ADHD Interactive Mat

Tangible and Haptic Experience Design

By - Owee and Aditya

The Process

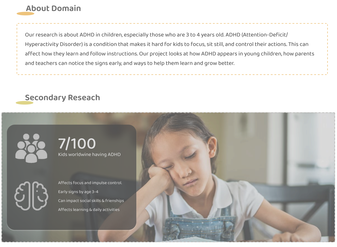
KICK-off → Topic Selection → Desk Research → Primary Research (Observation, Note Taking, Interviews) → Ideation (Mind Mapping, Brainstorming) → Low Fidelity Prototyping (Cardboard, Drawing) → Testing → Mid Fidelity Prototyping (Prototyping, Drawing) → Testing → Final Product

Cons. external selection

About Domain

Our research is about ADHD in children, especially those who are 3 to 4 years old. ADHD (Attention-Deficit/Hyperactivity Disorder) is a condition that makes it hard for kids to focus, sit still, and control their actions. This can affect how they learn and follow instructions. Our project looks at how ADHD appears in young children, how parents and teachers can notice the signs early, and ways to help them learn and grow better.

Secondary Reseach



What exactly Attention-deficit/Hyperactivity disorder mean

developmental disorder

- causes attention & impulse issues
- Stars in early childhood
- needs routine and support
- impact on learning ability
- can continue onto adulthood

Primary Research

We visited a therapeutic center called Prasanna Autism School to spend time with children with Autism, ADHD, and other developmental challenges. The experience was heartfelt and deepened our understanding and connection with them.

Affinity Mapping

Co-occuring conditions
- Mental health disorders, depression, anxiety, ect.
- Behavioral problems, conduct disorder, autism
- Learning: Dyslexia, speech delays, others

Treatments
- Therapy: Behavioral (CBT), family therapy.
- Medication: Ritalin, non-stimulants.
- Lifestyle: Routine, diet/exercise/sleep hygiene.

Symptoms
- Inattentiveness: Forgetfulness, easily distracted.
- Hyperactivity: Fidgeting, restlessness, difficulty sitting still.
- Impulsivity: Acts without thinking, interrupts.

Family Challenges
- Parenting stress: Frustration, hyperactivity, impulsivity
- School: Teacher complaints, behavioral problems, pressure.
- Stigma: Negative perceptions and morals.

Internal/External Factors
- Genetics: Hereditary family history
- Environment: Trauma, stress, toxins.

Solutions
- Counseling: Individual, family support groups.
- Educational Support: Special learning, accommodations, accessibility.
- Techniques: Focus tools, timers, calm environments.

ADHD Impact
- Academic: Difficulty focusing, low grades, needs support.
- Social: Bullying, friends with ADHD, isolation.
- Family: Stress on parents, emotional/relationship issues.

Myths, Knowledge Gaps
- Known: ADHD affects focus, behaviour
- Myths: ADHD is due to poor parenting.
- Unknown: Emotional regulation, co-occurring issues.

Based on secondary research, interviews and observing ground realities, we gained some insights

- Early Diagnosis Matters: ADHD symptoms emerge by age 3-4, but delayed recognition hinders timely intervention, impacting development.
- Parental Role is Key: Structured routines, emotional support, and a stress-free home improve a child's behaviour and focus.
- Environment Shapes ADHD: Excessive screens, poor routines, and diet worsen symptoms and hinder management.
- Holistic Approach Works: Behavioural therapy, routines, and lifestyle changes yield better outcomes than a single method.
- Awareness is Key: Lack of knowledge about Behavioural therapy delays management and increases reliance on medication.

Target User

Infants (0-1 year)

Toddlers (1-2 year)

Pre-Schoolers (2-5 year)

Need a solution that enhances concentration, reduces hyperactivity, and supports better self-regulation in children aged 3-5.

Early Childhood (5-8 year)

Persona

Wanderer

Demography

Sex: Male
Age: 3 yr old
Family: Lives with parents and an elder sister
Diagnosis: ADHD Diagnosed at age 3.5
Challenges: Attention problems, structured learning activities

About

Bo Manna is a bright and playful 4 -year -old with endless energy. She loves running, jumping, and exploring new things. However, she finds it hard to focus on tasks for long and gets easily distracted during activities like reading or writing.

Behavioural

Energetic & Curious
Easily Distracted Open Hearted

Wants and Needs

- Requires a toy with specific purpose to keep her focused.
- Requires a toy which can calm her hyperactivity.
- A play thing that supports concentration and cooperative play which can be used indoor and outdoor.

Pain Points

- Difficulty in Focusing : Struggles to stay attentive in tasks, stories, or games for long periods.
- Difficulty in Focusing : Struggles to pay attention to tasks, stories, or games for long periods.

Care Giver

Demography

Priya Shah
Age: 32 yr old
Occupation: Child Psychologist
Experience: 10 Yrs of experience with ADHD kids

About

Priya Shah is a highly empathetic and dedicated child psychologist who has spent over a decade working closely with children and families to help them navigate challenges related to ADHD and emotional growth. She is passionate about child psychology after seeing a close family member struggle with ADHD during their early years.

Products

Goals

- Empower families to better understand and support children with ADHD.
- Use child -friendly therapeutic techniques to help children build focus and manage their emotions.

Pain Points

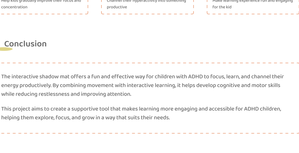
- Some parents hesitate to follow through with therapy plans, which delays progress. Focus & Harness the child's energy.
- Certain communities view therapy as taboo, leaving Priya frustrated when families avoid seeking help out of fear of judgement.

Project Brief

To design a physical toy specifically for ADHD children, aiming to enhance concentration and reduce hyperactivity

Ideation & Concept development

Mindmapping



The Concept

- Smart Play Mat – A mat with numbers, colors, and shapes to help ADHD kids learn while moving.
- Talking Speaker – A speaker gives instructions, and the child follows by jumping on the right shape or color.
- Improves Focus – Kids listen carefully and respond, helping them pay attention better.
- Reduces Hyperactivity – Keeps kids active in a fun and controlled way.
- Fun Learning – Uses sound, sight, and movement to make learning easy and enjoyable.

What we aim to solve through the solution

- Help kids gradually improve their focus and concentration
- Channel their hyperactivity into something productive
- Make learning experience fun and engaging for the kid

Conclusion

The interactive shadow mat offers a fun and effective way for children with ADHD to focus, learn, and channel their energy productively. By combining movement with interactive learning, it helps develop cognitive and motor skills while reducing restlessness and improving attention.

This project aims to create a supportive tool that makes learning more engaging and accessible for ADHD children, helping them explore, focus, and grow in a way that suits their needs.

Thank You