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Nonsense Mistakes of Dyslexia

Exploring dyslexia through typo/graphic conventions

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A research components submitted to Auckland University of Technology in fulfilment of the requirements for the degree of Master of Design. 2023

Abstract

This practice-led design research project uses typography and nonsense literature to reveal a subjective dyslexic condition. The project contributes to the understanding of and provides insights into the dyslexic experience of word comprehension and typographic dysfluency. The dyslexic experience is communicated through two central approaches. Firstly, the designed artefact *Nonsense Mistakes* uses the concept of nonsense literature as a communication strategy in a play with language and meaning. Through the exploration of typographical layouts and Risograph printing, nonsense literature becomes a tool that is employed to simulate and decode the difficulty of word-reading, recognition and comprehension, placing the reader and the audience within the dyslexic experience. Secondly, the researcher explores personal experience by connecting herself to past encounters within the education system, looking back to primary and high schooling, and translating these into encounters and an experimental dialogue between typography, publication format, iterative drawing, material thinking and prototyping.

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Attestation To Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the Acknowledgements), nor material which, to a substantial extent, has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Isabelle Hutcheson 26th May 2023

A handwritten signature in black ink, appearing to read 'Isabelle', with a long horizontal flourish extending to the right.

Acknowledgements

I acknowledge the support and contribution from my supervisors, Fiona Grieve, Tatiana Tavares and David Coventon: for their dedication to providing guidance, insight, encouragement and knowledge for this research.

I am grateful to my parents for pushing and supporting me in seeking greater understanding about myself and dyslexia, for not allowing dyslexia to hold me back, and for providing me with tutors who taught me the framework I needed to succeed within the education system.

Thank you to my friends and family for supporting this journey with words of encouragement and wisdom.

Intellectual property rights & Ethics

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AUTEC approval for this project was not required because it does not deal with people or animals

Introduction

This practice-led design research uses visual communication techniques to demystify the dyslexic experience. Using nonsense literature, the practical project called *Nonsense Mistakes* explores typographic conventions, publication design and Risograph printing methods to express the difficulties of word comprehension. In the practice, nonsense literature acts as a tool for exploring meaning through sensical and nonsensical word formations and typographic compositions. This strategy was applied to decode the written word, slow down the reader's comprehension, and deliberately present spelling errors and mistakes in the text. The significance of the research sits within the developing area of design for dyslexia and the potential of nonsense literature in questioning and engaging the reader in an experience with reading dysfluency. This project intends to use practice and personal experience to discuss and engage non-dyslexic people with the dyslexic challenge of reading and comprehending words.

Introduction

The methodological framework uses the self-search methods of phenomenology, autoethnography, and heuristic methods to assess a subjective and personal experience. A series of explorative-making tactics, including journal-writing and prototyping, were employed to foster a commentary on the practice. Iterative drawing through typography and Risograph printing processes enabled a safe and failure-free environment in which to explore typography and meaning-making through the nonsensical.

In the exegesis, writing is structured to provide the context, methods and design decisions around practice. Chapter One presents a discussion about the contextual knowledge that underpins this project. This includes the investigation of the dyslexic experience, typographic conventions in the area of design for dyslexia, the dysfluency effect, the literature around the nonsense literature and printing as a drawing tool. Chapter Two articulates and explores the methodologies and methods that support the research inquiry. Chapter Three reveals the critical commentary on the practice, discussing the final direction of artefact design, production values and presentation. Finally, the thesis concludes with Chapter Four, the reflective, critical and creative findings that this research inquiry has revealed and visualised.

Positioning Statement

Diagnosed with dyslexia at age ten, I lacked the ability to learn cognitively as my ten-year-old peers did. My reading, spelling and maths results were below average, and I struggled to fit in with the mainstream learning environment. Subsequently, two years at intermediate school were spent juggling a learning disability whilst negotiating my tutor's rigorous programme, which aimed to bring me up to speed to function within the everyday world of the classroom. Different styles of teaching, learning and interaction were all-consuming, and this paradigm intensified my struggles during high school. This experience with learning was the core motivation that underpinned and supported this project's intention. The specific focus on the topic of word-reading and comprehension arose from significant personal learning challenges. The practice is situated in the discipline of visual communication, and a desire to demystify dyslexia graphically and to enhance my design capabilities in order to help people learn about and understand dyslexia from an individual experience.

Chapter 1: Review of Contextual Knowledge

The Dyslexic Experience

Dyslexia is a neurological condition that impacts an individual's overall reading comprehension skills (Andresen & Monsrud, 2022). Dyslexia was studied by Adolph Kussmaul, a German professor of medicine, in 1877. It was referred to as "word blindness" (Kirby, 2020). The distinguishing feature of dyslexia is the "problem with learning which primarily affects the development of reading accuracy and fluency and spelling skills" (Snowling, 2019, p. 1). This is because dyslexic individuals use phonetic spelling for words, and the difficulty lies in remembering spelling rules that can influence the repetition of attempting to spell a word multiple times. Also, with dyslexic spelling, using all the correct letters in the wrong format links to the issue with sequencing letter forms (Swinton, 2015).

The dyslexic condition is individual, with differing levels of intensity, and the improvement experienced by one dyslexic person may depend on the specific teaching considerations for that individual (Snowling, 2019b, p. 34). The dyslexic disability results in word recognition dysfluency and poor skills in "phonological awareness, phonemic decoding,

spelling, and often rapid automatised word retrieval" (Lauterbach et al., 2017, p. 202). Reading comprehension difficulties are common in the daily lives of some dyslexic people. They occur when a dyslexic person has difficulties in phonological awareness, which is the ability to recognise word patterns and rhymes, and identify individual word sounds and syllables in words (Saiegh-Haddad, 2019). Challenges with phonological awareness negatively affect a dyslexic person's ability to word-read and comprehend the overall text. For the dyslexic reader, there is a lack of ability to read, and the consequence of slow reading is the misinterpretation of the content (Lauterbach et al., 2017, p. 202). Oakhill (2015) suggests that reading difficulties cause an inability to process meanings and decipher the narrative of a given text properly. For the dyslexic reader, the effect of slow reading leads to a misinterpretation of the content (Lauterbach et al., 2017, p. 202). Without the ability to understand the written word, the reader cannot appreciate or interact with the text's objective, and this causes them to become frustrated and confused.

Typographic Conventions and Design for Dyslexia

Nonsense Mistakes uses typographic conventions to express personal experiences with dyslexia. Traditionally, typography can manipulate the audience's feelings, perceptions and actions. The essential task of typography is to communicate a message and meaning through the management of text and language, graphic treatment, tone of voice, layout, hierarchy and font size. Type plays an essential part in communicating messages and conveying the personality of a product or designed material (Johannessen et al., 2022, p. 278). It can turn a word into a warning sign and express different human attitudes and emotions (Bringhurst, 1992). The essential role of typography is to express the written content, while becoming a semiotic resource to reveal meaning. In *Typography as Semiotic Resource* (2017), Frank Field Serafini suggested that "typography is the art and technique of arranging type to make language visible" (Serafini & Clausen, 2012, p. 4). In literature, typography is used to support readability and visual comprehension of content within the digital platform and across an array of printed matter.

In poetry, typographic arrangements interpret the meanings of words, playing with text breaks, white space and line lengths in a freer form. In literary fiction, an entanglement of typographic arrangements can affect readers' perception and engagement with the storyline (Sadokierski, 2011).

Within the field of dyslexia, typography has often been used to reveal the visual experience of dyslexia by educating a non-dyslexic audience (figure 1) and influencing dyslexic readers (figure 2). The UX platform *Leoreader.com*, designed by Evert Martin (2021), makes reading more accessible by using speech, typography, video and focus mode to support dyslexic readers. Martin's research revealed that the main challenge for UX designers was that dyslexia presents different experiences for every individual; which makes it difficult to build a profile of the app user. He suggested that traditional design, creative processes and outcomes for dyslexic users do not always work, and that this area needs significant growth (Martin, 2021).

Typographic Conventions and Design for Dyslexia

Figure 1. Dyslexia Canada. (2022). It's Hard to Read.



Note. Dyslexia Canada is an awareness campaign whose aim is to educate and teach people about dyslexia. As you scroll down the website page, you are presented with moving graphical arrangements, revealing different information and a visual representation of the dyslexic experience.

Figure 2. Murphy, Z. L. (2022b). The Typographic Project Designed to Help People Understand Dyslexia.



Note. Mohamed Samir, Ryan Atkinson and Rijn Kunnath from New York BBDO agency designed a series of fold-out posters with typographic fragments that encourages children with dyslexia to engage in tactile and constructive learning activities. Using origami methods, the posters can be transformed into 3D paper artefacts and use type fragments are used to create words and animal structures.

Typographic Conventions and Design for Dyslexia

James E. Jackson (2014) argues that typography for dyslexia has not been studied in a structural way to assist in the readability of the content, and the field lacks scientific attention. He suggests that the scientific view is that changing the visual system of text will not support readability, as readability is, effectively, just the sounding out of words. In further discussion, Jackson suggests that typography choices play a significant role in the readability of text and type manipulation can enhance word-reading capability; this supports the notion that learning literacy skills empowers the individual to read more easily (Jackson, 2014). Howarth (2014) comments that, for dyslexic people, conventional typefaces can negatively influence meaning-making through the constant repetition of letter structures. Christian Boer (2008) created a typeface, *Dyslexie font* (figure 3), which focused on typeface designs with less constancy of letterforms to prevent letters from shifting and shuffling within the dyslexic reading experience.

Figure 3. Boer, C. (2008). Dyslexie font.



Note. This typeface makes word-reading more accurate for dyslexic readers and emulates the ways in which they can unknowingly manipulate each letter's dictation in their minds. The Dyslexie font letters have thick strokes, which create a focal point to which the eyes are drawn and which prevents letters from being perceived as backward and mirrored.

The Disfluency Effect

In *Nonsense Mistakes*, the theory of dysfluency is used to present explicitly and question the meaning and readability of patterns in the text. The dysfluency effect is a theory developed in 1950 by the philosopher James Williams, which considers two aspects of typographic readability. In one, readability is “quick, effortless, associative, and intuitive” while, in the other, it is “slow, effortful, analytic, and deliberate” (Kühl & Eitel, 2016, p. 4). The disfluency effect on readers and learners depends on the difficulty of cognitive tasks, altering decision-making and processing.

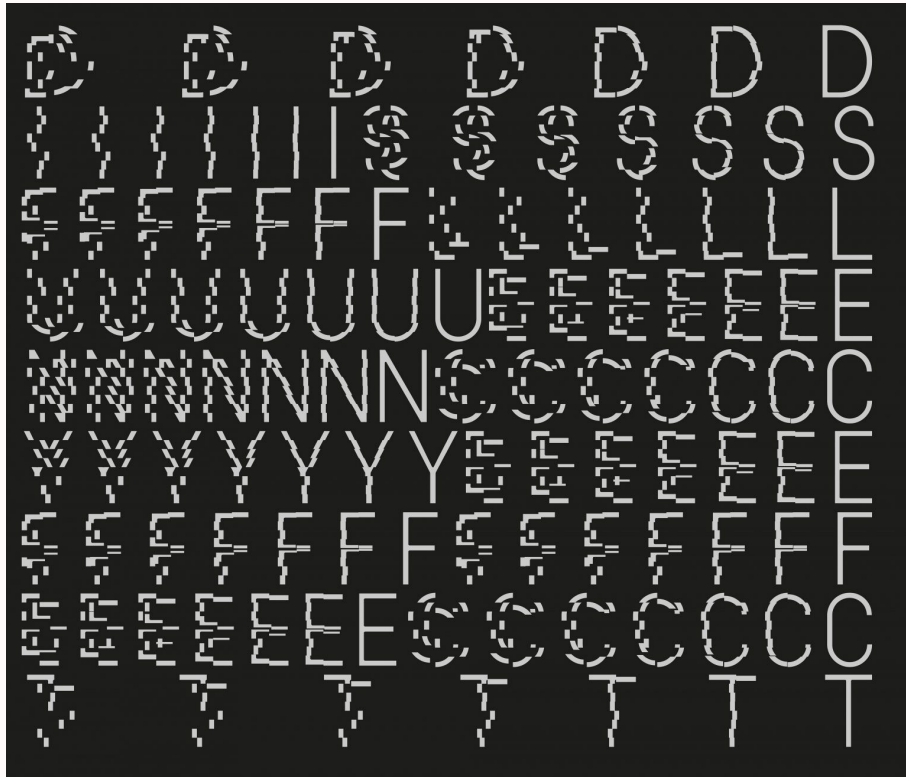
The disfluency effect in design was influenced by the increase in academic research about the benefits of using dysfluency in typography for educational purposes (Dyson & Brezina, 2021). Typographic disfluency is predicated on the idea of making text visually harder to read, so the learner must engage more deeply with the meaning of the text (Kühl & Eitel, 2016). Thiessen (2020) argues that the disfluency effect challenges the readability

of typography and impacts mental processes of encoding, theoretical comprehension, spatial and academic reasoning, and clarification to manipulate the design and the visual characteristics of typography (Thiessen et al., 2020a).

Thiessen et al. suggested that the effect of recognising letters and sounds by manipulating the conventions of texts can significantly engage the reader in decoding the meaning (Thiessen et al., 2020). These tactics are used to decelerate the reading process so the reader can actively correct, critique and notice mistakes (Song & Schwarz, 2008). This may seem counterproductive to readability and comprehension abilities, but the immediate aim is to direct the audience to acknowledge the disfluency and comprehend the meaning with minimal attempts. Some typographic texts (figure 4) mirror the typographic dysfluency effect through presenting the difficulty in the identification and readability of letters and words (Snowling, 2019b).

The Disfluency Effect

Figure 4. Orosz, R. (2022). The limits of legibility.



Note. This typographic project explored the ways in which type dysfluency can improve overall information retention. Using public questionnaires to investigate legibility, typography explored different levels of dysfluency within numerous typographic arrangements and systems.

Thiessen, Beier and Keage's (2020) conducted a study into the dysfluency effect challenges the relationship between psychology and typographic theories and the different perspectives between readability and legibility. Psychologists focus on understanding brain functions by processing and interpreting facts, while typographers are drawn to ways to design reading material and copy to improve the reading experience. The authors argued that an attempt to build a relationship between psychologists and typographers may improve the overall understanding of the dysfluency effect.

Nonsense Literature

Nonsense literature, nonsense verse and literary nonsense are terms often used to describe phrases or literary texts that cross the boundary between language and logic (Bellian, 2016, p. 5). Tigges, in *An Anatomy of Literary Nonsense* (1988), defines nonsense literature as “a genre of narrative literature which balances a multiplicity of meaning with a simultaneous absence of meaning” (p. 47). He discusses nonsense literature as a combination of words and meanings that are not arranged in a recognisable system. Nonsense literature is the strategy of restructuring language by breaking its rules (Tigges, 1988). Bellian (2016) explains that nonsense is clever, careful and purposeful wordplay used to hold the reading process and reduce the speed. Using wordplay to form new word formations, nonsense explores variations of meaning by matching nonsensical words with meaningful ones (Haight, 1971). Barton (2015) discusses the notion that nonsense literature entangles the connection of word to meaning using

arbitrary words. Nonsense has rebellious tendencies by ridiculing language itself and challenging language norms (Barton, 2015, p. 2). Templeton (2019) posits that nonsense literature does not sit within just the child reader category but has a place for both child and adult readers because “nonsense poems blur the line between simple amusement and serious literary/cultural issues” (Templeton, 2019, p. 6). Lewis Carroll, in *Alice’s Adventures in Wonderland* (1865), *Jabberwocky* (1871) and *Through the Looking Glass* (1871), used logical and non-logical words as an exploration to limit meaning and to inspire interpretation (Roberts, 2012). *The BFG* (1982), a picture book by Roald Dahl (1982) (figure 5), uses the convention of nonsense in its language and punctuation structure. The book engages the reader in a humorous and creative narrative by using rhythms and nonsense words through onomatopoeia (sound words such as boing, zap, gargle, etc.) and phonaesthesia (similar sound systems in words such as snort, sneer, sniff, etc.).

Nonsense Literature

Stephen Kidd, the author of *Nonsense and Meaning in Ancient Greek Comedy* (2014), suggests that, in Greek and English, the idea of nonsense relates to phrasings like *rubbish*, *blather* and *twaddle* for untrue accusations or false acts. The use of nonsense relates to something false, a lie, or a mistake. Kidd (2014) compared the English and Greek meanings of nonsense as the word *lie* in English strips away the power of the word, while *lie* in Greek questions the individual's integrity. Thus, the negative perspectives of nonsense given by the English hold connections to 17th and 20th-century Victorian literature, while Greek nonsense holds different connotations (Kidd, 2014). Within this perspective, he suggests that, in the past, "nonsense [was considered...] a language which incorrectly depict[ed] reality and is therefore of no use" (Kidd, 2014, p. 25). However, in the 1970s, Stewart (1978) revitalised and redefined the concept to reveal that nonsense is the essence of breaking the rules and beliefs within everyday life. Stewart discussed the value of redefining the constraints of

the every day and the real, arguing that you cannot have sense without nonsense. When we experiment with nonsense, we challenge and question the world by reinventing it and criticising it. Nonsense literature can reveal unsavoury parts of society to connect art and life together (Stewart, 1979).

Nonsense Literature

Figure 5. Dahl, R. (1982). *The BFG*. p. 28.



Sophie knew that what the Giant said was true. If any person reported actually having seen a giant haunting the streets of a town at night, there would most certainly be a terrific hullabaloo across the world.

'I will bet you,' the BFG went on, 'that you would have been splashing the news all over the wonky world, wouldn't you, if I hadn't wiggled you away?'

'I suppose I would,' Sophie said.

'And that would never do,' said the BFG.

'So what will happen to me now?' Sophie asked.

'If you do go back, you will be telling the world,' said the BFG, 'most likely on the telly-telly bunkum box and the radio squeaker. So you will just have to be staying here with me for the rest of your life.'

'Oh no!' cried Sophie.

'Oh yes!' said the BFG. 'But I am warning you not ever to go whiffing about out of this cave without I is with you or you will be coming to an ucky-mucky end! I is showing you now who is going to eat you up if they is ever catching even one tiny little glimp of you.'

Note. The BFG is a picture book that tells the story of the Big Friendly Giant, the main protagonist, as he snatches a girl named Sophie and opens her up to a whole new world. Nonsense is used here to provoke deeply imaginative and humorous tones by employing wordplay, rhyming and nonsensical words. It explores sound patterns, words that imitate sounds, syllables and sounds paired with meaning, and new word syllable combinations.

Printing as Drawing Processes

In *Nonsense Mistakes*, Risograph (Riso) printing processes are considered to be a drawing tool and are used to emphasise the incoherence present in the nonsense nature of the text. The printing process resembles a “post-digital hybridity or syncretic merging of the analog and the digital, which in itself exemplifies [a] new materiality” (Reif, 2020, p. 11). The materiality of the Riso connects to characteristics of past printmaking while also using digital publishing methods. Riso printing is “essentially an automated screen printing machine” (Thomas, 2015, p. 97), which is inherently flawed and difficult to manage because it requires a great deal of manual intervention for the ink levels and printing repetition to determine visual intensity (Thomas, 2015, p. 97).

This printing method involves hands-on attention and fosters analogue interventions within a digital production platform. The mastery of printmaking involves firsthand interaction and involvement with materials, challenging the current digital age of printmaking production (Nikolic, 2005).

In this sense, the designer takes part in the design through Riso printing production, and that requires flexibility and unpredictability through control of the drum, the split-up of colours and the inherent printing errors. This physicality requires designers and printmakers to experiment with different materials, providing an opportunity to ideate and adjust ink outcomes during the design production (Thomas, 2015). Lee (2020) describes Riso as temperamental and it can be seen as creating a connection to human attributes through the unique printing process and imagery.

As a craft, the Riso printing process “requires craftsmanship [and] complete mastery” (Heidegger, 1971, p. 59). Drawing and craft are interconnected, and the method of drawing is an inclusive act; through craft, ideas can be found and moulded in a way that words cannot describe (Pallasmaa, 2017). For this project, Risograph as a drawing tool holds the opportunity to express inherent dyslexic experiences and meaning through printing production.

Summary

This chapter provided a review of contextual knowledge that serves as the foundation for this research. It predominately provided contexts discussing the dyslexic experience and associated difficulties with word comprehension and reading. Through the employment of typographic conventions, design for dyslexia through typography presents a fertile area of research and poses the possibility of educating dyslexic and non-dyslexic people through the dysfluency effect. In this project, nonsense literature, wordplay and drawing with printmaking influenced the arrangement and meanings of words to situate the user within the dyslexic experience. Following on from the outline of these contexts, it is helpful to discuss the research design that outlines the making processes relating to practice.

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Chapter 2: Research Design

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Research Paradigm and Practice-led Research

This practice-led research project emphasises a subjective reality rather than an objective viewpoint and is conducted within a post-positivist paradigm (Ryan, 2006). The research has inherent connections with personal views that form and drives the methodologies, positioning the designer as the researcher. Post-positivism acknowledges that the researcher's perspective on the research is crucial to the way in which it is conducted (Fox, 2008).

In this research, I integrate and describe my plural roles as designer, practitioner, and researcher. According to Hamilton and Jaaniste (2010), this "situates creative practice as both a driver and an outcome of the research process; it also positions the researcher in a unique relationship with the subject of the research" (Hamilton & Jaaniste, 2010, p. 32).

Methodology

For the purposes of this research, methodological processes require the collection of personal data about the researcher's dyslexic experience. Therefore, this practice-led project is situated within phenomenology, embodied cognition, autoethnography and heuristic enquiry.

Phenomenology and Embodied Cognition

Phenomenology is an approach that explores the phenomenon of the subjective experience, which considers that our reality is forever evolving (Brearley, 2001). *In Being and Time* (1927), Heidegger suggests that reality involves alliances, uniformity, and mirroring the body and the mind. He argues for an embodied cognition between thought, actions, and movements “through sensitivity, empathy, and awareness [that guides us about] what to do, where things are, what they offer us, how they work with (or against) us and each other” (Heidegger, 1927, p. 99). Maurice Merleau-Ponty (2004) suggests that a person’s primary touch point with reality is their living body, and, as inhabitants, we consciously and intuitively recognise the world through our daily contact with items as we use this sensitivity to document and understand subjective experiences. In Barbara Bolt’s discussion of praxical knowledge and artistic research, she analysed Heidegger’s concepts of embodied cognition to understand the world through our engagement and involvement with it rather than by trying to conceptualise an unbiased understanding of it

(Bolt, 2012, pp. 87–88). She argues that knowledge emerges from our relationships with tools and materials.

In *Nonsense Mistakes*, phenomenology and embodied cognition relate to subjective experience through one’s observation of oneself. Through analysing personal data, I understood the nature of and relationship between myself as a researcher and my dyslexic experience and perception. This understanding and my engagement were conceptualised through reflections about my past experiences with reading, writing, spelling, and overall schooling. Embodied cognition was explored through specific dyslexic challenges and through the ways in which processes and tools are involved in providing an accurate (or close) resemblance of the experience. Embodied cognition was also explored through iterative drawing and material thinking, where I embodied and explored sensory awareness and the visualisation of prototypes to influence making processes.

Autoethnographic Approach to Design Research

Autoethnography in academic research is a methodology that connects the researcher's personal experience to the research. It refers to the researcher's own disability in their field of enquiry to contribute to and improve knowledge. Henrich discusses that "within the practice of autoethnography, there is a belief that there is value in both what the researcher observes in others and what she observes in herself" (2012, p. 19). Using myself as a research tool, I identified new and unique objectives for supporting the research. In the setting of this project, autoethnography provided an opportunity to depict personal experiences and memories while respecting the collection of personal data to analyse, explain and understand the social and cultural implications (Finlay, 2020). My experiences, such as being a child or a teenager in English classes, the daunting and terrifying task of being called on by my teacher to read out

loud or the fear and insecurity of not being able to read the words correctly or missing pronunciation and failures, were significant and relevant. These memories were recalled during the process of creating work.

Looking back at memories launched an investigation into past readings, such as *The BFG*, and into the ways in which these types of nonsense literature resonated with my comprehension difficulties in the past.

Heuristic Inquiry

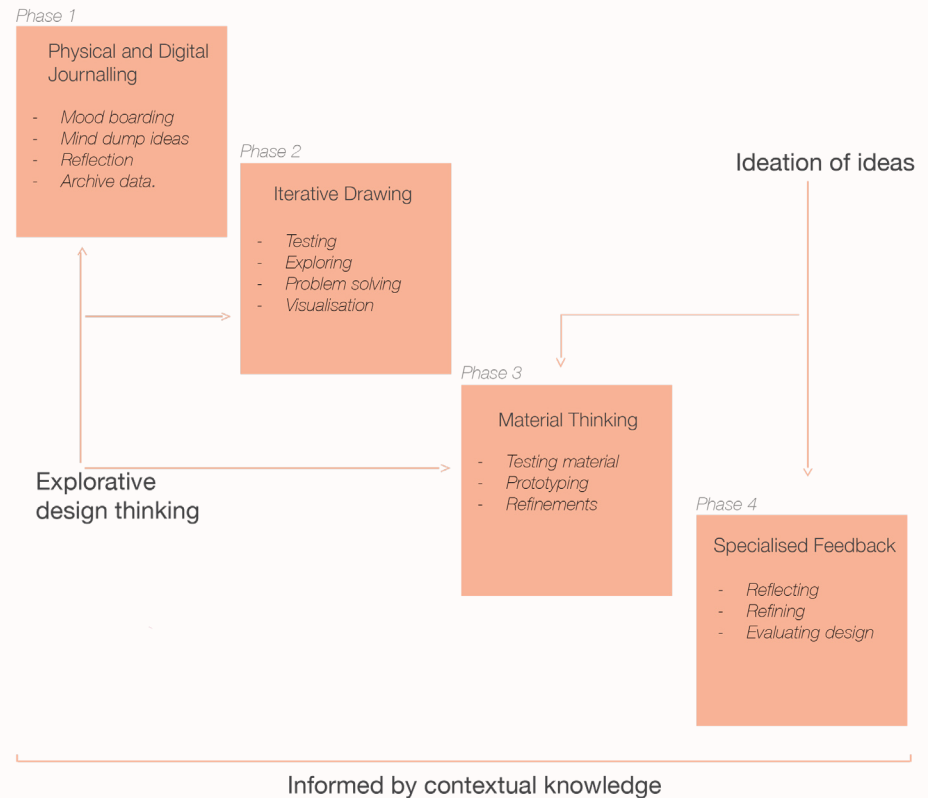
Moustakas (1990) argues that heuristic enquiry brings the researcher to the centre of the phenomena through discovery in action. In heuristics, the researcher answers a question by investigating a problem through personal circumstances to comprehend better the world and its associations and their position in the world. Heuristic enquiry can involve different stages that include elements of confusion and self-dialogue as the researcher communicates to himself about the process and directions. Important elements of this self-dialogue involve bouncing ideas with experiences in a loop process in a reflective fashion (Sultan, 2019).

Heuristics is the study of self and situates the researcher/graphic designer within the research fields at its core (Ings, 2011). Through the study of self, the researcher can problem-solve and use intuition to achieve breakthroughs. Using heuristic thinking, I solved problems through practical experience and experiments that informed the next steps. This helped me to gain a greater understanding of how and what I was investigating.

Methods

A series of consecutive methods has been implemented, including iterative drawing, visual and digital journals, specialised feedback and material thinking (figure 6).

Figure 6. Methods diagram (2023)



Note. This diagram shows step-by-step methods that involved relationships of practice, contextual knowledge and iterative refinements. Explorative design thinking creates a space for ideas, making and contextual discovery. The ideation of ideas connects to material thinking and specialist feedback to support the expansion of new ideas and the process of forming concepts supported by practice.

Phase 1: Physical and Digital Journalling

Physical and digital journalling were vessels for iterative drawings, mind mappings, notations, and exploration with materials (figures 7 and 8). I used these spaces to unpack experiences about my past and to document experimentations with materials. Notations were used as a reflective instrument that informed a “form of comprehension [in] the intuitive ability of designers to internalise and transform knowledge across different frames, domains and contexts” (Chon, 2019, p. 197). The physical and digital journals served as channels for intuitive knowledge and provided an opportunity to use writing and reflection to explore new ideas through contemplation and examination through writing and reflection (Pallasmaa, 2017).

Drawing and writing allowed me to establish connections and unearth new meanings “for the non-explicit, following clues and identifying patterns, and dwelling inside a practice-led process” (Mortensen Steagall & Ings, 2018).

The practice of physical and digital journalling supported the strategy of using nonsense words to convey the dyslexic experience of reading and comprehension. Using writing to unpack personal experiences, I experimented with short stories, brainstormed ideas and used playful writing to invent new word formations.

As a documentation method, the journal included explanations, evaluations, reflections and mind-dumping that “provided design process direction to increase the chance of reaching a successful solution” (Pradel et al., 2018, p. 298). Kampen (2019) asserted that the conversation with those tools must be documented to be shared; otherwise, it may stay internalised. In this case, post-action writing was essential as a method of refinement and finding connections.

Phase 2: Iterative Drawing Processes

In *Nonsense Mistakes*, drawing and iterative processes present a procedure for testing, exploring, problem-solving and visualisation. The production and experimentation with typographic explorations are revealed alongside test print methods that were experimental and intuitive (figure 9). Drawing was used here to define a sense of playfulness that occurred during the handling of materials. These methods of drawing allowed a safe place for ideas and discoveries to flourish. Terry E. Rosenberg (2008) suggested that drawing is “a space where an individual thinks [and] it does not need to make sense to anyone apart from the person drawing – and to themselves only when ideating” (Rosenberg, 2008, p. 123). The explorative and low-fi nature of drawing and printmaking methods overcomes the creative tussle with perfection and creative blocks to inspire new insights.

Figure 9. Iterative drawing process stages and phases (2023)



Note. This series of experiments reveals the stages of the iterative drawings process that supported the progress and the overcoming of creative blocks. Using printed processes, textures and manipulation of text, each stage was developed, ideated, questioned and compared to the subjective experience of dyslexia.

Phase 2: Iterative Drawing Processes

Drawing honoured free interpretations and chances to solve and locate problems in a safe environment, as “this dialogue evolved into sustaining habits, and these habits establish[ed] a rhythm between problem-solving and problem-finding” (Sennett, 2008, p. 9). The drawing process (through hands-on mark-making and printmaking processes) simulated dyslexic characteristics and the extensive *failure* dyslexic people experience in reading, comprehension and spelling, along with the burden of time limitations. The drawing was flexible and allowed a haptic experience through over-drawing, removal, editing and elimination. Haptic methods allowed my body to be an “ultimate instrument of all [my] external knowledge, whether intellectual or practical” (Polanyi & Sen, 2009, pp. 15–16). This was followed by manipulation and comprehension of spatial awareness and mental visualisations.

In this drawing phase, graphic design conventions were used to communicate challenges that dyslexic people may encounter. My personal experience with the topic meant that I could *voice a genuine* experience of dyslexia throughout the process of writing and making, and with the *messiness* of my working style. Through drawing and writing processes, I was able to inform and amplify a realistic experience through design conventions. Explorations with typography and meaning aimed to investigate type dysfluency, typographic hierarchy, layering, and distortion and manipulation (figure 10).

Phase 2: Iterative Drawing Processes

Figure 10. Composition exploring nonsensical words using typographic hierarchy (2022)

I am dyslexic a
Speciart Bozzingluck Bummerful is that.
All these sounds and equations to
Mimeber Strumble Speciart have
Diffplish Mimebering a lot. Being
and with words, letters, sounds, meaning and
Struggacy Strumble Mimeber
when teach would make you read out loud, because I do. How
Struessing Droopyloopy Everyone thought I was
because who is
Strumbling Mindboggle Drumpy
on words that much
Disabso b Misgraps Mindlish
As I can read, I can understand but it
from me, I
they all think I am

Note. This experience revealed the effects of readability and the overall comprehension of the text.

Phase 3: Material Thinking

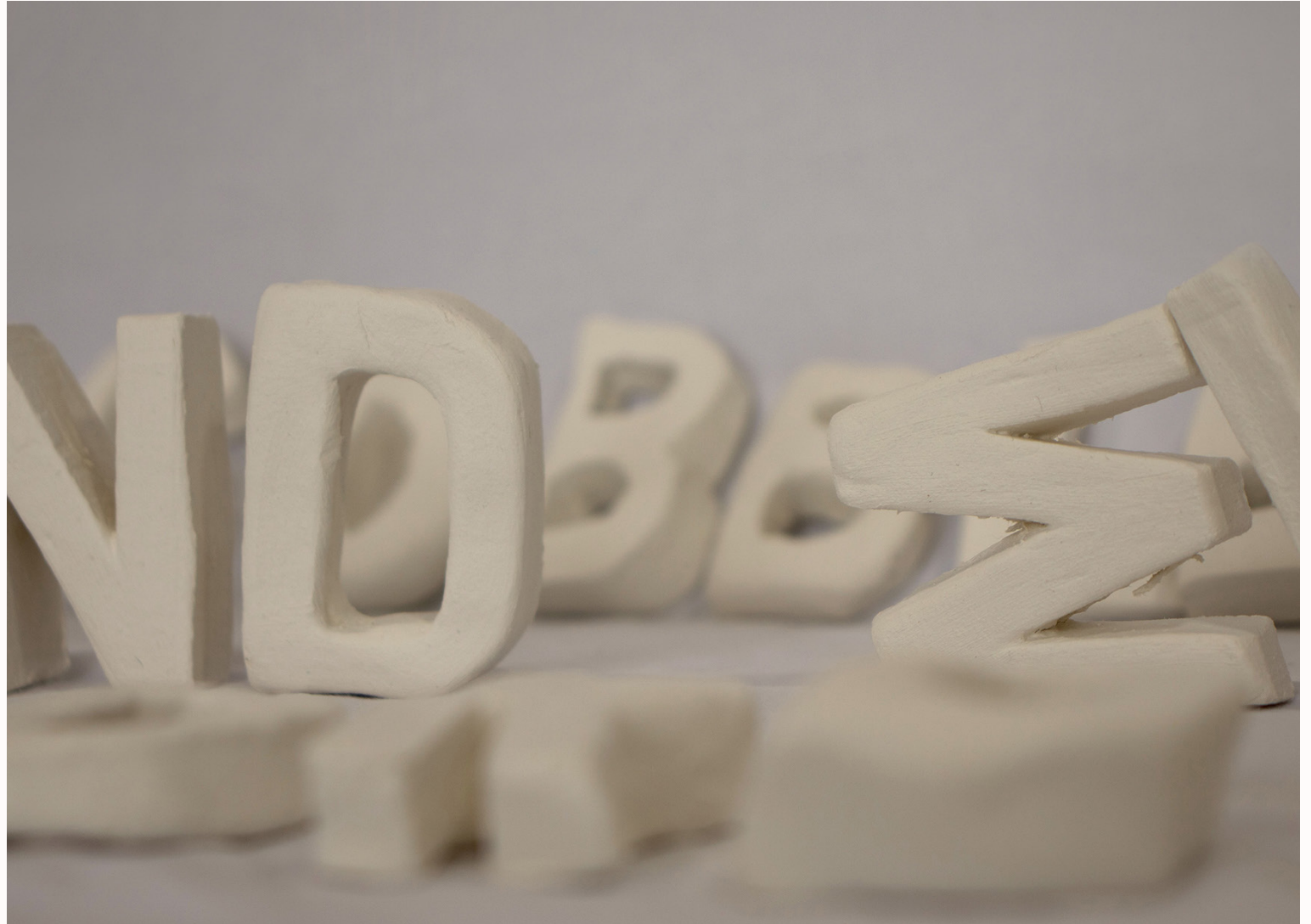
Paul Carter argues that material thinking is creative research practised through repetition; it is the act of searching for something new and innovative. Through material thinking, the making process expands the method of materialising concepts for creative resolution (Carter, 2014). Using a series of experimentations with materials (figures 11 and 12), prototyping (figures 13 and 4) and Risograph printing (figure 15), I aimed to explore tactile expression and discover the connection between letters, words and meaning. Through tactile expression, my “body [was] the ultimate instrument of all [my] external knowledge, whether intellectual or practical” (Polanyi & Sen, 2009, pp. 15–16). Through ideation and evaluation, thinking with materials was a space where ideas could grow, flourish and change. It was a space to examine, evaluate and adapt design methods, and to address issues and reflect. During

the process of making, I used Donald Schön’s concept of “reflection in action” (Schön, 1983, p. 130). This idea is characterised by a *dialogue* throughout the circle of action and reflection (Schön, 1983).

This phase has activated and enhanced the researcher’s position through the making process, and rapid prototyping has advanced knowledge and focus.

Phase 3: Material Thinking

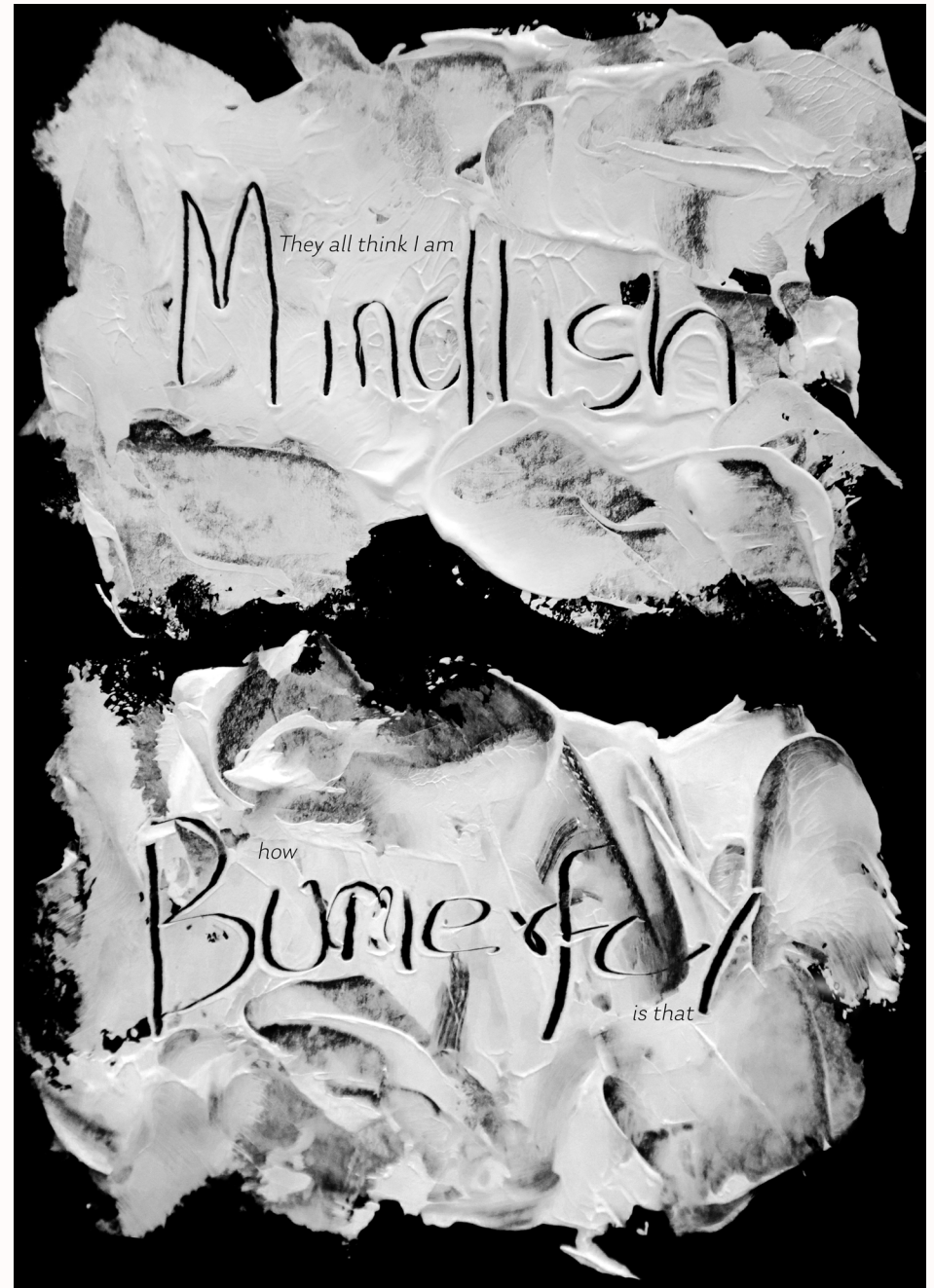
Figure 11. *Photographic experimentation with clay letters (2022)*



Note. Using lighting, angles, placement and focal point, these photographs revealed uneven proportions, dents and holes of handmade clay letters to express and explore the imperfect nature of typography through the eyes of dyslexia.

Phase 3: Material Thinking

Figure 12. Paint typographic exploration
(2023)

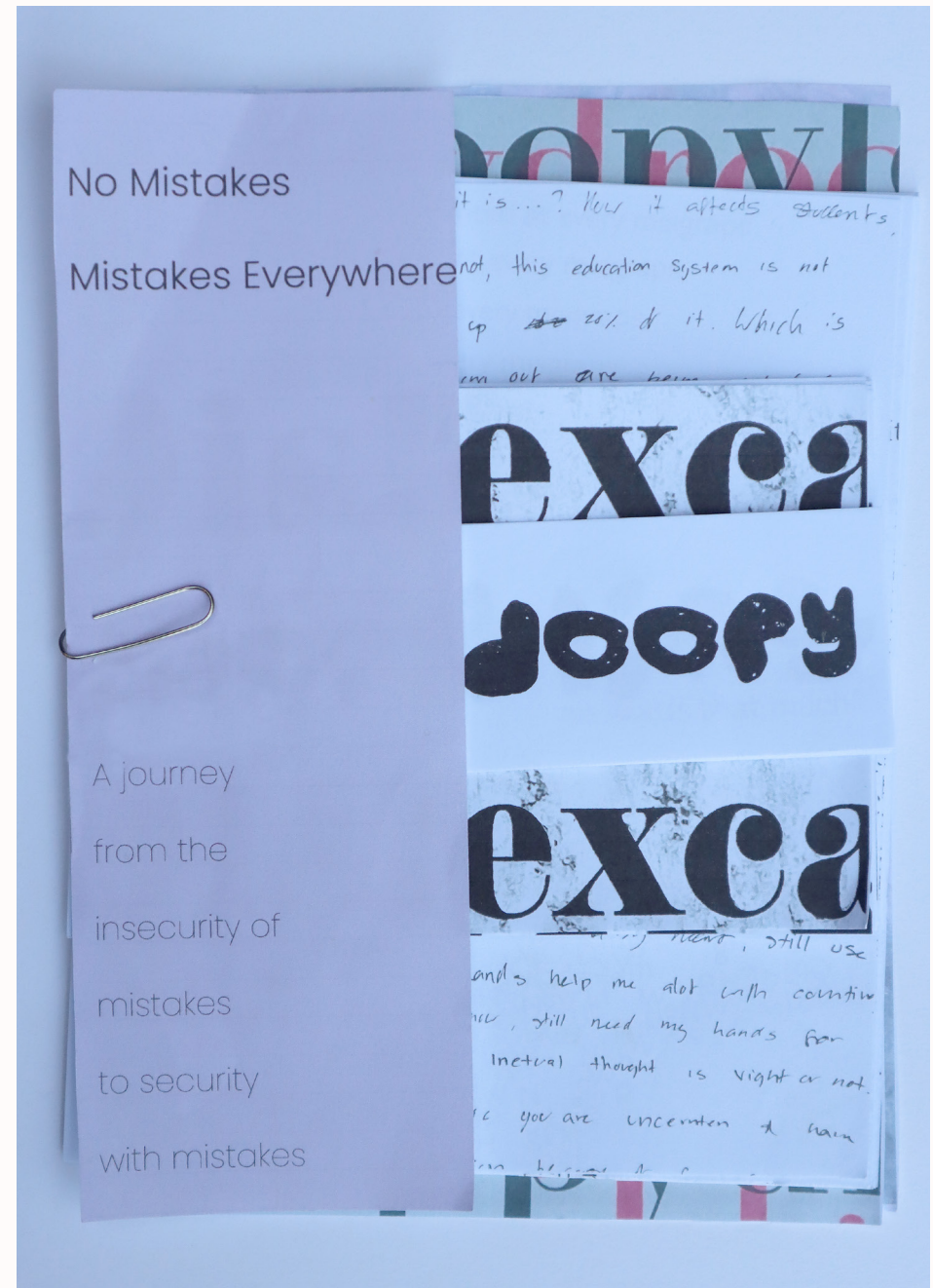


Note. This typographic experimentation explored the way in which textures expressed the negative emotions experienced by a dyslexic reader through rough and chaotic paintbrush strokes. Upon reflection, this phase was considered to be unsuccessful as it didn't capture the essence of nonsense literature and the struggle of word reading and comprehension.

Phase 3: Material Thinking

Figure 13. Multiformat publication prototype (2023)

Note. This experimentation explored a multiformat publication and the ways in which papers and formats could be designed to challenge the traditional conventions of publication design.



Phase 3: Material Thinking

Figure 14. A4 test of Riso and typographic concertina (2023)



Note. The versatility of this form of publication allowed pages to be separated, read and displayed, providing the audience with a tactile experience of viewing and experiencing the artefact. The exaggerated format of the publication and playfulness of word formations emulated the uncomfortable feeling of a dyslexic.

Phase 4: Specialist Feedback

The authors Hattie and Timperley (2007) argue that feedback is extremely influential in supporting learning and goals and offers essential insights and critical insights about the design and making methods. During the research, a specialist feedback session with designers was valuable for reflecting on and evaluating design solutions and helping to synthesise design methods (figure 16). One of the remarks from this session emphasised the significance of “connecting the audience in their emotional capacity” and demystifying reading comprehension for the dyslexic person (W. Ings & M. Mortensen Steagall, personal communication, 2022, AUT). Secondly, as a result of the abundance of work and ideas, they pointed out the importance of restraining the amount of information so the audience could absorb a few key concepts, such as composition. They suggested that reiteration was crucial for synthesising key ideas for the following phases. This phase has activated and enhanced the researcher’s position through the making process, and rapid prototyping has advanced knowledge and focus.

Phase 4: Specialist Feedback

Figure 16. Specialised feedback session (2022)



Note. In a session with Professor Welby Ings and Associate Professor Marcos Mortensen Steagall, a series of A3 posters was grouped and put on the walls with descriptions exploring typography and print methods. The session aimed to assess the strength of ideas and whether or not an audience could draw connections between design choices and the study's objective.

Summary

This chapter provided a methodology framework for practice-led research using embodied cognition and material thinking to understand a personal dyslexic experience. Autoethnographic and phenomenological processes allowed observation and examination of oneself at the core of the practice. Using intuition to explore findings and pathways, multiple methods were explored through various making strategies to iterate, define and refine design outcomes. Having discussed the processes underpinning the research, it is helpful to outline the decision-making processes that resulted in the final designed artefact.

Chapter 3: Critical Commentary

The Nonsensical Dyslexic and Education System

The learning difficulties experienced by dyslexic individuals have been the core concept and communication strategy underpinning the use of the visual language of *Nonsense Mistakes*. The design decisions employed in the artefact depict challenges and approaches to word-reading through typography and publication design.

The Nonsensical Dyslexic and Education System

Theories around nonsense literature offers an opportunity to present and explore dyslexic experiences by using wordplay and the manipulation of language. Using Stewart's concept of nonsense, *Nonsense Mistakes* reflects on the constraints of everyday struggles experienced by dyslexic individuals. The artefact considers the power of nonsense to expose hidden aspects of society and provide an experience of play by revealing meaning through the known and the unknown. Through nonsense, the project reflects on my personal experience with the education system: reconsidering schooling conventions and parameters, subverting them and formalising them. Sharon Hodgson (2019) explains, in a report discussing the ways in which students with dyslexia are being "let down by the current education system" (Hodgson, 2019, p. 6), that around 80% of dyslexic individuals finish their education without being diagnosed, "therefore going without the support that they need throughout their whole time in our education system" (Hodgson, 2019, p. 10).

The tactics exploited in the artefact present the taxing fatigue brought by my reading capability. In my schooling experience, I often dismissed the overall meaning of a word so I could demonstrate a *proper* reading. Impacted by the dysfluency of reading and decoding, a dyslexic can feel shame and stupidity, and this breaks down their reading confidence. In this sense, the artefact positions the reader within this experience by missing the links between the meaning-making of a word. The layering of nonsensical words in typographic arrangements was used to explore the distress I felt when reading books and picture books during my schooling years. Margaret Rooke investigates the dyslexic experience with books by collecting interviews with dyslexic individuals; Elijah, 12, London, England, said that "When I read books, I get this aching in my belly" (Rooke et al., 2017, p. 140).

The Nonsensical Dyslexic and Education System

Composition and wordplay repetitions were designed to overwhelm and exhaust the non-dyslexic audience, mirroring, modelling and amplifying the strain of constant decoding. This mirroring is employed to place the audience within the dyslectic experience by slowing down the reading accuracy through a nonsense play of words. The repetitious layering of texts and misspellings provides a sense of confusion and visually presents constant errors. By using nonsense, typographic arrangements reveal the challenges regarding the way meaning can be lost through reading and the translation of decoding processes. Letter sounds and patterns of information are recontextualised to indicate mispronunciations of words that are present in the dyslexic experience with the learning process (Lauterbach et al., 2017).

A series of nonsensical words is combined using phonaesthesia and onomatopoeia, which are manipulated to change word formations to express emotions and *messing up* with words during dyslexic reading. For example, the feeling of having

bad luck (and always making mistakes) resulted in finding synonyms and combinations of *boozing* and *luck*; the word *bozzingluck* was created. The syllable *boo*, related to a *booing* ground or *boo-hoo*, was combined with *luck*, giving negative connotations and influencing the meaning of *bad luck*. Another way of creating nonsensical words was by changing a few syllables or sounds. Some word sounds are stronger than others and make stronger connotations to meaning; for example, *problems* turned to *troublems*. The simplest form of creating nonsensical words was applied by removing sounds and syllables (e.g. *mimber* as *remember*), emulating the way in which the dyslexic person views, reads and sounds, while holding strong connotations to the meaning. The combinations of nonsensical and sensical words were used to complement one another and help the reader comprehend the overall storyline.

The Voices and Layers of Information Reading and Cognition

In *Nonsensical Mistakes*, type is composed as an image (*type as image*) and used to present and visualise typography with the potential to create forms and challenge meaning. Typographic treatment signifies meaning expressed through four juxtaposed voices revealed through layering (figure 17) and these treatments transition through the pages to create a flow of information.

Figure 17. Four layers of information (2023)



The Voices and Layers of Information Reading and Cognition

The bottom layer (blue) presents a more continuous text, while the other three layers (fluorescent pink, orange and black) are playful and disruptive. The tactic of layering explores the various effects based on my dyslexic perception. These layers resemble the difficulties of my learning experience.

The blue layer is confined by a layout that resembles literature norms, page restrictions and order, conforming to conventions of book design and poetic writing (figure 18). The typographic treatment uses wide margins, paragraph structure, portrait layout and headings to replicate book design literature using typography, words and stories. This voice represents the page structure to which dyslexic individuals may have difficulty conforming and uses the limitations and the repetition of this page structure. The poem's message reveals the emotional side-effects of the shame, embarrassment and hardships I faced within the classroom and the overall education system.

Figure 18. The blue layer and the dyslexic poem (2023)

Witgoggleing words

I am dyslexic a speciart, don't feel smart or smell smart, I got bozzingluck. Being speciart means your diffarate from other people, you learn diffaratly. Being diffarate can be hard, it is bummerful. Speciart would make me feel sorrable, never fitting in always standing out like a thumb. Sitting in class and trying to listen would never work my way, I couldn't mimember the important parts. My brain couldn't sit and listen like others, I would try but nothing.

In primary school, before we knew about speciart, I was a naughty, disruptive, lazy, stupid, silly, special, needy, attention seeker, annoying, rude, troublesome, rebellious, undisciplined, under average, below average, uncontrollable and I was mindlish. All these things I new, getting in troublems all time, talking, moving, twitching, couldn't sit still because I didn't know what else to do.

In primary school, a program called VAMP came and got me for an hour a day, kind of like torture if torture was done through words and number recognition and mimembing. There were probably like 5 of us, the so called speciart kids, without a diagnosis. This was a diffiessing experience, made me feel even more mindish. A series of five numbers or letters would be said to me, then I would have to say them back, but not forwards. I struggacy as I trumble through each number or letters. To be honest that is all I mimember, just the struggacy and the unbarrassing feelings.

Note. This poem represents the situation in the classroom when a dyslexic person is asked to read out loud for the class to hear. The poem explores the emotional distress of this situation and the way it affected my self-esteem.

The Voices and Layers of Information Reading and Cognition

The second layer, the fluorescent pink text, explores a manipulated text, visualised through my dyslexic brain when reading a text on a daily basis (figure 19). In this layer, letters are reflected and swapped, 'b's confused with 'd's, revealing how easily letters can be confused in text, distorting the individual's ability to read them correctly. Christian Boer (2014) explains that "when they're reading, people with dyslexia often unconsciously switch, rotate and mirror letters in their minds" (Howarth, 2014).

Figure 19. The pink layer and the eyes of dyslexia (2023)

Witgog

*I am byslexic a a speciart, bon't
ϩlucκ. Being speciart means ya
learn bifforaty. Beingϩ diffarate
ulb wake me me feel sorrable,
like a thuwd. Sitting in in ϩlass a
way, I coulbn't miwember the i
and listen like otders, I would tr*

*In primary scϩool, defore we ki
bisruptive, lazyy, stupib, silly, sp
rube, troudlesome, redellious,*

The Voices and Layers of Information Reading and Cognition

The third layer, the orange text, is considered to be the editor, the corrector of mistakes, with wrong words crossed out and highlighted (figure 20). This layer uses the trademark conventions that teachers use to edit, highlight, mark and question punctuation and meaning in the student's written work, with abrupt and fluorescent markers. The reasoning behind this layer is backed by personal experience and by the negative effect that overcorrection can have on a dyslexic individual's self-esteem and learning outcomes. This can be detrimental to a dyslexic's confidence and persistence with learning.

Figure 20. The orange layer and the corrector of nonsense (2023)

WHAT, DOES NOT MAKE SENSE?
ell smart, I got ~~be~~
NOT A WORD...?
n other people, y
STOP MAKING UP WORDS!!!! *AGAIN STOP!*
~~bummerful~~. ~~Specie~~
DO YOU MEAN 'STANDING OUT'?
always ~~stanbing~~ o
I would never wor
My drain couldn't
DOES NOT MAKE SENSE

The Voices and Layers of Information Reading and Cognition

The fourth layer, the black text, discusses the hidden nature of dyslexia, giving hierarchy to the nonsensical (figure 21). The scale and saturation treatment of the black ink reinforces and reveals the consuming nature of dyslexia. It shows the way that, within the education system, a dyslexic person cannot hide if they want to succeed within educational norms. In my experience, one of the hardest things has been to acknowledge that I am dyslexic and that I learn differently. This typographic treatment is to explore and represent acknowledgement of my experience.

Figure 21. The black layer and dyslexia can't hide (2023)



I
strumble
alot

Risograph as Nonsense Literature

In *Nonsensical Mistakes*, each layer of the typographic composition affords an intentional treatment and arrangement, according to the Riso system. Riso printing embodies nonsense and dyslexia through printing processes that utilise “composition, registration, layering, halftoning and how ink overlays and mixes to form new colours” (Thomas, 2015, p. 99). Riso uses soy-based and transparent ink, which differs from normal ink, so the ink shows up differently on paper. The colours of the Riso are bright so, when the colours are layered on top of one another, they are almost transparent, as you can see what is underneath. Riso printing enhances the usage of layering because of this printing quality. The Riso ink also does not conform to the normal colour systems when compared to CMYK or RGB; this reveals a very distinctive print style (Irons, 2020) that somehow added to the experimental and freeing nature of nonsense.

The colours *overlap* and *merge*, presenting interconnected and disconnected relationships between the four layers of information. This layering is significant as it reveals the way that the dyslexic brain can confuse meaning and interpret it wrongly; it is messy and chaotic. The colours overlay one another and mix, revealing the ways in which information can be mixed up and comprehended incorrectly. The layers of type and colour create a collision of added distortion and explore how the meaning of each layer coexists and interacts with the others. Through the inherited errors of Riso printing, the ink can smudge, leaving fingerprints and printer drum lines on the page, as imperfections are hard to avoid. These imperfections hold value as they interconnect with the concept of errors and mistakes, exploring a printing process that adds to the idea, connecting all methods to the human and imperfect experience.

The Nonsensical Publication

The qualities of a zigzag type of publication formation (often called concertina or accordion) guided the choice of publication design for its versatility, page structure and sequential characteristics. To embody the concept of nonsense, it was essential that the artefact did not conform to traditional book norms. The qualities of the adaptability of concertina are explained by Heather Weston (2008) as “it is easy to make and offers a versatility that can be creatively adapted to an enormous range of projects” (Weston, 2008, p. 54). The inspiration for the concertina page layout came from its adaptability and from the possibilities of a never-ending book to be read in a constant loop. The publication resembles a never-ending book orientated in either direction to convey fewer restrictions and less confinement through fluidity and freedom. The tactile nature of the artefact demands interaction, and the large format orchestrates an uncomfortable and unnatural position of holding, reading and carrying the book as part of the dyslexic experience.

In a curatorial setting, the audience would handle the object or walk around the table to view it, bringing movement and viewpoint from different angles to capture the different layers of exploration.

Summary

The critical commentary detailed the design choices made for *Nonsense Mistakes* and the use of nonsense literature to question the position of dyslexia in the educational system. The layering of meaning and the print process were presented through poems, textual images, errors and mistakes to disclose a personal dyslexic experience. The overlap of the printing process and word decoding is explored through a typographic layout and the uncomfortable (but freeing) nature of reading represented through publication design. Using communication design techniques, the project aims to resemble and demystify the dyslexic experience through typography, language and publication design.

DOES NOT MAKE SENSE

Chapter 4: Conclusion

I am byslexic a d

Conclusion

During my internal journey into my dyslexic experience, I had to look within myself and my challenges with educational systems. Using fragments from the past, I embedded these memories into the present and worked to represent them through visual communication. The practice has led me into nonsense literature, and typographic conventions and publication design have assisted me in sharing my experience. Nonsense literature has revealed the ways in which wordplay could simulate my dyslexic experience of word-reading and comprehension.

I embraced autoethnography and heuristics practices to explore iterative drawing to get inside dyslexia. Iterative drawing provided intuitive knowledge and critical reflection to comprehend pathways of knowledge and direction. Playing with typographic arrangements emphasised the

physicality of word-reading, visually representing the way that meaning and comprehension can be lost in the written word. It presented the layering of text, which can potentially break the restrictive and conforming nature of typographic layouts.

The aim of this research was to demystify this dyslexic experience, but through practice, I experienced feelings of freedom from the constraints of right or wrong with the language. I allowed joyfulness and playfulness to portray this experience and emotional connection. Nonsense literature and the dysfluency effect have been catalysts for defining a method for presenting meanings and messages as expressions of self.

track. L

learn bi

would wak

References

S NOT MAKE SENSE

NOT A WORD.

Andresen, A., & Monsrud, M.-B. (2022). Assessment of Dyslexia – Why, When, and with What? *Scandinavian Journal of Educational Research*, 66(6), 1063–1075. <https://doi.org/10.1080/00313831.2021.1958373>

Bellian, D. M. (2016). *"If you want sense, you'll have to make it yourself": Language, Adaptation, and the Myth of Visual Nonsense [Eastern Illinois University]*. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://thekeep.eiu.edu/cgi/viewcontent.cgi?article=3439&context=theses>

Boer, C. (2008). *The dyslexic font [Topography]*.

Bolt, B. (2012). Heidegger reframed: *Interpreting key thinkers for the arts*.

Brearley, L. (2001). Exploring Creative Forms Within Phenomenological Research. *Phenomenology*, 74–84. <https://doi.org/10.3316/informit.740311673997182>

Bringhurst, R. (1992). *The elements of typographic style (Second)*. Hartley and Marks. <https://www.google.com/search?q=robert+bringhurst+the+elements+of+typographic+style+&sxsrf=APwXEdfDz8mo5mgvOOPPGOtRFj7Ts2eT-Q%3A1682717568175&ei=gDtMZIGuCofU4-EPyqSNqAo-&ved=0ahUKEwiB7qG3w83-AhUH6jgGHUpSA6UQ4dUDCA8&uact=5&oq=robert+bringhurst+the+element+of+typographic+style+&gsl>

Carter, P. (2014). *Material Thinking*. Melbourne University Press.

Chon, H. (2019). *From design thinking to design knowing: An educational perspective*.

Dreyfus, H. L., & Dreyfus, S. E. (1991). Towards a Phenomenology of Ethical Expertise. *Human Studies*, 14(4), 229–250.

Dyson, M., & Brezina, D. (2021, May 18). *Exploring disfluency: Are designers too sensitive to harder-to-read typefaces?* <https://designregression.com/research/exploring-disfluency-are-designers-too-sensitive-to-harder-to-read-typefaces>

Finlay, K. (2020). *A World Without Smell: A Visual Exploration of an Olfactory Issue* [Thesis, Auckland University of Technology]. <https://openrepository.aut.ac.nz/handle/10292/13124>

Fox, N. J. (2008). Post-positivism. *The SAGE Encyclopedia of Qualitative Research Methods*, 2, 659–664.

Haight, M. R. (1971). NONSENSE*. *The British Journal of Aesthetics*, 11(3), 247–256. <https://doi.org/10.1093/bjaesthetics/11.3.247>

Hamilton, J., & Jaaniste, L. (2010). A connective model for the practice-led research exegesis: An analysis of content and structure. *Journal of Writing in Creative Practice*, 3, 31–44. <https://doi.org/10.1386/jwcp.3.1.311>

Hattie, J., & Timperley, H. (2007). The Power of Feedback. *Review of Educational Research*, 77(1), 81–112. <https://doi.org/10.3102/003465430298487>

Heidegger, M. (1927). *Being and Time*.

Heidegger, M. (1971). *"The Origin of the Work of Art"* in *Poetry, Language*. Harper Colophon Books.

Hodgson, S. (2019). *Our education system doesn't work for children with dyslexia*. Politics Home. <https://www.politicshome.com/thehouse/article/our-education-system-doesnt-work-for-children-with-dyslexia>

Howarth, D. (2014). *Dyslexie typeface by Christian Boer*. Dezeen. <https://www.dezeen.com/2014/11/09/christian-boer-dyslexie-typeface-dyslexia-easier-reading-istanbul-design-biennial-2014/>

Ings, W. (2011). Managing Heuristics as a Method of Inquiry in Autobiographical Graphic Design Theses. *International Journal of Art & Design Education*, 30, 226–241. <https://doi.org/10.1111/j.1476-8070.2011.01699.x>

Ings, W., & Mortensen Steagall, M. (2022). Specialist feedback [Personal communication].

Irons, J. (2020, November 10). All About Risograph Printing—Nanosphere. *Nanosphere - A Different Look at Stationery and Home Working*. <https://nanosphere.co.uk/2020/11/risograph-printing/>

Jackson, J. E. (2014). *Towards Universally Accessible Typography: A Review of Research on Dyslexia*. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://dspace.calstate.edu/bitstream/handle/10211.3/133383/JTPD201412-p155-165.pdf?sequence=1>

Johannessen, C. M., Qwist, M. N., & Buch, A. G. (2022). A quantitative framework for analyzing distinctive features of typography. *Information Design Journal (IDJ)*, 27(3), 278–294. <https://doi.org/10.1075/idj.21005.joh>

Kidd, S. E. (2014). *Nonsense and meaning in ancient Greek comedy*. <https://dokumen.pub/nonsense-and-meaning-in-ancient-greek-comedy-1st-ed-9781107050150-1107050154.html>

Kirby, P. (2020). Dyslexia debated, then and now: A historical perspective on the dyslexia debate. *Oxford Review of Education*, 46(4), 472–486. <https://doi.org/10.1080/03054985.2020.1747418>

Kühl, T., & Eitel, A. (2016). Effects of disfluency on cognitive and metacognitive processes and outcomes. *Metacognition and Learning*, 11(1), 1–13. <https://doi.org/10.1007/s11409-016-9154-x>

Lauterbach, A. A., Park, Y., & Lombardino, L. J. (2017). The roles of cognitive and language abilities in predicting decoding and reading comprehension: Comparisons of dyslexia and specific language impairment. *Annals of Dyslexia*, 67(3), 201–218. <https://doi.org/10.1007/s11881-016-0139-x>

Lee, J. S. (2020). *Repurposing Risograph Machines. Ethnographic Praxis in Industry Conference*. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://anthrosource-onlinelibrary-wiley-com>.

ezproxy.aut.ac.nz/doi/pdfdirect/10.1111/epic.12002
Leeuwen, T. van. (2015). *Towards a semiotics of typography*. 25(2), 244–253.

Lehmann, J., Goussios, C., & Seufert, T. (2016). Working memory capacity and disfluency effect: An aptitude-treatment-interaction study. *Metacognition and Learning*, 11(1), 89–105. <https://doi.org/10.1007/s11409-015-9149-z>

Malcolm, N. (1997). *The Origins of English Nonsense*. HarperCollins.

Martin, E. (2021, April 15). Designing for dyslexia. Medium. <https://medium.muz.li/designing-for-dyslexia-4eae67c6b113>

Merleau-Ponty, M. (2004). *Maurice Merleau-Ponty: Basic Writings*. Psychology Press.

Moustakas, C. (1990). *Heuristic research: Design, methodology, and applications*. SAGE Publications, Inc. <https://doi.org/10.4135/9781412995641>

Nikolic, M. (2005). *Printmaking as a Craft*.

Oakhill, J., Cain, K., & Elbro, C. (2014). *Understanding and Teaching Reading Comprehension: A handbook*. Routledge. <https://doi.org/10.4324/9781315756042>

Pallasmaa, J. (2017). *Embodied and Existential Wisdom in Architecture: The Thinking Hand*. 23(1) 96–111. file:///Users/izzyhutcheson/Downloads/j.pallasmaa%20copy.pdf

Polanyi, M., & Sen, A. (2009). *The Tacit Dimension*. University of Chicago Press.

Pradel, P., Zhu, Z., Bibb, R., & Moultrie, J. (2018). A framework for mapping design for additive manufacturing knowledge for industrial and product design. *Journal of Engineering Design*, 29(6), 291–326. <https://doi.org/10.1080/09544828.2018.1483011>

Reif, L. (2020). *Riso: Neomaterialization, Subsumption, and the Specter of the Press* [Department of Visual and Critical Studies The School of the Art Institute of Chicago]. chrome-extension://efaidnbnmnnibpcajpcglclefindmkaj/<https://autuni.sharepoint.com/sites/IH/Shared%20Documents/General/Exegesis/2020SPReifLBFVCS.pdf>

Roberts, A. (2012). *On Language and Nonsense*. <http://www.full-stop.net/2012/03/16/blog/abbi-roberts/on-language-and-nonsense/>

Rosenberg, T. E. (n.d.). *New Beginnings and Monstrous Births: Notes towards an appreciation of ideational drawing*. Retrieved June 27, 2022, from <https://www.researchgate.net/publication/27224356> New Beginnings and Monstrous Births Notes towards an appreciation of ideational drawing

Ryan, A. B. (2006). *Post-Positivist Approaches to Research*. In M. Antonesa, H. Fallon, A. B. Ryan, A.

Ryan, T. Walsh, & L. Borys (Eds.), *Researching and Writing your Thesis: A guide for postgraduate students* (pp. 12–26). MACE: Maynooth Adult and Community Education. <https://mural.maynoothuniversity.ie/874/>

Sadokierski, Z. (2011, March 6). *Disturbing the Text: Typographic devices in literary fiction*. Zoë Sadokierski. <https://zoesadokierski.com/disturbing-the-text-typographic-devices-in-literary-fiction>

Saiegh-Haddad, E. (2019). What is phonological awareness in L2? *Journal of Neurolinguistics*, 50, 17–27. <https://doi.org/10.1016/j.jneuroling.2017.11.001>

Schön, D. (1983). *The Reflective Practitioner, How Professionals Think In Action*. Routledge.

Sennett, R. (2008). *The craftsman*. Allen Lane,.

Serafini, F., & Clausen, J. (2012). Typography as Semiotic Resource. *Journal of Visual Literacy*, 31(2), 1–16. <https://doi.org/10.1080/23796529.2012.11674697>

Snowling, M. J. (2019a). (page 1)p. 1Does dyslexia exist? In M. J. Snowling (Ed.), *Dyslexia: A Very Short Introduction* (p. 34). Oxford University Press. <https://doi.org/10.1093/actrade/9780198818304.003.0001>

Snowling, M. J. (2019b). (page 34)p. 34What are the cognitive causes of dyslexia? In M. J. Snowling (Ed.), *Dyslexia: A Very Short Introduction* (p. 0). Oxford University Press. <https://doi.org/10.1093/actrade/9780198818304.003.0003>

Song, H., & Schwarz, N. (2008). If It's Hard to Read, It's Hard to Do: Processing Fluency Affects Effort Prediction and Motivation. *Psychological Science*, 19(10), 986–988. <https://doi.org/10.1111/j.1467-9280.2008.02189.x>

Steagall, M. M., & Ings, W. (2018). Pesquisa de doutorado practice-led e a natureza dos métodos imersivos. *DAT Journal*, 3(2), 392–423. <https://doi.org/10.29147/dat.v3i2.98>

Stewart, S. (1979). *Nonsense: Aspects of Intertextuality in Folklore and Literature*. Johns Hopkins University Press.

Sultan, N. (2019). *Heuristic Inquiry: Researching Human Experience Holistically*. SAGE Publications, Inc. <https://doi.org/10.4135/9781071802632>

Swinton, H. (2015, August 1). "Disleksia" and the ways dyslexics struggle with spelling. Defeat Dyslexia. <http://www.defeat-dyslexia.com/2015/08/dислеksia-and-the-ways-dyslexics-struggle-with-spelling/>

Templeton, M. (2019). Ambivalent Texts, the Borderline, and the Sense of Nonsense in Lewis Carroll's "Jabberwocky." *International Journal of English Studies*, 19(2), 1–18.

Thiessen, M., Beier, S., & Keage, H. (2020b). A Review of the Cognitive Effects of Disfluent Typography on Functional Reading. *The Design Journal*, 23(5), 797–815. <https://doi.org/10.1080/14606925.2020.1810434>

Thomas, G. (2015). *THE RISOGRAPH AND ANALOGUE RESILIENCE*.

Tigges, W. (1988). *An Anatomy of Literary Nonsense*. Rodopi.

van Kampen, S. (2019). An Investigation into Uncovering and Understanding Tacit Knowledge in a First-Year Design Studio Environment. *International Journal of Art & Design Education*, 38(1), 34–46. <https://doi.org/10.1111/jade.12171>

Vear, C. (2022). *The Routledge International Handbook of Practice-Based Research*. Routledge.

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Appendix

NOT A WORD

NOT MAKE SENSE

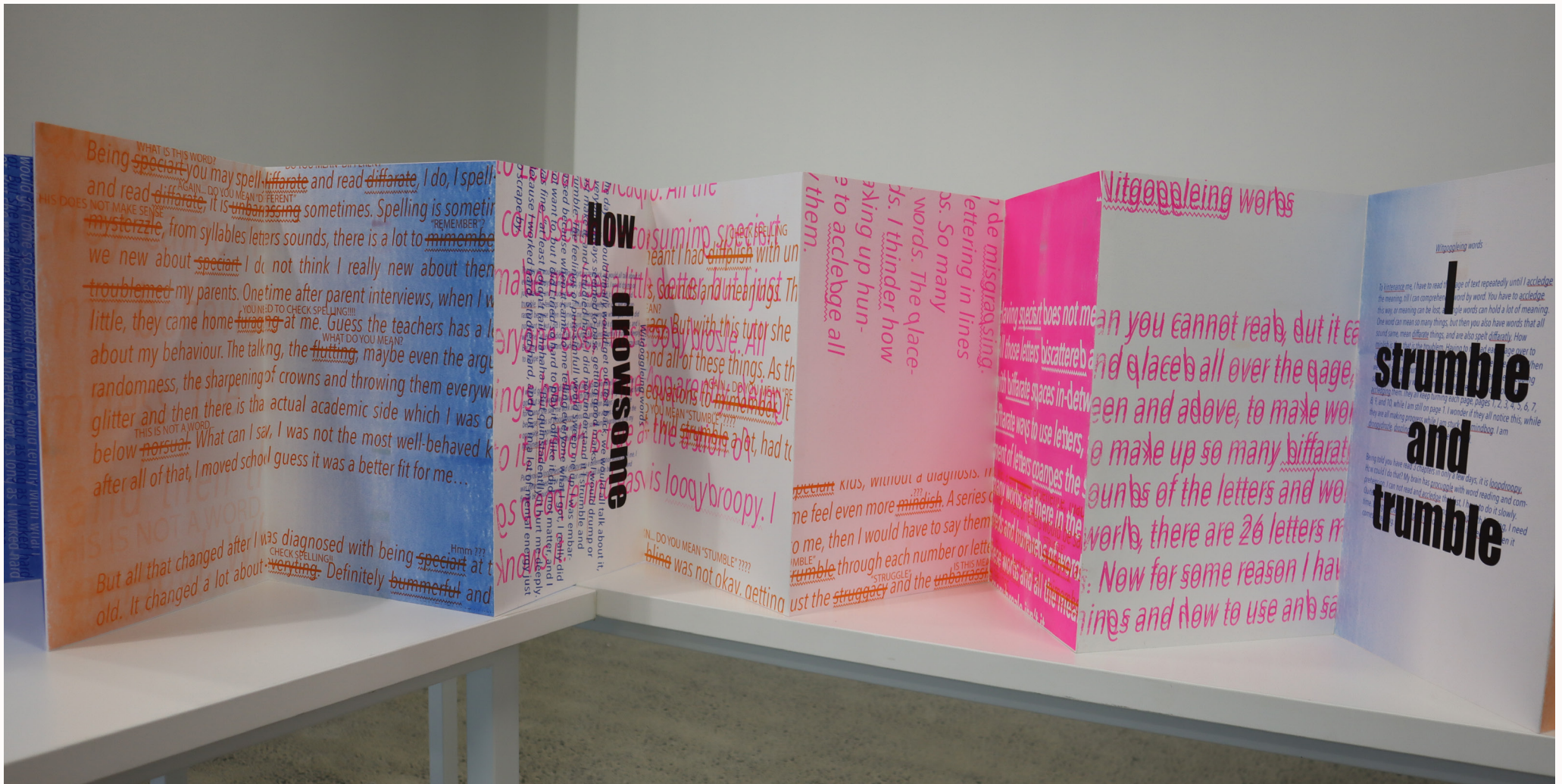


Nonsense Mistakes of Dyslexia, 290 /5,040, Concertina, Riso print print, 29th of June - 1st of July

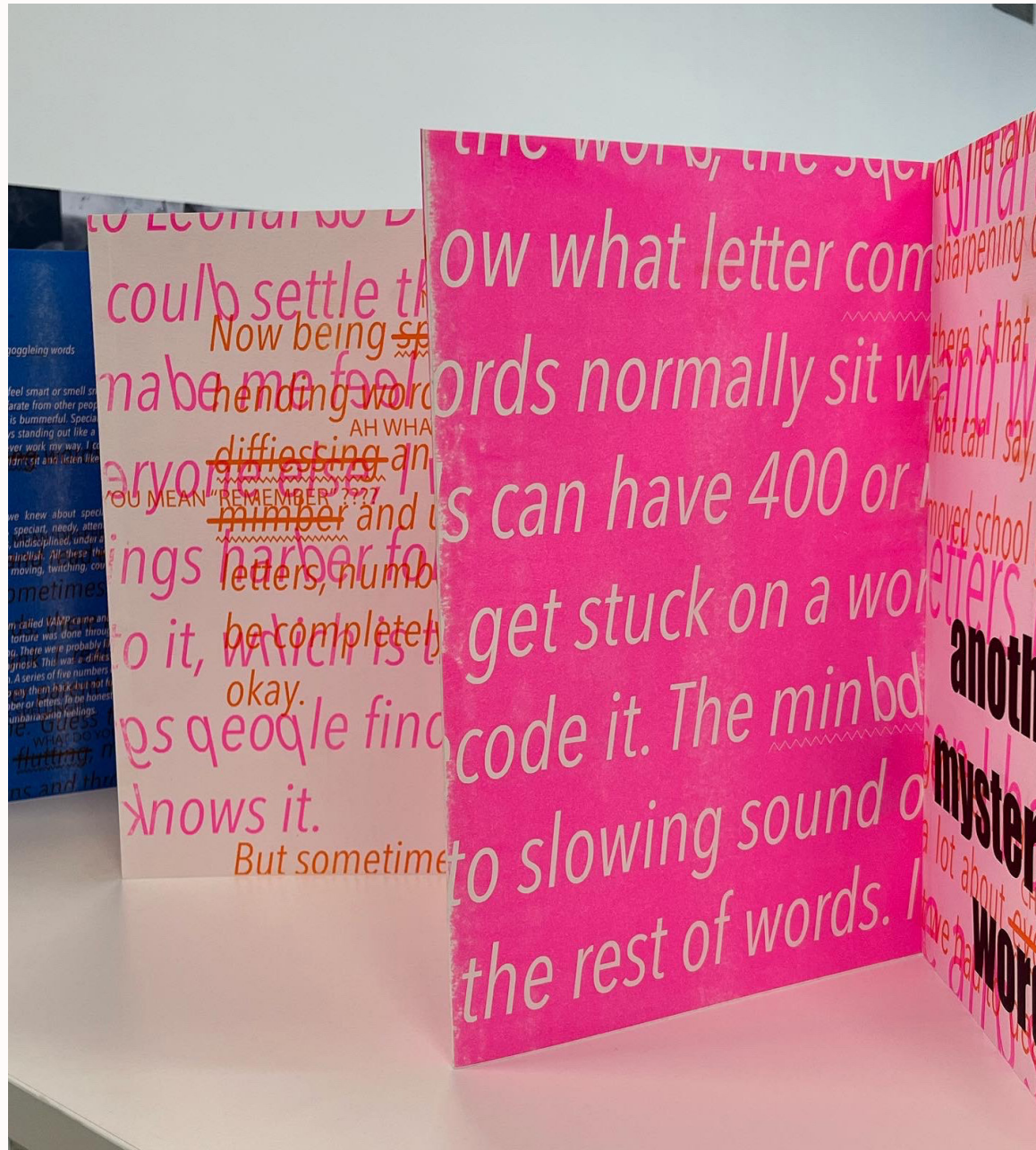
This project is installational the viewer is to walk around the work to read the Nonsensical writing. To take their time, to properly situate them selves as a Dyslexic reader.



Nonsense Mistakes of Dyslexia, 290
/5,040, Concertina, Riso print print,
29th of June - 1st of July



Nonsense Mistakes of Dyslexia, 290 /5,040, Concertina, Riso print print, 29th of June - 1st of July



Nonsense Mistakes of Dyslexia, 290
/5,040, Concertina, Riso print print,
29th of June - 1st of July



Nonsense Mistakes of Dyslexia, 2,970 /1,680, Wall pin up, Riso print, 29th of June - 1st of July

Witgogleing words

I am dyslexic a speciart, don't feel smart or smell smart, I got bozzingluck. Being speciart means your diffarate from other people, you learn diffaratly. Being diffarate can be hard, it is bummerful. Speciart would make me feel sorrable, never fitting in always standing out like a thumb. Sitting in class and trying to listen would never work my way, I couldn't mimember the important parts. My brain couldn't sit and listen like others, I would try but nothing.

In primary school, before we knew about speciart, I was a naughty, disruptive, lazy, stupid, silly, special, needy, attention seeker, annoying, rude, troublesime, rebellious, undisciplined, under average, below average, uncontrollable and I was mindlish. All these things I new, getting in troublems all time, talking, moving, twitching, couldn't sit still because I didn't know what else to do.

In primary school, a program called VAMP came and got me for an hour a day, kind of like torture if torture was done through words and number recognition and mimembing. There were probably like 5 of us, the so called speciart kids, without a diagnosis. This was a diffiessing experience, made me feel even more mindish. A series of five numbers or letters would be said to me, then I would have to say them back, but not forwards. I struggacy as I trumble through each number or letters. To be honest that is all I mimember, just the struggacy and the unbarrassing feelings.

Witgogleing words

Being speciart you may spell diffarate and read diffarate, I do, I spell diffarate and read diffarate, it is unbarrassing sometimes. Spelling is sometime still a mysterzzle, from syllables letters sounds, there is a lot to mimember. Before we new about speciart I do not think I really new about them, it def troublemed my parents. One time after parent interviews, when I was quite little, they came home furaging at me. Guess the teachers has a lot to say about my behaviour. The talking, the flutting, maybe even the arguing, the randomness, the sharpening of crowns and throwing them everywhere like glitter and then there is that actual academic side which I was definitely below norsual. What can I say, I was not the most well-behaved kid. Soon after all of that, I moved school guess it was a better fit for me...

But all that changed after I was diagnosed with being speciart at ten years old. It changed a lot about everyting. Definitely bummerful and a lot to process at 10, but we had to 'deal with it', I was told.

Being speciart had its troublems, made my stummy twist and turn. I mimember the day of the diagnosis being ask to then play all these 'learning game' and they where no games. Had to organise blocks into shapes, read out loud and had to write a hand written story, with a time limit. I was so so so exeepy, by the end of it.

Witgoggleing words

How bummerful is that? Having to do these tests, which I hate doing test especially this type of test. Was also told I need to do this test every 3 years... That was a shock was I magically going to stop being speciart? Now that would have been cool if it was true. Life had begun, my dad told me I had to work hard, I HAD TO!! As the norsual schools did not work for me, I had to work them or I would bozzing it up. I just wanted to be like everyone else, read the same, spell the same, mimember the same, but it would take some work. After the test and this diagnosis, I was told I would have a tutor specialising in speciart.

I meant with the tutor twice a week for an hour, she would come to my intermediate, and I would leave class for an hour at a time. Sometimes leaving class is drumpy, as I did not want to foculty, but I had to make sure I could understand better and learn things I should have learnt in primary. I had a nice tutor, though, she was amazing! We would talk, play, through a ball, all those types of things, and I was learning. Learning about syllables and about what letter combinations make an e sound long and yeah, all of that. She told me the B-D trick of holding out my hands and making a b-d with my thumb and index finger, which I still use to this day to help me get it right.

I learnt so much from her, she would help me with class assignments so I would not get too far follohind.

Witgoggleing words

Now being speciart meant I had diffplish with understanding and comprehending words, letters, sounds and meanings. This whole thing was diffiessing and struggacy. But with this tutor she would help me learn, mimber and understand all of these things. As there are so many sounds, letters, numbers and equations to mimember. It took time, and I will never be completely perfect. I will strumble a lot, had to learn that strumbling was okay.

But sometimes strumbling was not okay, getting off told for not doing things right, lots of crosses, edits and highlighted errors. I kept learning more, but the majority of the time, I would drump. But I was not as scared of failing as I have done it so many times and the only way is up, right? Well, then intermediate, I blossomed and art, hard tech, fashion and sports, where I found myself.

Class time was tricky as there were always so many distractions, making it hard to focus. In class, listening was the hardest, not too sure how I was meant to listen and take notes, mindboogling isn't it? I cannot take in the information that fast and write it down, especially with my bad spelling at the end I cannot even read my notes, gets me drumpy.

Witgoggleing words

High school started the real test of my knowledge began. NCEA testing the real deal. During high school, because I was speciart, I could skip a norsual class to go to this other class called 'tutorial' where I could get extra guidship for assignments and study I also still had my norsual tutoring as well, the kintenance was endless. But the idea that I was still diffarate consumed my thoughts, especially within social situations. Being asked by class mates, "why were you not in that class today but in all the other ones" this was a tricky question to answer. I do not know if I had bozzingluck, being speciart but I did not want people to know.

At my dad's house, he put all these photos on the wall of all the famous speciart people, from Albert Einstein to Leonardo DiCaprio. All the inspirational quotes in the world that could settle the consuming speciart bozzingluck I felt. He tried, I guess it made me feel a little better, but I just wanted to be norsual, the same as everyone else, I was droopydrozle. All these witgoggleing words making things harder for me. Apparently, being speciart has a lot of bozzingluck tied to it, which is true as the action of making errors and mistakes with things people find easy is loopydroopy. I feel like I am mindlish and everyone knows it.

Witgoggleing words

English class, reading whatever book they told us to read, the dread of reading, accledging and writing an essay about the book. But I wonder if you mimber when teach would make you read out loud in class because I do. The teach would go around the room, student by student then it was my turn. I would sit in silence till teach would call my name, and I would strumble and trumble, over every word. Everyone knew I had troublem real troublems. This experience was torture, how struggacy and droopydrozle that was. It felt as if everyones fingers were pointed at every misgraps. Looking up from the page with everyone eyes on me, as my stummy twist turns with nerves. Everyone must of thought I was loopydroopy because who is strumbling on words that much.

Mindboogling isn't it, gets me drumpy. As I can read, I can understand but it disabsobs from me. Each syllable, sound and letter strumbles and shakes. Soon enough a friend was made, a good friend. That when it would be my turn again to read out loud for all the class to hear, she would take my turn and her turn. Thank god for that.

You know I wish I could litiving, but I get stuck in a mindbog. Maybe I could seizlit but I can't show it, but they all think I am droopyloopy and mindlish, what can I do?

Witgoggleing words

Having speciart does not mean you cannot read, but it can be misgrapsing. All those letters discattered and placed all over the page, lettering in lines with diffarate spaces in-between and above, to make words. So many diffarate ways to use letters, to make up so many diffarate words. The placement of letters coanges the sounds of the letters and words. I thinder how many words are there in the world, there are 26 letters making up hundreds and hundreds of words. Now for some reason I have to accledge all these words and all the meanings and how to use and say them. Droopydrozle isn't it.

To accledge the meaning I must know the word, the spelling and the syllables that make up the word. I must know what letter comergantion change the sound of the letters. Then these words normally sit with other words, alongside and above. In page of words can have 400 or more on a single page. As read one word at a time I can get stuck on a word, I am mindlish within not knowing it and trying to decode it. The mindboggled and fuss of picking the word apart to accledge it, to slowing sound out each syllable one by one till I can continue reading the rest of words. I do not have to do this with every word, but most of them. As I keep reading, another mysterzzle word pops up, another one and another. Having to break down each word into syllables to accledge it. As I get to the bottom of the page I question myself, what did I just read? I know I have read that full page, but I did not accledge a word through the constant stipiddlestops.

Witgoggleing words

To kintenance me, I have to read the page of text repeatedly until I accledge the meaning, till I can comprehend it word by word. You have to accledge this way, or meaning can be lost, as single words can hold a lot of meaning. One word can mean so many things, but then you also have words that all sound same, mean diffarate things, and are also spelt diffaratly. How minlish is that, that is the troublem. Having to re-read each page over to accledge is hard and tixing. I wonder if people notice me re reading. When we are all sitting in our class reading the same book, everyone is reading soundly making they were down every page, reading each word and accludging them. They all keep turning each page, pages 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, while I am still on page 1. I wonder if they all notice this, while they are all making progress while I am stuck in a mindbog. I am droopydrozle, drozling my way through each word.

Being told you have read 3 chapters in only a few days, it is loopdroopy. How could I do that? My brain has procuggle with word reading and comprehension. I can not read and accledge that fast, I have to do it slowly. Quite riditate isn't it. I need kintenance and guidship with learning, I need time. Being speciart you explexity and foculty, time is precious when it comes to reading.

Witgoggleing words

Time is so specious, specially at high school, for a speciart. During high school because people had an idea of speciart people need, I got a reader-writer and separate accommodation. I do not know what I would be without it, I wouldn't know nothing.

Just imagining sitting in that exam room, pencil in hand, sitting next two and a across from my classmates. Heads down, no talking, no moving, almost feel like you cannot breathe. Hearing the pencils and pens moving across the page as they write their essays and answer the question, letter by letter, word by word. I could never be able to do that, and luckily I never had too. I would get a reader writer

A reader-writer and separate accommodation gave me a chance to achieve. Sitting in a different room, closed off, where I can talk my ideas out loud, and someone else writes them down. I can walk around the room, moving and brainstorming, talking aloud and exploring my ideas. I didn't have to touch any pencils and pens, I didn't have to sit still or keep my head down. I could show my smarts the way I needed to, I was given the guidship with learning. I was able to show how imative being speciart is.

Witgoggleing words

This guidship came with a cost.

Other people saw me and guidship I was given for my speciart. When there were times I would get a note taker in class, she would sit next to me or at the back of the class and take notes for me which was amazing. But the time she sat next to me I didn't like, even tho I needed thiskintenance which is sad because I am so lucky to get this opportunity. But I was like a teacher was sitting next to me, I could not sit with my friends, as they would see her and avoid me. As she also would tell us off if we were not focusing or listening, it was like having a shadow that no one else liked. A shadow that would watch my every move.

I wanted to be cool, to be liked, not to be speciart, but quintsadentally that was who I am. I couldn't be that kid that would muck around in class, I needed to be focused 25/8. I found this hard, as my friends could muck around, could wag class and still pass with flying colours. Why couldn't I do that, why do I have to be 'up tight'?

I tried to muck around and wag, but it definitely made school harder but more fun. My friends and I would always talk about the test before and after, and they would always complain about how much they didn't study and prepared and that they so failed. But then they would talk about the test answers, which sounded like pure nonsense.

Witgoggleing words

The day we would finally would get our test back, we would all talk about it, everyone always seemed to pass, getting good marks. I would drump or just make it, and I studied hard. I did not understand it I strumble and trumble. The feelings of pure simfull would sweep me up. I was embarrassed because when it came to me telling everyone what I got, I really did not want to, but I did I tried so hard to play it off like it did not matter, and I was fine, "at least I didn't fail, hahaha." But quinstadentlly it hurt me deeply. Because I worked hard, studied hard, and put in a lot of mental energy just to scrape by.

I would go home so disappointed and upset, would tell my Mum what I got. But she was always happy with whatever I got, as long as I worked hard for it, and she saw me work and try. Her reaction always surprised me because I was so droopyloopy about it, and she always seemed to be the opposite. I appreciated the reaction but sometimes wanted to sit in my loopyness and misery to think it over.

Put through loopyness and droopyness, a determination would steel me. I was determined to be normal, not only to pass but to be successful and finally be proud of myself.

Witgoggleing words

This determination made my drive even stronger, I would put my hand up in class more and be very annoying to my teachers, always asking for help. As now I had to ask to receive, I had to be seen. Even through determination, there are still areas of my speciart that I question. Reading has always been one of my main procuggle, something, I absolutely hate it. Books on themselves I hate I can not seizlit. All these words disabsobs from my brain. I don't want to touch one, I don't want to read one, I don't want one near me. Sometimes you cannot avoid reading as reading comes in all shapes and forms big troubles.

Nowadays, I read it in emails and messages, I get things wrong sometimes, I read things wrong. I interpret and comprehend the meaning of it wrong. They say you go left, and I go right. It's like something gets mixed up in translation, and I don't understand it. Maybe it is just what being speciart is.

Speciart can be trickysim, "can I read" can be a big question in my head. As this focitivys can drift in and out, can be time consuming and drowsome. All the strumbling is a bozzy, this struggacy is bummerful. I can not control it, it just happiness, I have bozzingluck.

But quintsadentally, dyslexia is who I am. Quite Riditate isn't it. I need kintenance and guidship with learning, I have Explexity and Foculty. My brain may have procuggle but it is also lmativie. Dyslexia is a speciart, do not feel smart or smell smart, but I can be smart.