the emotions

Developing the characters was an iterative process, undergoing three cycles of iterations driven by brainstorming, designing, auditing, self-testing and feedback, and synthesis to develop them fully. The section below shows the versions of the characters, with each prototype highlighting the improvements and changes. For example, anger was visualised as a blob-like character in the prototype, progressing into a human-like character as shown in figure 27. This process was replicated for the other categories of emotions.

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<sup>108</sup> Professor Dr. Josef Brüderl, Prof. Dr. Edgar Erdfelder Prof. Dr. Hans Irtel (Betreuer) PD Dr. Rüdiger Pohl, “Colour and Emotion- A Study on the Affective Judgment of Color Across Media and in Relation to Visual Stimuli,” (2006).

<sup>109</sup> .Paul Ekman, Atlas of emotions, <https://atlasofemotions.org/#states/anger>.

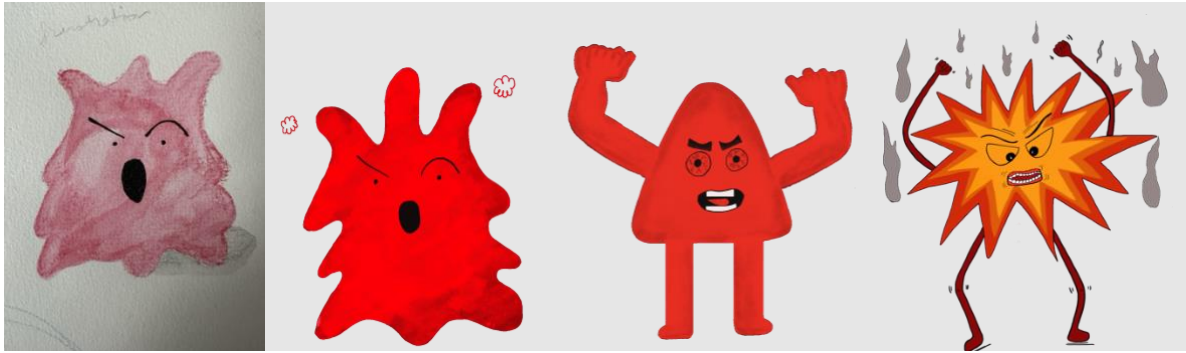


Figure 27: 1st Prototype, 2nd prototype & 3rd prototype progress through the iterative process (Authors Image)

### 1st prototype

For the first version, I brainstormed to create inorganic circular shapes, working with folds to show stress lines, and added expressions for additive impact. I began with static drawing and further created movement as gifs. I took inspiration from anime, the movie “Inside Out,” and cartoons to create expressions. Using the guiding principles of designing with familiarity (ref-3.3.1), I also toyed with colour and shapes as familiar visual cues and maintained the same colour for each emotion category: red for anger and purple for fear. I also audited the guidelines to ensure they were aligned. This prototype lacked distinction between the shapes of the characters and seemed repetitive. I wanted to add more human-like features like hands and legs to allow more drama and exaggerated expressions.

### 2nd prototype

For the second version, I gave each emotion a distinct shape to diversify their personalities and avoid uniformity as shown in figure 28.

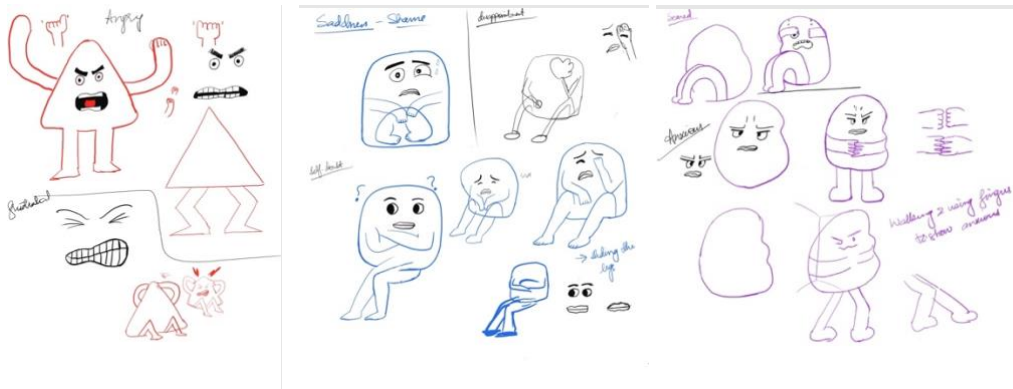


Figure 28: Exploration for the emotions categories: anger, sad, and fear (Authors Image)

List of shapes adopted for each emotion below:

- I used a triangle to visualise Anger with pointed edges.
- I used a square with soft edges to illustrate Sadness, imagining it as a low-spirited individual.
- I used a flexible circular shape to visualise Fear, creating stress lines and a hunched-over body structure.

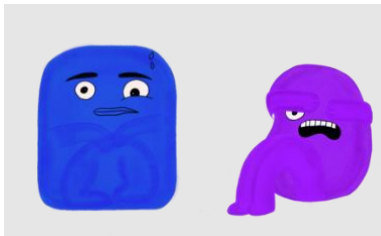


Figure 29: Sad & Fear exploration for 2nd prototype (Authors Image)

I used this version for auditing, as it ensured familiarity with colours and discrete shapes for better recognition. I also had to consider individuals with colorblindness and whether the colours were compatible for them to understand and distinguish. The project accounts for the red and green spectrum, the largest colourblind section. During a feedback session, I realised the form/shape of the character added no value to the emotion represented. Before giving any shape to an emotion, it was essential to break down each

emotion according to the feeling invoked, features, expressions, and movement.

### 3rd prototype

To create the third version of the characters, I drew mind maps for each emotion associated with their physical changes, expressions, and feelings as shown in figure 30. I drew various forms and related them to each category of emotions.

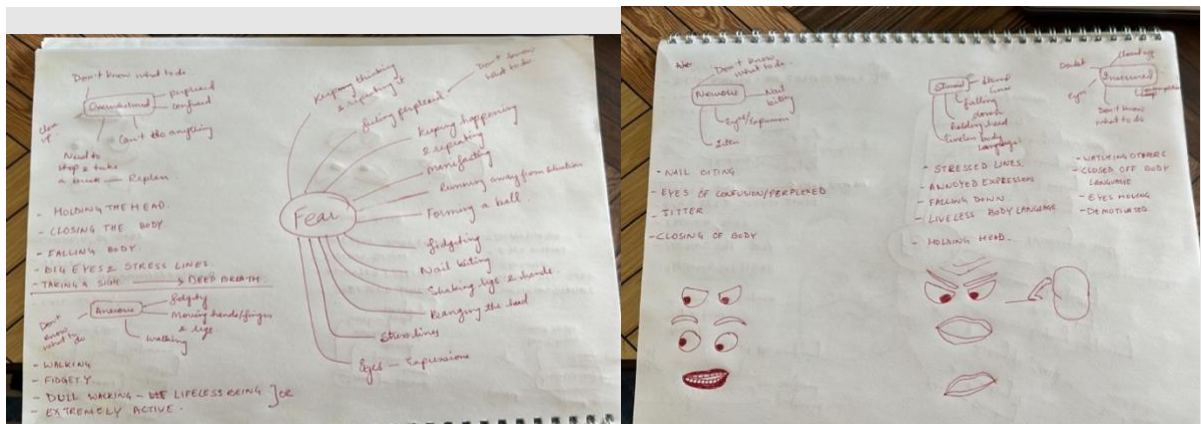


Figure 30: Different mind maps of the emotions broken down in depth (Authors Image)

Through mind maps, I started to picture emotions with forms listed below:

- Anger is like a blasting feeling
- Sadness is like a cloudy and gloomy feeling
- Disgust is like a sticky, slimy feeling
- Fear is like closing into a ball
- Joy is like a star feeling of happiness, light

While designing, I ensured that I retained exaggerated expressions, forms, movements, and relatability with the emotion.



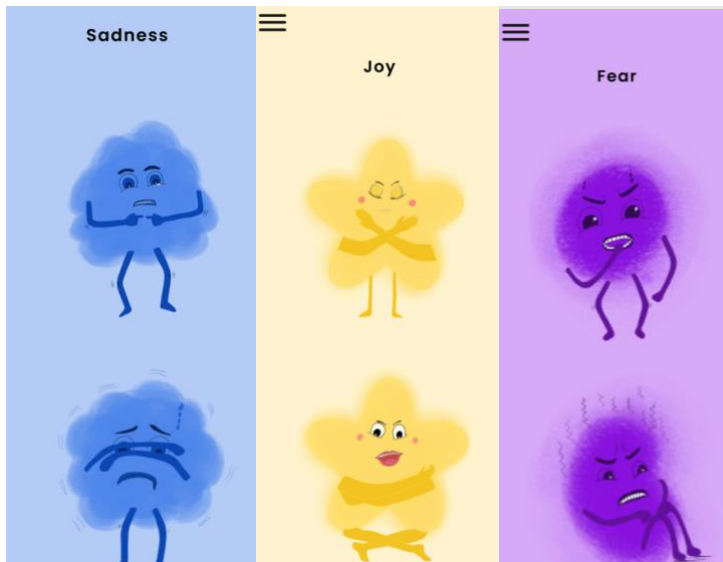


Figure 31: Final versions of the emotion of sad, joy, and fear (Authors Image)

The iterative cycle has been beneficial in developing the characters into more detailed emotional characters.

### 4.3 Prototyping - Digital designs (mobile and web)

Creating the design was a great learning experience, as it generated wireframes of the designs, which were compatible with both web and mobile. The process was iterative and required consistency to improve. Following the design guidelines created by the amalgamation of inclusive web accessibilities and interactive documentary and narrative building (ref – 3.3.1), I ensured the experience was dyslexia friendly by using the dyslexia friendly rules (ref-2.3.5)

These rules are an essential aspect of design, and they helped map and audit the designs per the accessibility requirements. I also conducted self-testing and found these guidelines extremely valuable from a dyslexic point of view.

Like the characters, I developed the design in cycles (ref-4.2.2). The iterative cycles ensured gradual development and proper auditing in the designing process. This process helped me understand what worked and what required change.

The process of designing consisted of multiple elements such as audio recording, illustrations, support strategies button, library resources button, creation filter like environments, timeline, emotions to successfully advance in the design. There were five cycles of development of the prototype, which is explained in the section below.

### 4.3.1 Website design iterations

#### 1st prototype iteration of website experience

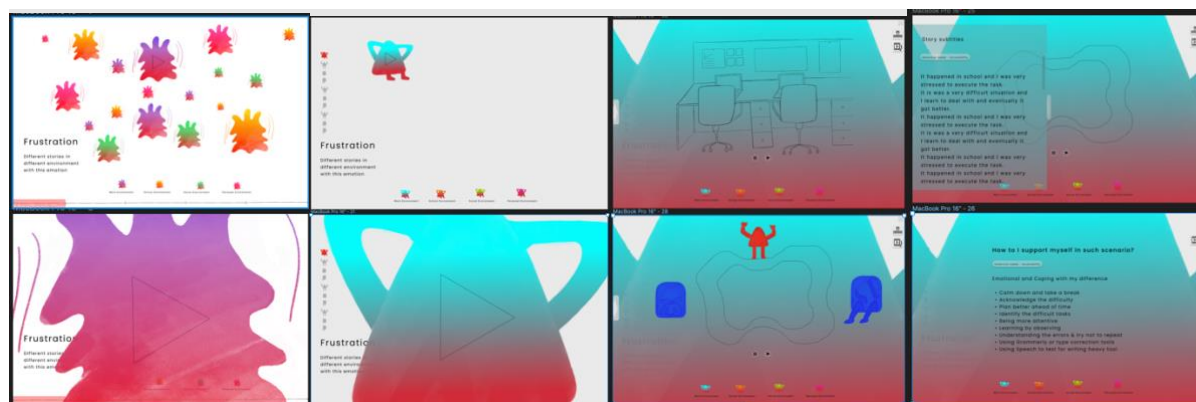


Figure 32: Flow of the story from selecting the story to playing the story and support page, subtitle page (Authors Image)

The first version focused on creating the base structure and flow of the digital experience. Web interactive projects, such as 'After the Storm' (ref-2.4.1), 'Prison Valley' (ref-2.4.2), 'Virtual Memorial' (ref-2.4.3), and 'Yesterday, Today and Tomorrow' (ref-2.5.1) inspired me. These were projects with narrative structures, information architecture, engagement, navigation, thematic designing and detailing, and interaction with different elements, and

I also planned the same for my design. I focused on the following areas while brainstorming the design:

- How will each emotion be introduced?
- How will each story be played and interacted with?
- If the basic navigation between screens was understandable and how could useful buttons be introduced?
- Where is the environment going to be placed?

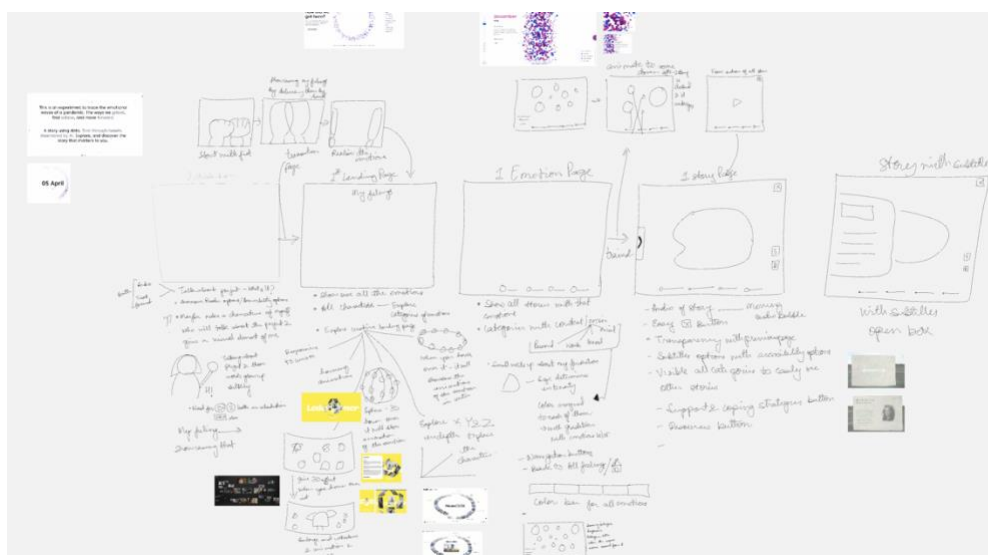


Figure 33: Initial ideations screen for the website with the inspirations from other interactivity documentaries & narratives (Authors Image)

The 'Virtual Memorial' and 'Yesterday, Today and Tomorrow' introduce the project through an interesting landing page and different types of interactions. 'Yesterday, Today and Tomorrow' presents the information and data directly for the user to hover over each piece. The navigation bar, use of colour and sizable elements, and extensive usage of hover interaction added a dynamic interface (shown in figure 33).

In the 'Vimy-Virtual Memorial,' the stories were presented under categories, and the audio-based stories had a moving audio blob that



I also audited the designs and design guidelines to ensure they followed the accessibility rules (ref-2.3.5). I checked these rules list below in the first iteration stage <sup>110</sup>.

1. The font should be Sans Serif. I used Poppins because it is my personal for its clear letters, adequate spacing, and rounded lettering, which makes it easy to read.
2. Font size should be more than 12-14 points. I used more than 12 points and a bigger size for the website.
3. Check background colour contrast. I used the software 'Contrast Checker'<sup>111</sup> to ensure all the colour needs were met.
4. I ensured that the appropriate line spacing was 1.5 across the experience.
  - I used simple and easy text for the web experience to accommodate reading capabilities.
  - I established a proper hierarchy of headings and content sections to enable readability.
  - I used audio-based stories to minimise text and enable a comfortable form of consumption as it is more accessible (refer-Appendix: C for more info)
  - The Immersive Reader allows them to customize font size, background colour, and line spacing for a comfortable experience for every viewer.

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<sup>110</sup> "Dyslexia Friendly Style Guide," British Dyslexia Association, n.d., <https://www.bdadyslexia.org.uk/advice/employers/creating-a-dyslexia-friendly-workplace/dyslexia-friendly-style-guide>.

<sup>111</sup> <https://contrastchecker.com/>

- Let users (viewers) control the experience by choosing an emotion and story instead of playing it in a linear format.
- The user (viewer) controls the navigation of the experience as per their choice.

After auditing and complying with the accessibility rules, I resolved the navigational and interaction-based loopholes in the experience. I found errors in the control and added buttons for better navigation. Based on the feedback, I also revised the navigation bar, added a proper introduction to my story, added accessible functionalities and buttons. I was advised to design more holistically than in isolation. All feedback was synthesized and incorporated into the next round.

## 2<sup>nd</sup> prototype iteration

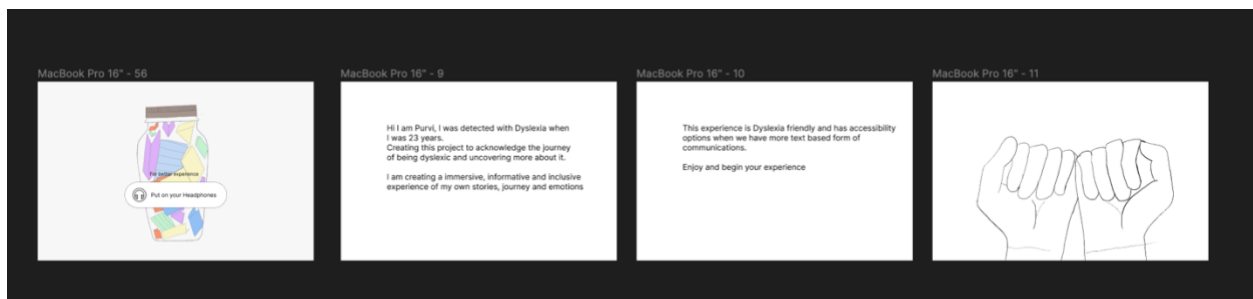


Figure 35: Prototype 2 -Introduction section explorations (Author Image)

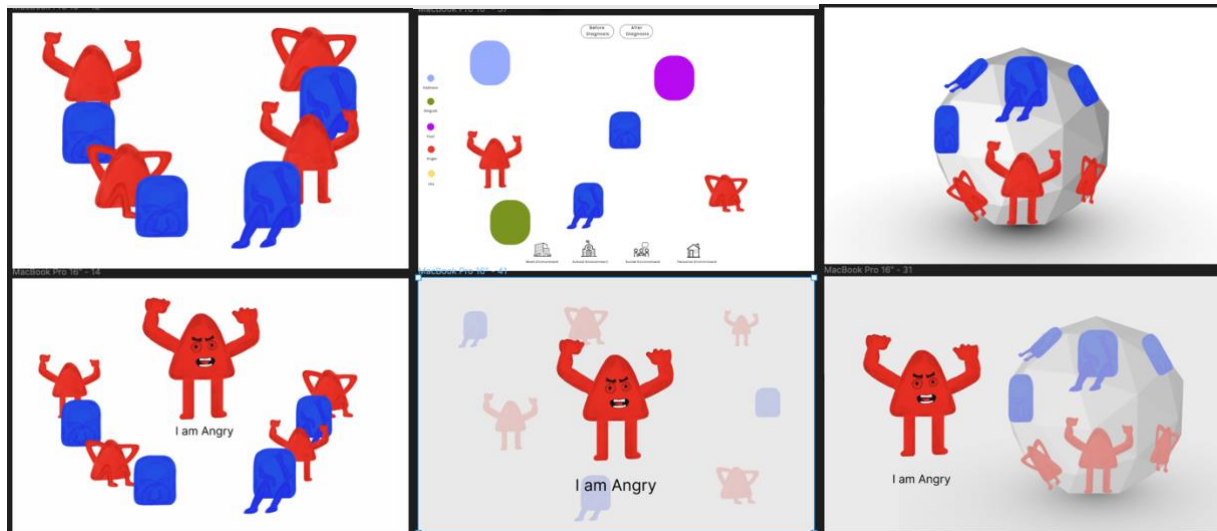


Figure 36: Exploration of the homepage navigation and interaction- Circular style hover interaction, Open layout with hover interaction, 3d style with hover interaction (Authors Image)

After receiving feedback on the first iteration, I added introduction screens and a home page (overview page) as shown in figure 35. I refined other minor details while introducing different characters, considering the suggestions from the feedback. I focused on the following questions during the prototype 2 designing:

1. How do I maintain the intrigue for the viewers to explore?
2. How do I make it personal and add layers to my story in the introduction?

I also studied various interactions, such as hover, after delay, mouse enter, and key pressing, to bring in more functionalities and engagement for the viewer. I explored different layout forms for the landing page/homepage, such as a 3D structure, a circular structure, and an open layout with hover interaction as shown in figure 36. I also added a summary of the project and referenced dyslexia-friendly interfaces. I revised the introduction to increase engagement using additional animations and visual illustrations.

I constantly referenced accessibility guidelines to provide control, choice, and familiarity, creating an interactive engagement space.



Figure 37: Each emotion page with stories in it. Showcasing the environment and emotions side navigational panels (Authors Image)

Feedback on this iteration was that colour could not be a filter of data for emotions and environment. It could be confusing and problematic for people to understand as shown in figure 37. After multiple homepage revisions, I decided on an open layout with hover interaction, as it felt the most natural and allowed the information to be viewed together. I used real data to design and train the interface and prepare for any challenges that would arise.

While designing screens, I considered the purpose of each page and accounted for all kinds of use cases to ensure the designs were holistically developed for the viewers/participants. These were some critical considerations for the next iteration of the design.



As the designs are created for the screens, it is essential to consider each screen, the purpose of the page and account for all kinds of use cases to ensure the designs being more holistically developed for the viewer/participants. These become some key consideration during the making process for the next iteration of the designs.

### 3<sup>rd</sup> Prototype iteration

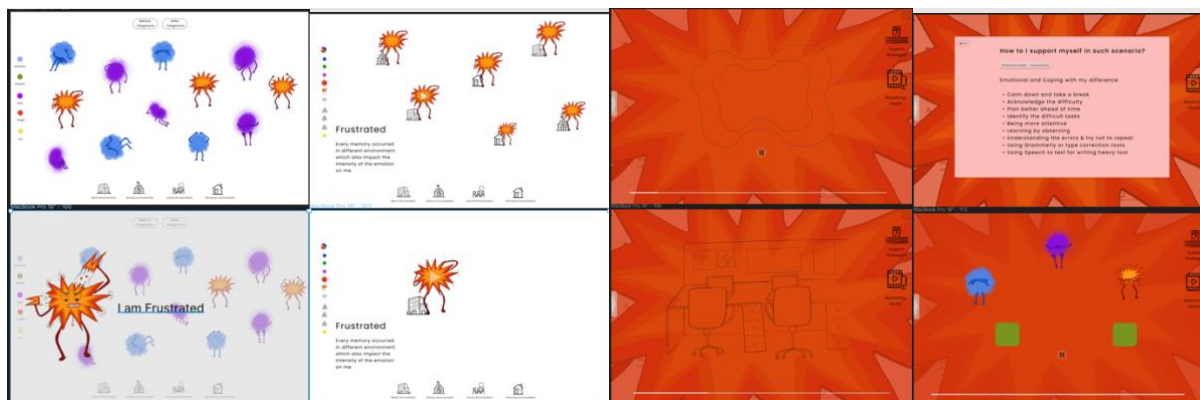


Figure 38: Prorotype3- The final flow of emotion and a story from the emotion with the final characters (Authors Image)

In this iteration, I added minor features and refined environment icons, navigation, and interactions with consistent and simple elements. I added a play and pause button, a subtitle screen, a support strategies screen, and a reasoning library screen, enabling seamless navigation between them. The major change in this version was creating clickables with smooth interactions and after-delay interactions. I edited and reduced the number of stories and emotions to avoid visual confusion in the experience.

I finalised the position of the navigation bar and all screen designs. I ensured uniformity and familiarity, adjusted the alignment, and added finishing changes to the characters. I created a clean, workable flow in Figma for the testing phase.

Apart from basic hygiene checks (fonts, colour contrast, and sizing), I audited this iteration to ensure that the prototype had the following features:

- It lets users take control during the story narration by adding a progress bar, enabling them to navigate easily (with backward and forward and play and pause buttons).
- It enabled a background contrast checker for readability and compliance with W3C<sup>112</sup>.
- Audio stories eliminated the text, and visuals were added to each story.
- It lets viewers choose and customise story subtitles, allowing them to read at their pace. Additionally, the Immersive Reader option ensures an accessible text-reading facility.

Incorporating feedback on this iteration, I added further refinements to the web design. On recommendation, I considered colour-blindness in my designs with red and green, as it is the most common colour vision deficiency.<sup>113</sup> I maintained a consistent environment icon and allowed scope for errors and the possibility to undo actions for the viewers/audience. I also revised the support and library buttons and their introduction to the experience.

The last major design feedback was adding another dimension to the timeline to showcase the personal journey, progression, and changes over the

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<sup>112</sup> <https://contrastchecker.com/>

<sup>113</sup> [https://projects.susielu.com/viz-palette?colors=\[%22#f9e104%22,%22#ea362b%22,%22#b709f0%22,%22#10a80c%22,%22#a6a8ff%22,%22#ffffff%22\]&backgroundColor=%22white%22&fontColor=%22black%22&mode=%22deuteranomaly%22](https://projects.susielu.com/viz-palette?colors=[%22#f9e104%22,%22#ea362b%22,%22#b709f0%22,%22#10a80c%22,%22#a6a8ff%22,%22#ffffff%22]&backgroundColor=%22white%22&fontColor=%22black%22&mode=%22deuteranomaly%22)

years. I also emphasised the representation of myself before and after diagnosis to highlight the awareness and changes dyslexia made in me. I analysed the timeline and wrestled with the idea of linearity as I continue to have similar emotions but in a different context. By assessing the timeline feature, I understood that presenting and visualising the journey for the viewers would help them relate with me. I carefully assessed my designs and mapped the possible scenarios to avoid missing a certain experience.

#### 4th prototype iteration



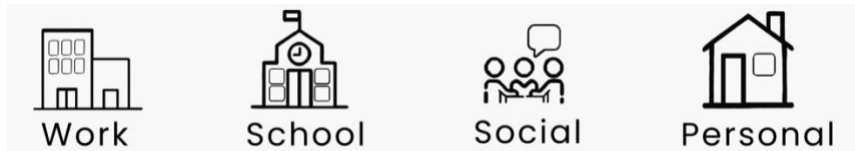
Figure 39: Prototype4 -Timeline created from birth to future, and different colours denote the percentage of the different emotions in that year (Authors Image)

In this iteration, only a few adjustments were made. In addition to the timeline, I had to map the stories based on the time of their occurrence and saw patterns emerging (figure 39). I created a video to display a quick preview, introducing the journey.

The timeline illustrated that with each year, my emotions enhanced. I continued adding to the timeline to maintain familiarity for the viewers across the experience. I implemented the timeline on the homepage, each emotion page, and the story page. The other filters of emotion, environments, and timelines created multiple permutations and combinations across experiences on the web and mobile.



Figure 40: These are the environment icons created, which looked different from each other (Authors Image)



*Figure 41: These environment icons are familiar with each other and have the same details across the icons (Authors Image)*

Because all environment icons were hand drawn, it was important to maintain consistency across the icons. I reworked the details and stabilised the icons illustrations as shown in figure 40 & 41 (refer Appendix: F to learn more).

After making the adjustments within the experience, I implemented them on the final web designs and proceeded to the following testing sequence.

#### *4.3.2 Mobile design iterations*

I designed a mobile version to cater to and access a larger audience. Mobile phones and applications have become the primary way of communication for many people. Therefore, the core objective of my project was to make the mobile design inclusive and accessible. After multiple feedback sessions, I created the mobile version, along with the web version. I needed to create a mobile wireframe that maintained the same visual language of the web experience. The navigation for mobile phones had to be different because of the touch-based interaction, which limited the gestures. The information and content must be adjusted to fit the smaller screen size. The content should be decluttered and minimal, reducing any visual disruptions and facilitating ease of navigation. I redesigned some screens to

visualise usability and cohesion. I also examined and experimented with existing mobile phone layouts.

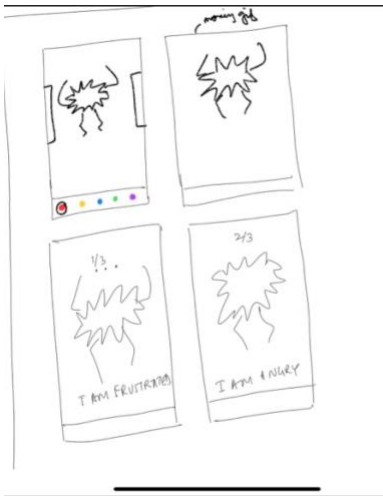


Figure 42: Phone screen explorations and their wireframes (Authors Image)

Though the mobile screen was simplified, the main content did not change within the experience. The mobile screen was quicker to design as the visual language was imported from the web screen. The interactions required more detail as the transitions between the screens were limited to touch and click, after delays, vertical and horizontal scroll, and the same basic gestures as back and sideswipes.



Figure 43: Mobile - Introduction flow in mobile with the introduction of the project, animation, and timeline video (Authors Image)

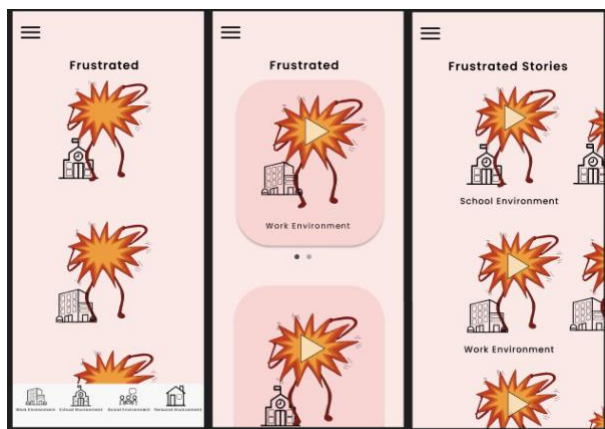


Figure 44: Mobile- Experimenting with the display of environments – bottom navigation bar, card style, vertical & horizontal scroll (Authors Image)

In the figure 44 shows the filter option for an emotion in an environment. I employed the card style and scroll option in horizontal/vertical styles. The bottom navigation style resembles the navigation in most apps, as I chose a familiar system per design guidelines.

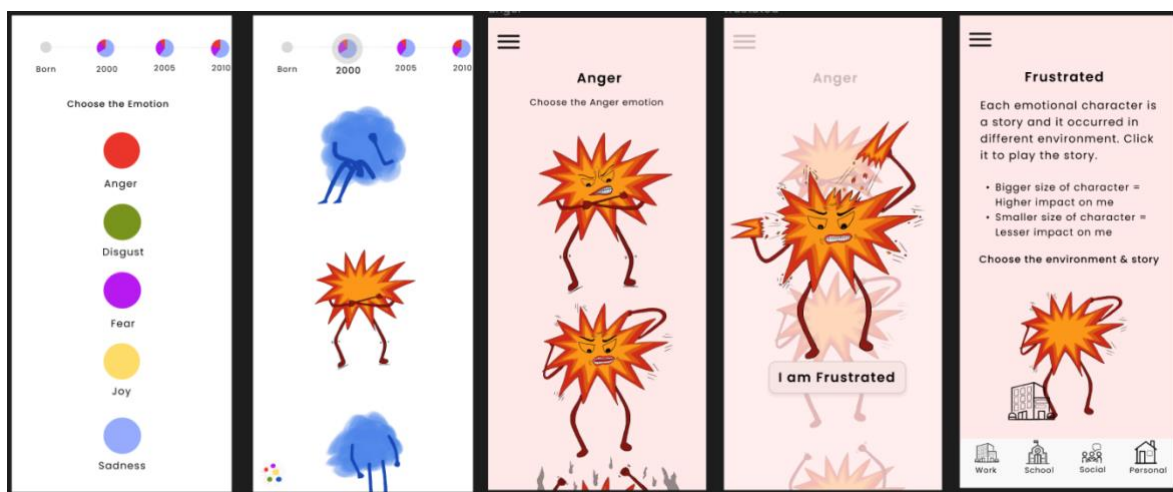


Figure 45: Mobile -This is the flow of the mobile screen - The homepage, timeline selection, anger emotion category, choosing 'frustration emotion', 'frustration story page' (Authors Image)

The figure 43 is a representation of the story and its functionality of play, pause, support, library, and subtitles buttons.

While auditing, I conducted a hygiene check with all accessibility measures, such as background contrast, font size, readability, and language

usage for mobile-specific requirements. The timing and readability in the video clips had to be set correctly. I ensured the controls and navigation in the mobile experience were free of lagging issues, maintained easily clickable (touch click) items, and provided choices to the viewer.

I checked for grammar and language errors across the experience and eliminated repetitive phases. I rearranged the emotions alphabetically based on feedback. The readability was an issue with certain buttons due to their long title. Shortening the title eliminated the problem of font size. I also incorporated a help page with basic navigational guidelines for the viewers.

Incorporating the feedback from the various sessions helped me refine the design before testing. The recommendations and suggestions shared in the feedback sessions were valuable in garnering a newer perspective on the design.

#### 4.4 Testing prototype

Testing was conducted for mobile and web designs as different screens have different challenges and navigational properties. The three main goals of testing are:

- To understand if participants grasp the concept of the website/mobile experience
- To understand if participants are seamlessly able to navigate through the experience
- Conducting quick usability testing sessions for feedback from the participants

#### *4.4.1 Test Participants*

Test participants consisted of seven participants, a mix of neurodiverse (ADHD, autistic, and dyslexic) and neurotypical individuals. This diverse set of participants broadened the scope of usability and helped me gain an assortment of feedback. Testing helped me eliminate any problematic or missing interactions, improving and making it a seamless experience.

#### *4.4.2 Test Results*

There were some common insights across the platform, whereas some insights were exclusive to the both the platforms respectively. These included mobile navigation and overloading information on the web.

#### Commonalities (web & mobile)

- The characters were enjoyable, and the stories were relatable to neurodiverse participants. The character illustrations were delightful, and visual storytelling was a great representation. The neurotypical participants were intrigued by the stories and recognized the depth of emotions. The support and library buttons were valuable because they provided resources and strategies. A disclaimer was required to explain that the experience was personal and not recommended by a medical professional. The audio stories generated empathy and were relatable but lacked visual cues and storytelling. I needed to connect the audio with the visuals, using connectors like "this was my workspace where it



felt like..." I also added more pauses and background sounds to depict discomfort, annoyance, and other feelings through auditory inputs.

#### Differences (web & mobile)

- The **mobile platform** was well received in terms of being decluttered with information, relatable, and playful and emotional visuals. The design was simple, soothing, and not distracting for neurodiverse participants. The navigation in the prototype version was glitchy. Some basic navigational prompts were missing and required more assistance to move ahead in the experience, such as the timeline not being clickable. There was a need for some prompts/nudges on the screen to clearly indicate forward or backward gestures in the experience. To resolve the issues, I added prompts like swipe gestures and blinking buttons to suggest they were clickable. The use of language prompts needed to be clear and not confusing. For example, 'choose your emotion' was interpreted as selecting the participants' emotions. The language prompts had multiple interpretations, which caused misunderstandings. The focus was to make the navigation experience more precise and intuitive for the participants/viewers.
- The **web platform** had an open layout, fitting more information within the screen space. The experience of filters with the timeline, emotions, and environments was favourable to connecting with the material. Exploring the homepage led participants to discover added information and connections. The website prototype was not linked as it was in

progress during the testing phase, which caused additional discomfort to the participants. The information on the website was overwhelming and required more guidance to comprehend through an additional onboarding tutorial. The hover interaction on the home screen could be distracting because of too much movement and abrupt changes. Minimising the movement triggered by the hover interaction would reduce the distraction.

#### *4.4.3 Auditing Test Result*

I audited the feedback with the web accessibilities guidelines to ensure the feedback is compliant and applicable for dyslexia (ref-3.3.1). The following are a few of the audited modifications in the project added after the feedback:

- I added intuitive navigational prompts that gave more control to the users (viewers).
  - o I created an onboarding tutorial for the website to help users (viewers) navigate through the experience.
- I used familiar and common gestural prompts within the mobile experience to make it easy for the users (viewers) to understand the navigational gesture immediately.
  - o For the audio, I added more character in the voice by adding a sigh, deep breath to showcase more impact on the listener. Connecting the audio with the illustrations by using the visual cues and adding some external appropriate sounds in some of the audios to increase engagement.

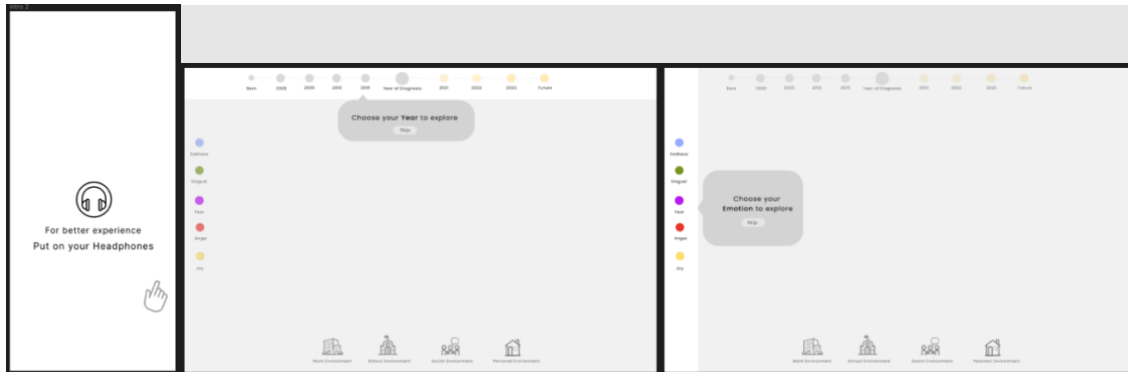


Figure 46: Hand icon for prompting in mobile version, quick filters using tutorial in the web version (Authors Image)

## 4.5 Building and Coding Website/Mobile

Building and coding the website and mobile experience was the final stage. I had technical support and assistance to code the website and mobile experience, as I am not technically equipped to self-code an entire digital experience. The programmer and I decided to build the experience on Webflow (software to create websites) as it allowed the inclusion of custom coding and multiple third-party integrations. While the programmer worked only on implementing and coding the designs, I created the designs and made decisions. This process had technical support and consultancy to ensure an optimal experience for the viewer. Coding and debugging required a lot of assistance and interactions. Some minor design-level tweaks were required to reduce the technical load without compromising the general accessibility of the website/mobile experience.

## 4.6 Final Project Results

This section includes a description of the final project, the launch of the digital experience in the online dyslexia community, and reflections on the reactions.

### *4.6.1 Final project description*

This project is a personal narrative of a dyslexic adult with a late diagnosis, conveying the stories and emotions through an interactive digital experience (web and mobile). The final project has a website with additional information and carefully categorised content to allow viewers to explore freely. The final mobile experience is easier to navigate and has simplified content that respects screen size. The content of the project is distributed into emotions, timelines, and environment segments. The support and library buttons provide additional resources for each story. The Microsoft Immersive Reader plugin makes text-based content accessible. Every story has attached subtitles to give the viewer choices. The final project aims to create a wholesome experience for every viewer on both platforms. The exhibition

design and reflections are included in Appendix: H by 12<sup>th</sup> April.

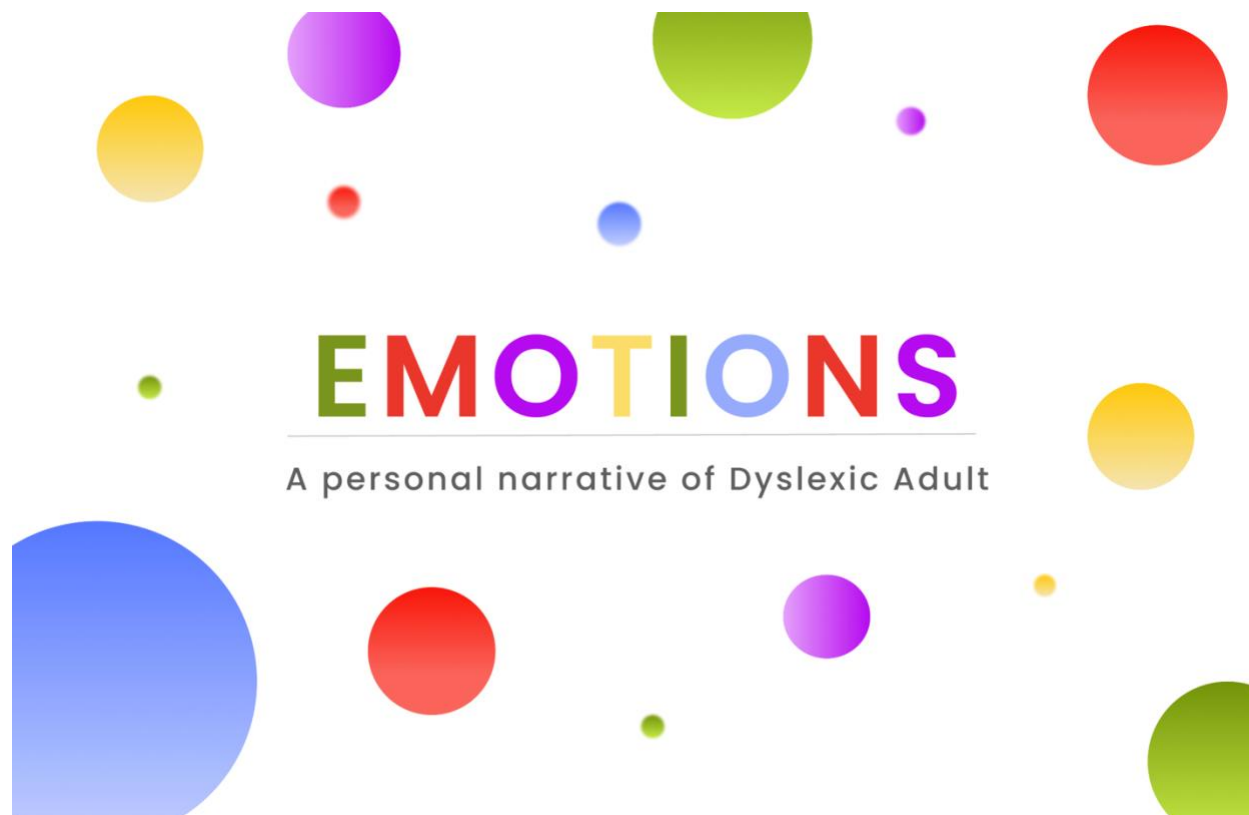


Figure 47: Final web experience opening page (Authors Image)

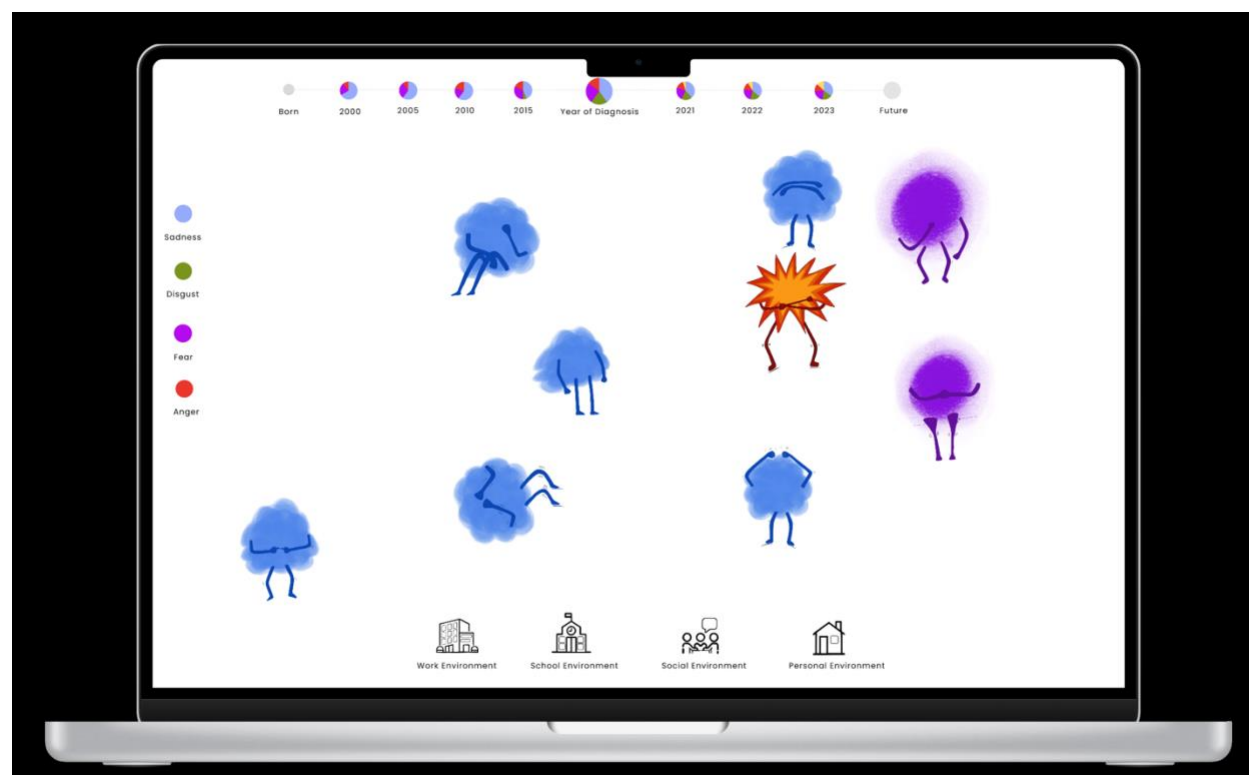


Figure 48: Final Web experience- Home page (Authors Image)



Figure 49: Final web experience in the audio story page with story illustration (Authors Image)

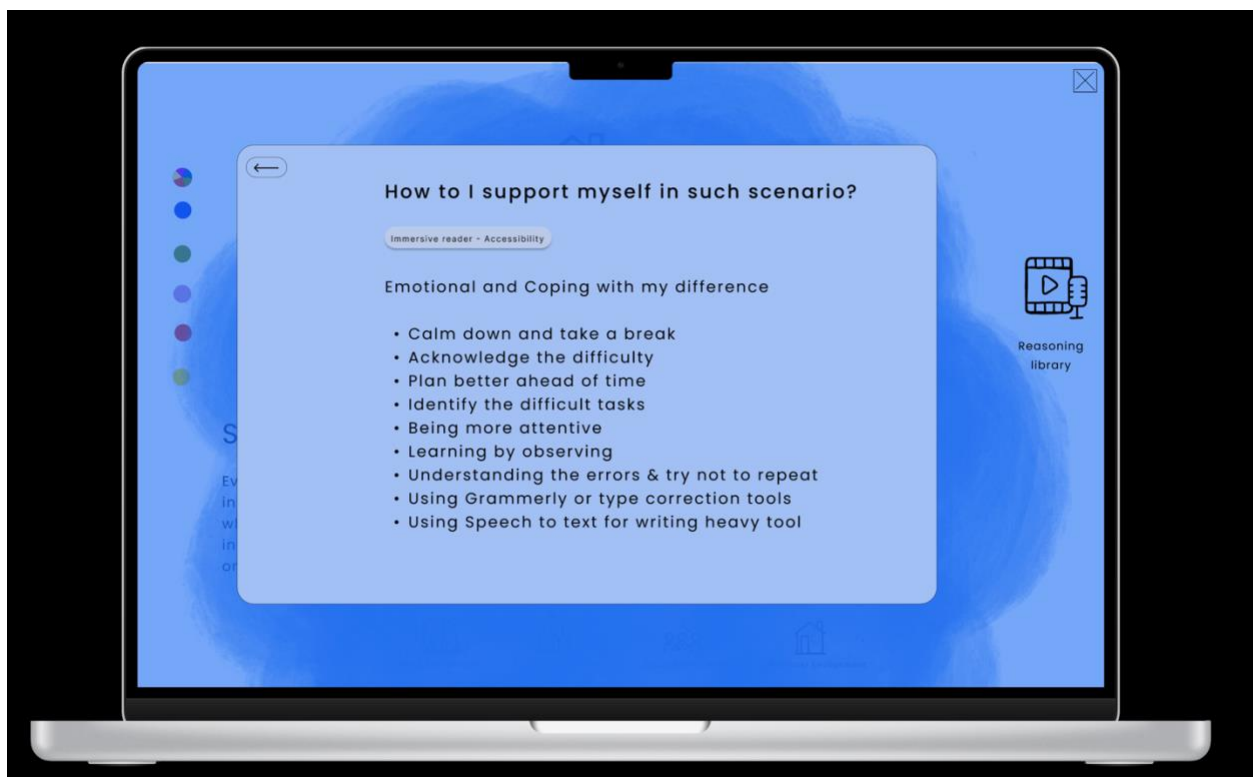


Figure 50: Final web experience capturing the support page section (Authors Image)



Figure 51: Final mobile experience with the homepage (Authors Image)



Figure 52: Final mobile experience with the 2 emotion pages Anger and fear (Authors Image)

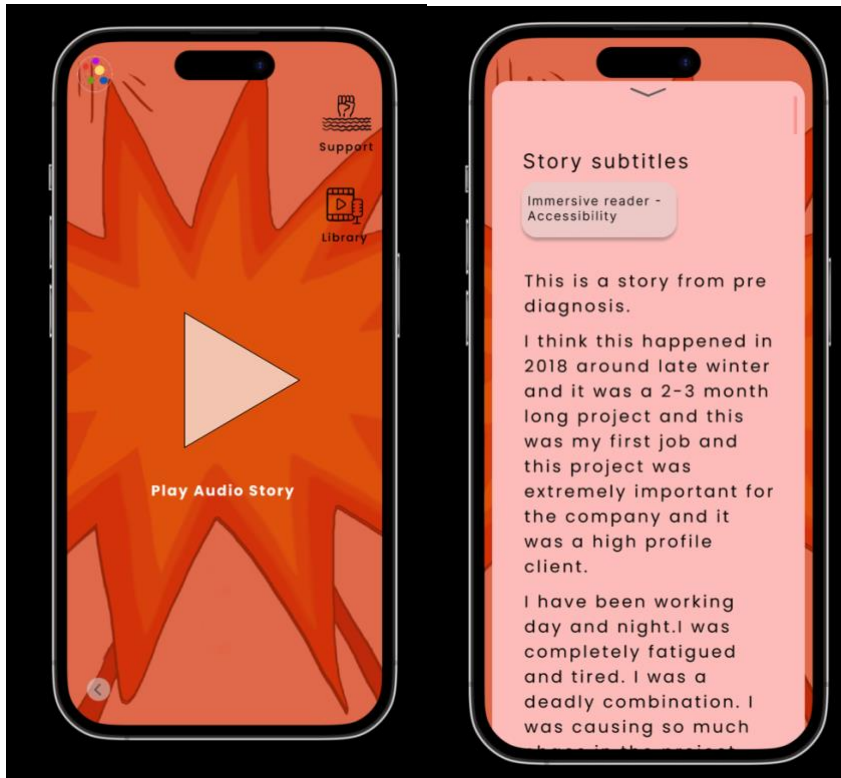


Figure 53: Final mobile experience with the audio story and subtitle of the story page (Authors Image)

The URL for both website and mobile is a common and depending on the device you access the URL you would witness the specific experience. (Please view both the experience on respective devices.)

Digital experience (website and mobile) - [www.Dyslexiaemotions.com](http://www.Dyslexiaemotions.com)



## 5. Conclusions

Clear connections between the project sections emerged as the project progressed. I segregated the literature review into three sections: dyslexia in adulthood, inclusive design approach, interactive documentary, and narrative with proper information structuring to accommodate the topics covered in the resource materials. The research-creation methodology covers the intersection of the various disciplines. The primary methods used are autoethnography, design research method, and iterative design method, which support multiple stages of development, such as data creation, data collection and research, and designing using that data. The multiple iterations of prototyping and character development led to an improved version of the characters and platforms (web and mobile). The final testing phase enhanced structuring the prototype through audience feedback and solved minor issues within both platforms.

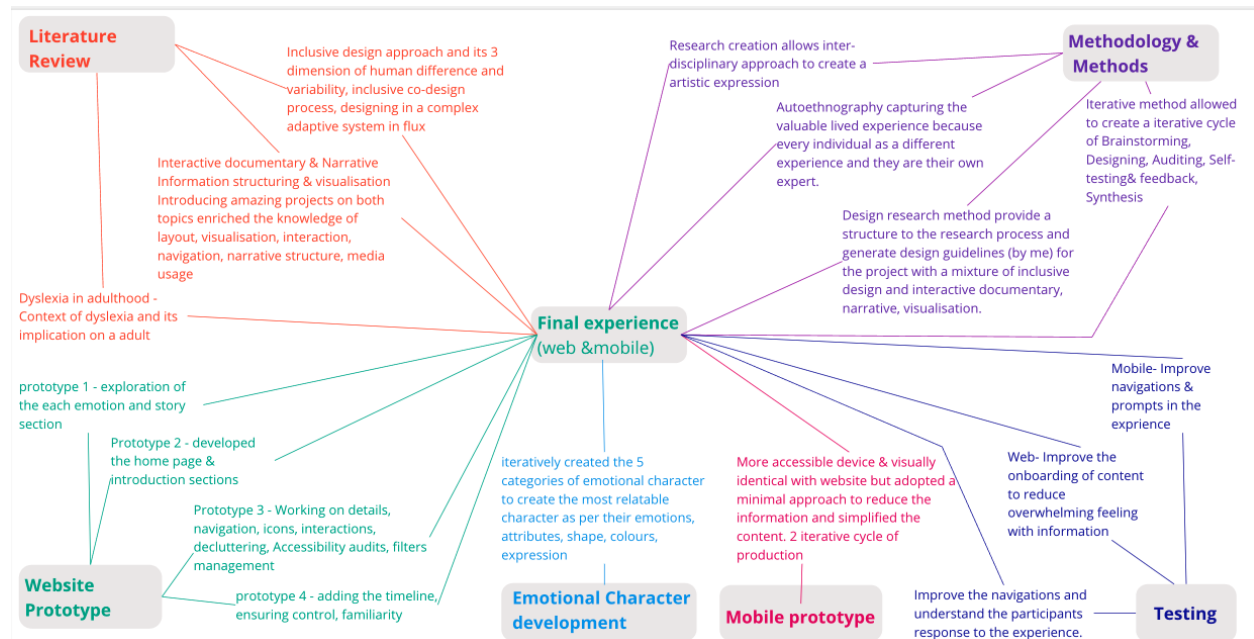


Figure 54: Showcasing all the project connections with the final project (Authors Image)

This figure 54 illustrates the interconnections between the project elements and their contribution to the final experience creation for both web and mobile.

The interactive and inclusive digital experience captured and presented my stories in an accessible, relatable, and educational format to reach a diverse audience. The testing process yielded favourable insights. The participants found the experience engaging, relevant and informative. Accessible software, the Immersive Reader, and accessibility guidelines and rules embedded in the design process helped me maintain uniformity. The interactive narrative style, multi-media format, and inclusive strategies foster engagement and help generate dialogue with the audience.

## 5.1 Reflections and learnings from the project

The project taught me a lot about my dyslexia and significantly affected how I viewed myself as a dyslexic adult. By revisiting and evaluating memories through an emotional lens, I discovered the missing links and information that gave me an insight into my dyslexia and personal development.

The inclusive design thinking and approach introduced a new way of inquiry. Through research, I realised the power of community. The primary learning from inclusive design was to embrace your experience and differences.

By engaging with examples of interactive websites, documentaries, and narrative structures, I gained valuable insights into understanding information design, types of interactions, navigations, and linear and open narrative

structures. These learnings assisted me in designing my experience and creating a personal yet shared and accessible experience.

Through the project, I gained valuable skills like designing a digital experience. I studied multiple use cases of viewers and considered the feedback and recommendations. The testing phase was intriguing, providing an outside perspective and the project's usability. Though I was blindsided by the designs, and a few prompts and navigational issues were challenging, I sought assistance and resolved them in the final experience.

Overall, the project was a great learning experience for me. I achieved personal and technical goals of understanding my dyslexia and gaining digital design experience. Collaborating with a programmer and learning new software contributed to my technical knowledge.

## 5.2 Next steps of project

### *5.2.1 Launching digital experience with online dyslexia groups*

I will be sharing the website and mobile URL with my online self-help community so that other community members can easily use this experience by uploading a post. I have been using multiple Facebook communities, which provide a safe space for discussion. Sharing my digital experience in these spaces would allow members of the dyslexic community to respond or react to the experience voluntarily. I plan to observe the impact of the experience in the online community. The project is a personal journey narrated through a specific medium, and I would like to understand their takeaways after engaging with the experience. I have received the REB to get

feedback and quality assessment from the online community (Ref -Appendix: A Personal REB, 3).

### *5.2.2 Future of project*

It is my plan to continue to build on this project in the future and outside the realm of this thesis. Similar to projects examined earlier, this could be a living platform to share my experiences and other resources that I encounter with the community. Some of the additions I envision for the project are:

- I plan to add more personal, nuanced stories.
- I plan to expand the experience to include the community and diverse stories. Future iterations would allow community members to add their stories in their preferred format. As a creator, I would encourage members to consider inclusive formats when sharing their content.
- I also envision the possibility of connecting digital self-help groups to the website, creating a wider, inclusive space for conversations. The power of community and sharing is significant, which would be an important goal for the project.

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## Appendices

### Appendix A: Personal REB

#### *1. Consent for the Family and Close friends*

I would like to get your consent to be able to use our conversations/dialogue in the thesis document and digital platform which would be public. All the information shared would be anonymous, codified and completely confidential. Nobody would be able to join the date to connect and identify you. Only the researcher would have access to the information in the raw data. You would be able to access the thesis document on OCAD U's Open Research Repository and the digital experience link will be shared with you before being publicly available. You would be able to remove any of the comments made by you before the experience is public as the experience will be shared with you before being public. All the raw data collected will be deleted after 6 months of completion of the *thesis project*.

.....(please tick) Yes, I consent to the dialogue being shared publicly.

Dialogue with family and close friends - for autoethnography purpose

Area of discussion

- What were your memories of my studying? (writing, reading, spelling

troubles)

- What were certain things that stood out about me in your experience or memory?
- What were my weakness according to you?
- What were my strength according to you?
- Do you think I had issues with critical thinking, detailing aspects, and coherently writing certain things? Do you remember any of it?

## *2. Informed consent for myself*

### Autoethnography as method

In conducting this research using Autoethnography as a research method will have implications on my own self and well-being. I am fully committed to uphold the ethical standards to keep my emotional and mental well-being intact throughout the research process. I understand the impact of the auto-ethnographic process on my state of mind, and I have insured protective mechanisms for my own self. In this journey of self-discovery and reflections safeguarding my own mental status has been my topmost priority. I am comfortable sharing my own stories, observations and reflections of my past and present memories about being a dyslexic adult. I explicitly talk about my emotional status in the stories as well as my challenges related with dyslexia in that particular situation in the story. I am audio narrating different stories across the age group of 7 to 27 years of my life and vividly describing those moments, situations and consequential impact on myself. I am categorizing all my stories through different emotions and mapping the connectedness of those stories through the emotions. I am also mentioning about the different support strategies adopted by myself in different situations and attaching different resources such as podcast videos, books which further validated or reasoned my own behaviour for myself. I am completely candid in my stories as sharing can be a huge part of learning and spreading awareness specifically in the dyslexia community. I have been using reflexive auto ethnography as a method to have self-awareness, self-consciousness and understanding to further support my own differences and

challenges. I have been consuming a lot of resources from documentaries, videos, podcast, books about dyslexia in adulthood which has been quite an enlightening journey of information. Through these resources, I have been constantly reflecting while consuming about my own experiences and moment of realization of similar incidents happening with me. I have been mind mapping all the relatable information and created a structure for my own story to ensure my own protective shield. I mention the moment of challenge, context of the situation, emotions related to the story and impact on my wellbeing through those stories. I have been conscious to filter and edit the stories which seemed extremely personal and crossing my own boundary. I have planned to detach from the exercise if it begins to affect my own mental status by taking a break or revisiting it after a couple of days. I am also removing the stories which seemed more triggering and painful for myself to ensure emotional check on myself. I have been journaling through the process which has been helpful to bring down all the thoughts from my head space into a paper or computer which reduces the constant process of overthinking about it. I am constantly trying to treat the stories as a normal story occurred in my life to eradicate the moment of emotional breakdowns. I aim to be very clear about my own connections in the stories and the viewers would be able to identify me because the component of lived experience is the most crucial element to build credibility and confidence with the viewer/audience. As the researcher and the designer in this project, my role is to ensure digestible, informational, and accessible content is expressed through my personal narratives. I am bringing the challenging and

painful moments to the surface but it ensures a full cycle of healing and embracing my own self by accepting my own mistakes. Ultimately this Interactive storytelling experience is deeply embedded in life and I'm trying to bring it out through colours, shapes, emotions, animation stories and information in a virtual world.



### *3. Next steps of Feedback and Quality Assessment*

*In the next steps of the project, I would create a discussion to observe the feedback and understand the impact of the project among the dyslexia community with adults. I am currently a part of a social media support group for dyslexic adults to share their concerns, challenges and just everyday life. I would be sharing my project with the support group in the discussion forum and observe the feedback received from the group. The aim is to understand the impact of the project and the support it provides in the community. I as a creator would like to see the benefit or negative comments from the work to understand if anything else could have been done differently.*

## Appendix B: Class REB

### *1. Invitation Template*

#### **Invitation Template**

Date:5.02.2024

Dear

You are invited to participate in a user testing for a research-creation prototype created as part of the Digital Futures Thesis course at OCAD University. The purpose of this testing is to provide the Graduate Student Investigator with feedback leading to iterative development of the prototype work. You will find a specific description of the project being tested, and what you will be asked to do as part of this testing accompanying this email, including the known benefits and risks of the project being tested.

Participation will take approximately 20 minutes of your time (including any follow-up data gathering). Your feedback is confidential, but may be documented using observations, video recording, photography, follow-up interview, or written transcription. You will be testing the prototype individually or part of a small group.

Data collected is intended for internal use of the investigator and will not be publicly disseminated in any way. Should the researcher wish to report an

observation, feedback notes, quote, or image you will receive a follow-up request with the specific request for your consent.

If you have any questions about this study or require further information, please contact the Principal Investigator, Purvi Agarwal at [xxxx@ocadu.ca](mailto:xxxx@ocadu.ca) or the Faculty Supervisor using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at OCAD University REB Ref 2024-10. If you have any comments or concerns, please contact the Research Ethics Office through [research@ocadu.ca](mailto:research@ocadu.ca).

You may withdraw your participation and consent at any time by contacting the researcher or faculty supervisor.

Principal (or Student) Investigator:  
[Purvi Agarwal, Digital Futures, student]  
OCAD University  
[4000000; [xxxx@ocadu.ca](mailto:xxxx@ocadu.ca)]

Faculty Supervisor (if applicable):  
Emma Westecott  
Digital Futures  
OCAD University  
[xxxx@ocadu.ca](mailto:xxxx@ocadu.ca)

## 2. User Testing Consent Form

### User Testing Consent Form

Date: 5.02.2024

Project Title: Experiences of a Dyslexic Adult

Graduate Student Investigator: Purvi  
Agarwal

Faculty Supervisor:  
Dr. Emma Westecott  
Faculty of Liberal Arts &  
Sciences OCAD  
University  
[xxxxxxx@ocadu.ca](mailto:xxxxxxx@ocadu.ca)

#### **INVITATION**

You are invited to participate in user testing for one or more research-creation prototypes created as part of the Digital Futures graduate theses work at OCAD University. The purpose of this testing is to provide the Graduate Student Investigator with feedback leading to the iterative development of the prototype work. No more than 20 participants will be recruited for each individual study. This research may contribute, in part, to the Graduate Student Investigator's thesis or MRP in Digital Futures.

#### **WHAT'S INVOLVED**

As a participant, you will be asked to test, and give feedback on prototype(s) created as part of thesis work. Observations from this testing may be collected through interviews, video recording, photography and/or surveys. Participation will take approximately 20-30 minutes.

#### **POTENTIAL BENEFITS AND RISKS**

Possible benefits of participation include the opportunity to see innovative research-creation work at the prototype stage and help inform its iterative development. Participation in this testing involves

minimal risk. However, if you have any concerns about the nature of the testing at any time, you are encouraged to reach out for clarification or details.

#### CONFIDENTIALITY

All information you provide is considered confidential. Your name will not be collected or associated with the data collected in the study. Please note, however, that you may be identifiable in any recorded documentation, and in testing involving multiple participants. This material is intended for the internal use of the Investigator and will not be disseminated. Data collected during this study, including recorded data, will be stored on a secure physical or virtual drive, or on paper stored in a secured location, and kept until mid-May, after which time it will be securely deleted or shredded. Access to this data will be restricted to the Graduate Student Investigator and Faculty Supervisor.

#### VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the user testing. You will be permitted to withdraw from user testing, and/or to have your data withdrawn, at any time before, during, or after testing upon request to the Graduate Student Investigator or Faculty Supervisor, at the email above. Please be aware, however, that it will not be possible to withdraw interview or observational data following user testing, as the data collected will not be identifiable. There are no incentives provided for participation in this study.

#### PUBLICATION OF RESULTS

Data collected as part of this study is intended for the internal use of the Student Investigator, to inform iterative development of the prototype work(s) being tested. No raw data derived from this study will be published, including photo and/or video documentation from user testing. However end results of this study may be published in the Student Investigator's thesis or MRP report. In any publication, interview and/or observational data will be presented in aggregate forms. Comments or insights expressed during testing will not be published.

#### CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please contact the Graduate Student Investigator or the Faculty Supervisor using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at OCAD University, REB Ref 2024-10. If you have any comments or concerns, please contact the Research Ethics Office through [research@ocadu.ca](mailto:research@ocadu.ca).

#### CONSENT TO TEST

I agree to participate in user testing for one or more research-creation prototypes created as part of Digital Futures thesis work at OCAD University.

I have made this decision based on the information I have read in this Consent Form.

I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future.

I understand that I may withdraw this consent at any time.

Name:

Signature: \_\_\_\_\_ Date:

Thank you for your assistance in this project. Please keep a copy of this form for your records.

### 3. User Testing Follow-up Interview

## **User Testing: Follow-up Interview**

[ Date ]

Tester Information

Tester number: [001] Testing alone [ ] or in a group [ ]

Other relevant context:

Test Session

Initial impressions: Questions

1. What was your first reaction to the [prototype / experience / work]?
2. What is the first thing you wanted to do?

Testing: Questions

1. Describe in your own words what you [did / saw / experienced]?
2. What did you find confusing or unintuitive?
3. What elements did you find particularly engaging, rewarding or interesting?
4. If you participated with others, how did their presence impact what you [did / saw / experienced]?

Reflection: Questions

- How would you describe this [prototype / experience / work] to someone else?
- Rate your level of engagement with the [prototype / experience / work] (1 none ...10 high)



- Rate your understanding of the [prototype / experience / work] (1 none ...10 high)
- Rate your prior experience with this type of [prototype / experience / work] (1 none ...10 high)
- What did you feel were the strongest aspects of this [prototype / experience / work]?
- What did you feel were the weakest aspects of this [prototype / experience / work]?
- What kinds of things does the [prototype / experience / work] remind you of?
- What questions do you feel weren't satisfactorily answered during the testing?

## Appendix C: Recording the Audio Stories

The audio-based stories are an integral part of the experience, and making it accessible and engaging is extremely important. The audio-first narrative provided an intimate and emotional perspective, connecting to the audience/viewers better (ref-2.4.1). I began by writing the basic flow chart of each story and recorded them, adding more details to the audio stories.

- I created sample audio stories. Based on feedback, I synced the audio with the visuals played during the experience to make it more cohesive.
- I used appropriate language and tried to speak with clear diction to make it understandable.
- I also ensured to provide control to the viewer of the audio story with a play button, pause button, and a progress tracker to control the audio at their convenience.

## Appendix D: Support strategies sections

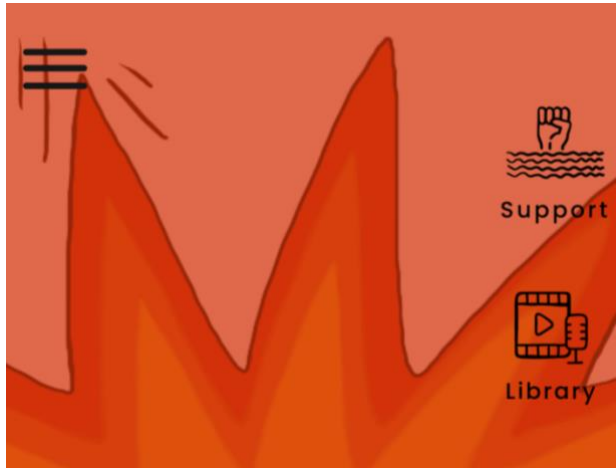


Figure 55: Appendix icons of support and library button (Authors Image)

The support interventions are extremely important and essential for dyslexia. I address it in the design as a button attached to each story. This is because each story occurs in a different context with a different intensity, and different challenges require different support mechanisms. I included my own coping mechanism as I realised it might benefit other viewers, making the experience more holistic.

Deep self-reflections highlighted that my coping mechanisms were exclusively personal to me and were generated due to late diagnosis. These coping mechanisms were like a lifeboat for me in multiple situations. I began listing these coping mechanisms and deeply valued them. The exploration of existing resources on dyslexia provided me with standard interventions available for dyslexic individuals. I began to cocreate my interventions, which was a mix of my coping mechanisms and existing interventions. The second dimension of the inclusive design approach influences the creation of an adaptive model of support strategies. (ref-2.3.2) Co-designing the

intervention strategies is valuable because it provides a more in-depth understanding and mapping of the changing needs. My interventions will keep changing and evolving, which means I need to do trial and error to keep updating my own hybridised intervention strategies.

## Appendix E: Library resources section

The resources were significant, and each story had a resource connected to it, which added to the reasoning behind dyslexic traits. The resources enhanced each story from a personal perspective to a general perspective on dyslexia for the viewers. It would provide more information to viewers about dyslexia, which might enable them to draw a connection for themselves with their dyslexia. The resource button is added to each of the story in the experience.

The resources section became essential as it provided more perspective and validation of my current feelings and awareness. I began to draw connections and reason with my struggles regarding dyslexia. I began to cocreate and unpack the complexity system better when other perspectives were added. The cocreation of intervention was evaluative and adaptive. The complexity of the evolving system was better understood by viewing and discovering the different influencing factors(ref-2.3.3).

## Appendix F: Creating environments

Creating environments and contexts was important because it impacted the intensity of the emotions on me. The environment affected my response and the impact of the incidents. The work, school, social, and personal environments are mentioned in the project because these are important spaces of interaction and impact on me. In the literature review, I have captured the impact of dyslexia on adults in different environments (ref-2.2.4). The inclusive design approach and the third dimension mention multiple layers of influence, and the environment becomes an important layer of influence that needs to be addressed and showcased in the project (ref-2.3.3).

## Appendix G: Project connections

The figure below showcases each dimension and their relationship in the project. The inclusive design approach provided the framework to create personalized criteria for me. The framework had a generative structure, which allowed me to add diverse perspectives collectively. The design framework supports diversification and invites additional insights, promoting the extension of personal understanding. The accountability of adaptivity in the personal structure is essential.

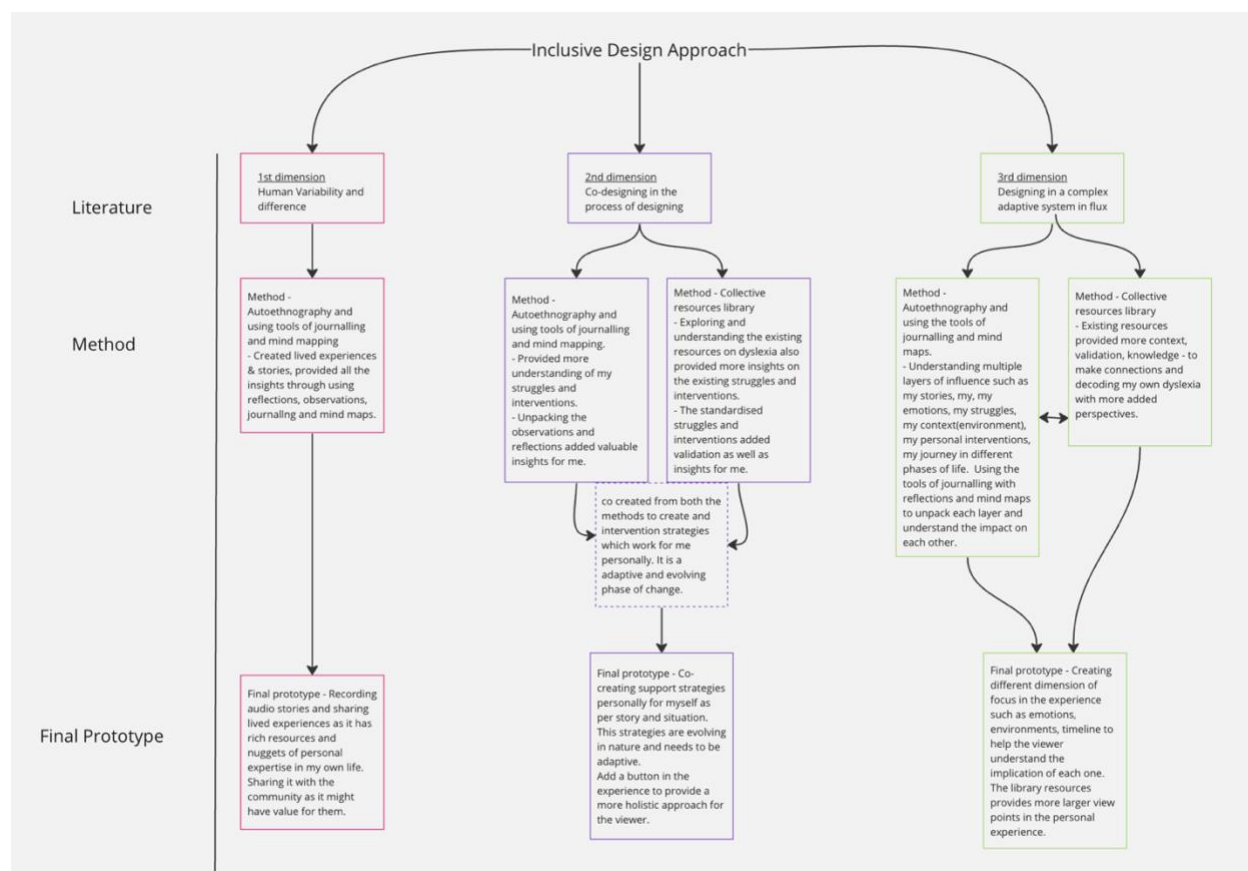


Figure 56: Appendix Inclusive design approach flow throughout the project (Authors Image)

## Appendix H: Exhibition design and reflections

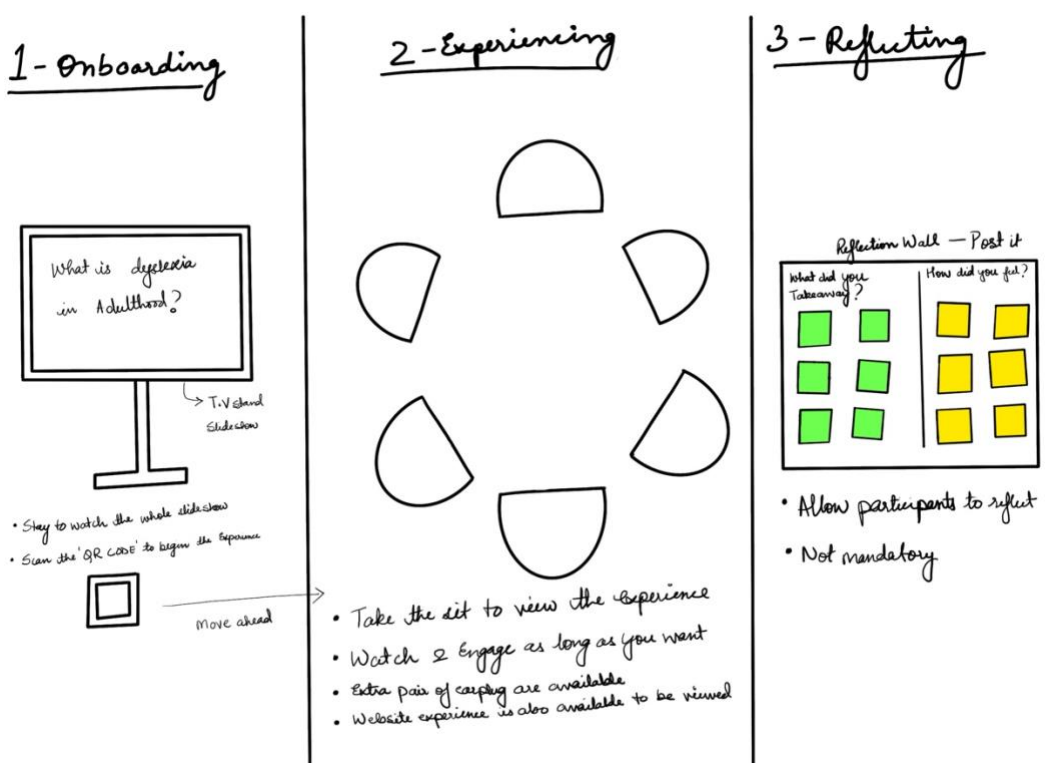


Figure 57: Appendix Layout of the exhibition in 3 stages – Onboarding, Experiencing and reflecting (Authors Image)

This project primarily focuses on dyslexic individuals, the primary audience, but I would like everyone to interact with the experience. For the exhibition with a wide variety of audiences, the set is created in three stages to ensure proper onboarding, engagement with the experience, and a space to provide their reflections. The onboarding stage would educate the audience about dyslexia in adulthood and then take them forward to engage with the experience (on the mobile device). The final phase of the experience aims to create a community while interacting with the project individually. Additional requirements, like headphones and website experience, will be available for the participants. The objective is a reflection stage to allow participants to interact with each other and provide their thoughts on the

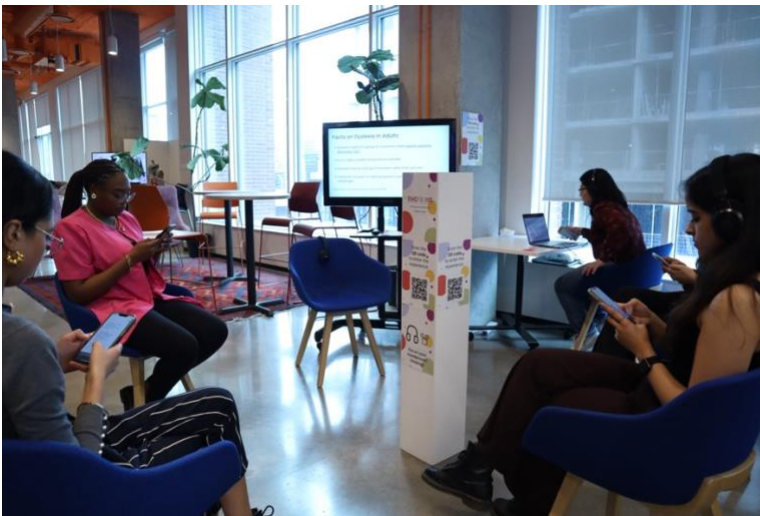


Post-it wall. I will be a silent observer throughout the session and only engage with the participants in the end or beginning stages.

- Reflections from exhibitions



*Figure 58: This was the exhibition setup of the experience to create a community space (Authors Image)*



*Figure 59: People interacted with the experience individually as it audio based and a personal experience (Permission granted from the participants) (Authors Image)*

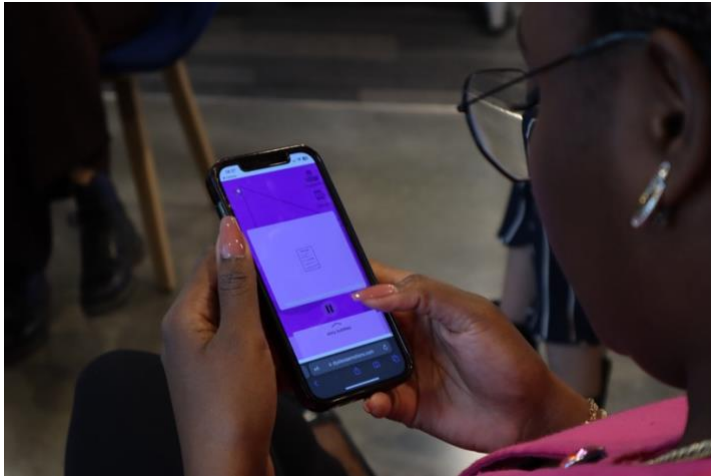


Figure 60: Person interacted with the experience (Permission granted with the individual) (Authors Image)

In the exhibition there was a designated space for the viewers to reflect after experiencing the project. Everyone very naturally grabbed their phones and scanned the QR code of the experience and began to use it. Few viewers spend a lot of time listening to multiple stories whereas few viewers choose to scan the code and decided to interact with it at home because its feature of being easily accessible. The reflection wall allowed the viewers to think and provide their thoughts on the experience. The wall had a wide variety of observations, thoughts and appreciations regarding the experience. The question of the wall was “ What did you take away from the experience?”.



Figure 61: Person reflecting after experiencing the project (permission granted from the individual) (Authors Image)

The visitors mentioned the experience being enjoyable with the characters, interactivity, storytelling, and the drawings. Few viewers expressed their gratitude towards me for sharing such vulnerable stories publicly and appreciated the documentation method. One of visitor said, they felt empathic towards the dyslexic individual regarding their daily struggles and these reflections were valuable to learn about. Another visitor mentioned, they were able to relate to the stories and would like to investigate more into themselves. The reflection which struck a chord in me was the mention of someone feeling less lonely after the experience in their own journey. These thoughts have been valuable for me to understand the perception of the individuals and their takeaways. The project has been extremely personal yet has a community contribution element which seemed more realistic with all these nuggets of thoughts and takeaways. This process has encouraged me to keep working on the project to spread the word and allow more engagement with other people to bring awareness, empathy and relatability.

The only shortcoming in the exhibition space experienced by me was the use of Bluetooth headphones as our devices do not have audio jacks anymore. The whole process to connect to the Bluetooth headphones was a little cumbersome for the visitors which added friction within the experience.