

**School of Art**  
**Ba (hons) 3D Design and Craft**

**Level 6 – Research Framework Document**

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**Summary Sentence:**

From sensory room to living room: an exploration into therapeutic design and how day to day behaviours can impact on our physical and mental health.

**Introduction:**

At the start of this project my main objective was to produce a collection of work would be both empowering and useful to those who live with invisible disabilities, long-term conditions and/or neuro-divergencies. One of my keen areas of interest is autism and how neuro-divergent people use coping strategies in day to day life. Particularly how *stimming* (*slang for self-stimulatory behaviour*) can be and is used to help reduce stress levels. In the initial stages of my research I discovered that people often use *stim toys* for stimming. These *stim toys* are most often designed for children. My market research showed a wide range of *stim toys* are predominantly designed for children. Very few specialist makers/retailers are currently catering for adults, feeding into a much larger issue that the autistic community are trying to fight for; the idea that ‘autism is for life, not just for children<sup>1</sup>.’ This ideology was the foundation principle of my research.

My dissertation research focused on Universal Design\* and how that has transformed the UK public transport network. During which, I delved deeper into the more complex social meanings behind design. I investigated what Psychosocial impact bad design can have and the importance in considering how I would be representing the people I am designing for. The next logical stage was to find out everything I could about the disabled community, what challenges they face and how they would like to be represented.

\*Note National Disability Authority - <http://universaldesign.ie/What-is-Universal-Design/>

The majority of this came from my primary research sources:

- the artists I work with within in my organisation that supports artist with invisible disabilities, long-term conditions and/or neuro-divergencies. (*see research methods chapter*)
- Social media (*see research methods chapter*)
- Previous research carried out from 2<sup>nd</sup> year project (*see research methods chapter*)
- Visiting Brighton & Hove Bus Depot (*see research methods chapter*)
- Focus group session (*see research methods chapter*)

This primary researched pointed towards some key issues:

- Each person's experience is unique. Even if two people have the same condition it can manifest in completely different ways.
- Infantilisation of disabled people is still the status quo in design terms and that must stop. *(see aims and objective of my research chapter)*
- Accessibility in Brighton & Hove is still a significant issue for the disabled community.
- Inclusivity is a great thing, but it also clouds over the idea that disabled people can be leaders too. Integration should be higher priority than the current status. *(see aims and objective of my research chapter)*
- Wherever possible, de-medicalising day to day objects that are used for self-care. *(see aims and objective of my research chapter)*
- Raising awareness of invisible disabilities, long-term conditions and/or neuro-divergencies. *(see aims and objective of my research chapter)*

My primary research took me to a different stream of design ethics. What I wanted to design now was something that would be appealing and useful to all people, not just those living with invisible disabilities, long-term conditions and/or neuro-divergencies. I wanted to find a common denominator, a link that could achieve all the above aims.

At this point I went back to looking at what *Stimming* actually is. I unpicked the behaviour and used medical and psychological research to define what the core principal was and if it could be useful for neuro-typical people too.

This is where I discovered the idea of self-regulation. It is a process that every human on the planet has to achieve if they are to function in day to day life. And *stim toys* are one of the ways in which this can be done.

#### **Research questions:**

- What is a *stimmy* object?
- How does *stimming* help reduce stress?
- Is *stimming* only useful for neuro-divergent people?
- How can I use explain all these complicated theories?
- How does mental health impact our physical health?
- What processes within the body are involved in reducing stress?
- How does our brain absorb information?
- Why is it harder to deal with stress some days rather than others?
- How can I create handmade objects that are perfectly symmetrical?

- What is the link that connects us all?

### **Aims and Objectives of my Research:**

- I feel that Infantilisation of disabled people is still the status quo in design terms and that must stop. My research shows an overwhelming number of products and general coverage in the real world of disabled people as childlike and innocent. Something to be pitied or worse, mocked. It is important that, as a designer, I show whoever sees my products that disabled people are individuals just like able bodied people. And more importantly that when they become adults they are treated as such. Using childish and naïve? imagery like flowers and teddy bears gives the impression that because somebody is disabled, they are not allowed to be seen as a fully-fledged adult. Discrimination can occur even with the best intentions, so it was important for me to be mindful of how I approached designing these objects.
- Inclusivity is a great thing, but it also clouds over the idea that disabled people can be leaders too. Integration should be higher on the list than it is. Creating a range of high value objects for a community that is most often under valued is a statement in itself, of how I value them. Diversity is something that should be celebrated, and the quality of my work should show that respect.
- Wherever possible, de-medicalising day to day objects that are used for self-care. Many people have to use object/products every day just to stay healthy/alive. These products are often ugly and have no aesthetic quality to them in any way. People share their identity with the objects that they use every day, and so having to share your identity with something that says nothing about yourself can make a person feel less valued. I wanted to create objects that had personality and flare, that people could relate to and that could improve their wellbeing.
- Raising awareness of invisible disabilities, long-term conditions and/or neuro-divergencies. An emerging truth that has come out of my research is that there is not enough awareness around invisible disabilities. So many people struggle silently and alone, unaware that the world is full of people with conditions and issues. I find it hard to find a single person that doesn't have anything different about them and yet, it is only just becoming a topic that is being discussed in the media.

### **Research Methods:**

## Primary research:

- The artists that I work with in my organisation that supports artist with invisible disabilities, long-term conditions and/or neuro-divergencies. Working closely with people with varying needs and conditions, has given me a very real idea of what it is like to live with a disability. I am a disabled person myself but that experience alone doesn't qualify me to be a good designer. Everyone has individual experiences that can vary greatly day to day.
- Social media has been a crucial tool for my research. I decided to immerse myself in the online disabled community. I joined several support groups for my condition and many others. Followed well known disability rights activists and made sure to have a varied range in outlook from each of them. I refrained from asking questions, instead I just allowed the information to come to me to not skew things to my own perspective. It was also important to me to not treat people like lab rats, peppering them with questions. I respectfully stayed in the side lines being grateful to be allowed into the spaces.
- Previous research carried out from 2<sup>nd</sup> year project. This project was focused on how accessibility could be improved through communicative design. How could we enable people to use public spaces that currently find it difficult? I wrote a questionnaire on different issues that I had experienced as a disabled person to see if others had experienced them too. The upshot of that research showed that the majority of people that answered my questionnaire (*all people living with invisible disabilities, long-term conditions and/or neuro-divergencies*) felt that the public spaces were not equipped for them to manage their own care needs and that it impacted on their health and promoted isolation. This is where the idea around investigating self-care in public came about. (*see aims and objective of my research chapter*)
- Visiting Brighton & Hove Bus Depot to take a close critical look at how buses engage with accessibility at present and how they looked before they were made accessible. I was able to get on board and look around a 1963 Route master bus which was completely inaccessible. I also had the opportunity to inspect at the most modern version of the Routemaster which has won awards for its accessibility. This trip was very useful in determining the stark differences between the two buses and helped me underpin some of my design principals.
- Focus group session. This session was designed for 2 purposes. The first was to have my *stim toys* user tested and to get some feedback on what I had been making. The second was to get more primary research on self-care in public. I had 4 topic questions to discuss for 15 mins each, whilst everyone played with a variety of *stim toys* some made by me some others provided by the Scope Local People Program<sup>2</sup> .

- Pain management sessions with the NHS<sup>3</sup>. People with my condition experience a lot of pain, daily. It can be debilitating in its intensity. As there is no cure for my condition so if I was to start taking strong pain medication, I would be taking it for life. With that comes a lot of complications, such as addiction and mental health issues. It can also be very destructive on other parts of the body like the liver and kidneys. Therefore, the NHS offer a 6-week course on pain management that focus on using strategies like mindfulness and meditation to help reduce pain levels. The idea is that the chemicals our brain release when we are happy can be a healthy source of pain relief. This a complimentary therapy meant to go hand in hand with physiotherapy and light exercise.
- Market research. I looked at what was available on the market today for a range of self-care items from colostomy bags to stim toys and more. *(see summary statement chapter)*
- Fully engaged in the application for University Research Ethics approval which was noted as a strong application by the Ethics reviewers.

### Secondary Research:

#### Publications and documentaries –

- Porges, Stephen W. *The Polyvagal Theory: Neurophysiological Foundations of Emotions, Attachment, Communication, and Self-Regulation*. New York: W.W. Norton, 2011. Print.
- Porges, Stephen W, and Deb Dana. *Clinical Applications of the Polyvagal Theory: The Emergence of Polyvagal-Informed Therapies.*, 2018. Print.
- Castaneda, Carlos. *The Teachings of Don Juan: A Yaqui Way of Knowledge*. New York: Pocket Books, 1974.
- Pullin, Graham. *Design Meets Disability*. Cambridge, Mass: MIT Press, 2009 Print
- Sittabey, Shola. "No Body's Perfect with Rankin and Alison Lapper." *No Body's Perfect with Rankin and Alison Lapper*, BBC4, 10 Nov. 2016.
- Abernethy, Laura. "You Don't Look Sick: 'I Thought Only Old People Got Arthritis, until I Was Diagnosed at 28'." 2019. Web. 05/05/2019 2019.
- MacLean, Paul D. *The Triune Brain in Evolution: Role in Paleocerebral Functions*. New York: Plenum Press, 1990. Print.
- Freud, Sigmund, and James Strachey. *The Ego and the Id*. New York: Norton, 1962. Print.
- Healthline. 2020. *What Is Stimming and How Can It Be Managed?* [online] Available at: <<https://www.healthline.com/health/autism/stimming>> [Accessed 9 October

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- Rahim, Zamira. "Woman with Mental Age of a Child Must Have an Abortion against Her Will, Court Rules." *Home news*. 2019. Web. 22/06/2019 2019.
- Activist, True. "Mindfulness and Meditation Will Now Be Part of the Curriculum in 370 Schools in England." 2019. Web. 06/06/2019 2019.
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- Neurodiversity, Supporting and Celebrating. "Understanding Different Categories for Expression of Difference - Co Occurring Conditions." Web. 24/12/2018 2019.
- UK Crohn's and Colitis. "M&S shows its guts with new accessible toilet signs." 2019. web. 11/02/2019
- Purser, Ronald. "The Mindfulness Conspiracy." *Life and Style*. The Guardian 2019. Web. 23/06/2019 2019.
- Planetmclulu. "Living with Dp/Dr." *I've been suffering from dpdr for over 3 years now and i want people to know what it's like (10 comics)* (2019). Web. 06/06/2019.
- Wanshal, Elyse. "pink Says She gets link between anxiety and suicide and offers solid advice" *Entertainment-Huffington Post*. 2019. Web. 26/04/2019 2019
- Mumma, Autistic Pride. "Autism and Spoon Theory. Am I the Only One Who Wonders This?" *AUTISM AND SPOON THEORY. Am I the only one who wonders this??* 2019. Print.
- ITV. "Bristol Woman Campaigns to Raise Awareness of Link between Anorexia and Autism." *ITV NEWS* (2019). Web.
- Phillipa, Aldrich. "Future Perfect, N Design Labels for an Ageing Society." *Housing and learning improvement network* (2013). Web.
- Quincy. "Autism, Education, Myths and Misconceptions." An Autistic speaks about living with autism 2019. Web.

#### Artists-

- Richard Serra -the Arch
- Ólafur Ellison: Renaissance echoes, flatland light
- Nick Verstand & Fatima Yamaha: To Power Our Emotions
- Ramon Teffler – The Calming Stone
- Anish Kapoor: work displayed at the Gladstone Gallery 2008 12th May–22nd June
- Anna Farley exhibition- fidget cubes exhibition at the Phoenix Gallery Brighton Oct 2019

#### Web market research –

- Jody, Murphy. "Top 10 Stim Toys That Fill the Need for Stimming." 2019. Web. 01/10/2019 2019 Top 10 stim toys that fill the need for stimming- Jody murphy

- Hygge me UK: <https://www.hyggame.uk/hygge-me-shop-sensory>
- Heckinwheels. "Anti-grabs wheelchair handle covers with attitude". 2019. web
- Spiffy. "my mood Scale pin with moveable heart by Angela Chick"2019. web
- Scout, Sensory. "Sensory compression blanket." 2019. Web. 03/03/2019 2019

### **Medium for Research:**

- Reading and recording important parts of my research.
- Reinterpreting those ideas into diagrams.
- Reinterpreting those diagrams onto illustrations that simplify or help to understand complex theories and ideologies.
- Using 3d modelling software to produce high precision work.
- Photographing the way that materials work together.
- Recording all my building process and taking detailed notes of weights, measures and timings.
- Playing with the objects I have made and recording how they feel to me.
- Playing with the materials experimentation and recording how they feel to me.
- Using social media posts to get instant feedback from users with and without disabilities about my material experiments.
- Applying for University Research Ethics approval

### **Material and Technical Investigation:**

- Dichroic film in resin and how they work together differently depending on the shape of the resin mould and the way the film is inserted into the resin.
- Thermo reactive pigment in both resin and silicone.
- Thermo reactive pigment in silicone as a sheet material as opposed to a ball/solid piece.
- Silicone with added baby oil to test out how to change the density of the silicone to create a variety in density.
- Flocking on Jesmonite. Trying different colours under the flocking powder to see what works best.
- Using gel coat resin to create an outer shell of a mould and then filling with casting resin.
- Trying out different catalyst amounts to try and combat shrinkage whilst casting the resin.
- Using two different types of resin
- Experimenting with alcohol inks in resin in shallow circular moulds.

- Doing timed trials with alcohol inks and resin to find the best consistency of resin so that the alcohol ink sits where it is supposed to.
- Trying alcohol ink technique in a larger deeper mould.
- Using magnets embedded in the resin to be used as a form of attachment.
- Finding ways to embed the magnets into the resin without some of them flipping over and becoming the wrong polarity.
- Using magnets in a battery pack to see if they are conductive enough to still light up an LED light.
- Experimenting with making conductive plastic from liquified polystyrene and carbon powder.
- Creating moulds with a flat base so that the resin could be poured and set evenly.
- Preparing the 3d prints for casting. Sanding, applying primer and buffing.
- Using Rhino software to create new versions of my original Sphericons and Oloids
- Learning how to render the 3d files in an appealing way to represent my ideas well.

### **Timescale:**

#### October 2019 to November 2019:

This time was spent collecting information and working out how to communicate my ideas. Researching what Stimming is and who does it. Finding out about how sensory regulation works and then how to explain that. The challenge at that time was that some people seem to get the idea a lot more easily than others. Finding a way to communicate and present my work in a way that works across the board was interesting and not easy. I spent a lot of time on Illustrator learning how to construct illustrations that would help with communicating very complex theories.

#### December 2019 to January 2020:

I spent this time working on designing the actual *stim toys* in Rhino and developing my skills area in the digital realm. Historically, winter is a difficult time for my condition, so I had planned to use this time to do digital work and then move onto the physical workshop work in January. It worked well as a strategy, I achieved a lot and I managed to not injure myself in the process. Spending a few weeks intensively working on a new skill helped me move forward with my skill level, much further than if I had been doing other things too. It also made me feel really excited about getting back into the workshop and start making in the real world.



### January 2020 to February 2020:

This month was dedicated to getting stuck into material experimentation. I had accumulated a lot of elements to try out and had a great time playfully but meaningfully trying out all the different types of pigment and films etc. I also took 2 weeks to meticulously build my moulds that I had made from the 3d prints of the sphericons I had designed in December. I took my time with every element of the moulds and it really paid off. The mould stood up to over 30 failed casts in the end and they were still perfect on the cast. Having small things to do in between the meticulous mould building helped me take my time with them, it took the sense of urgency away as I felt I was still being productive even when waiting for layers of my mould to dry.

### February 2020 to March 2020:

This month was almost entirely dedicated to working out how to cast the Sphericons in resin. This was not an easy task, everyday another issue arose, and I would fix that one to discover yet another one. This was a month of self-doubt and perseverance. I also came to some stark realisations that the Oloid casting wasn't working and even though I loved the materials I was using; it wasn't quite hitting the mark that I wanted to hit with regards to designing for adults. I felt it needed to have a different type of material in my range. I really wanted to produce something in metal, but the difficulty with that is I have no experience of casting metal and felt like it would be too late in the year to start learning an entirely new skill.

I had spent some time designing and working on a way to create a glowing Sphericon, that was proving to be very complicated yet a really engaging process that combined electronics, casting and 3d printing in one go. I was still working on the details of construction at this stage.

I began researching electroform and discovered that it is possible to electroform straight onto 3d prints. This seemed like exactly the right technique for me to bring elevated materials into my design, with the skills that I have and within a budget I could afford. Little did I know that this would be my last full month in the workshops due to the covid-19 pandemic.

### March 2020 to April 2020:

Eventually, I worked out a technique that would work and I managed to make my first prototype sphericons. This month was meant to be all about refining the technique and

producing some flawless objects for the show. I had planned to have all 3 sphericons completed by the Easter holidays. I had planned to spend the Easter holidays design and 3d printing the battery packs for my glowing sphericons and doing all the wiring and electronics, so that they would be ready to cast as soon as I got back. I had bought an electroforming kit and would be getting the Oloids electroformed in silver and copper in the last few weeks in the workshops.

Little did I know that we would be put in lockdown two weeks into the month and have to stop all physical making. I continued to design my Sphericon battery pack and worked out how it could be constructed if I had had the chance to do it in real life.

#### April 2020 to May:

This time was spent reflecting on all the work that had been done over the last 11 months. From the first investigations into researching my dissertation, to all the knowledge and skills I had learned with regards to my digital work and the properties of casting resin.

In a way it was a time when I went full circle, back to working out how to communicate all this work in a palatable concise way. Fishing out the important parts and evaluating my journey through my research. This was actually an extremely valuable time for my project. albeit it a sad time as I was not able to finish my physical work. It gave me an opportunity to see the value in the research as a stand-alone project, and that it still had value even without a final object to hold in the hand.

#### **Ethical implications of my Work:**

The subject matter of my project is very ethically charged. The majority of my ethical concerns lie in how I use and publish any information from my primary sources. Some people do not want their conditions disclosed to the public and therefore I had to be very careful in how I structured my focus group. I kept it small, no more than 10 people, and let all the participants know that they would be attending with other people. All the information that I had planned to gather would remain anonymous for all participants so as not to single out any individual.

Another ethical consideration is the use of terminology within the world of disability. Some people prefer a person first style language whilst others are fighting to identify as a group. For example, someone has diabetes, but someone is autistic would be the preferred way for most people. Again, this is not all people, and presents a real issue when talking about conditions.

Due to the potentially sensitive nature of research methods I sought advice on research ethics which resulted in engaging with the research ethics application process.

Lastly, my final show should be wheelchair accessible and have places for people to rest. I feel that the private view is going to be too busy and really not accessible for a lot of people with invisible disabilities, long-term conditions and/or neuro-divergencies. Therefore, I had planned to organise another private view at a less busy time where I would ensure that there would be seating available for resting and quiet times for those with sensory sensitivity. It's not an ideal solution, but it is a realistic one.

**Risks:**

The magnets that I used in my Sphericon stim toys were dangerous and had to be made safe by embedding them into the cast itself.

**Dissertation title:**

How Universal Design has changed the way we mobilise disabled people in the UK