Designing for Children
- With focus on 'Play + Learn'

A Journey into Classroom Experience of Budding Designers in Creative Product Designing for Kids

T. Srivani, National Institute of Fashion Technology, Hyderabad, India,
thadepalli.srivani@nift.ac.in

Abstract: While design for children has historically been under-recognized, it is a field with profound influence and implications on how we are shaping future generations, and so the world. Education and practice are two capacities which largely exist independent of each other. Design professionals build synergies between these capacities to create varied formats of relevance and value. The undergraduate design students of NIFT undertake a course "Creative thinking skills" which provided an immense platform for the designing of innovative products for children meant for interactive learning and all-round development. Various inspirations were chosen relevant to the theme, each having an outcome that is original and has its unique characteristics not found in existing market. This paper entails a new methodology, which is lucid and convincing for systematic learning and designing of products by the budding designers. The classroom project was aimed at a participatory approach towards designing for kids using tools of creative thinking. The youngsters gained hands on experience in having insights to the needs of target consumer, various product attributes and use of appropriate/alternative materials for prototype development, which further projected expected functionality in the final products.

Keywords: Toy Design, Education, Design process, Product Design, Creative Thinking, Play & Learn

1. Introduction

Early childhood is a period of critical development stages and learning. There exists a close relationship between development and play as it is an intrinsic behavior of children. True learning brings a sense of joy and fulfilment to a child in the same manner that play does. Role of various products designed for use by children which supports interactive learning and all-round development are discussed in this paper. The students explored Toy Industry's Product Categories developed by Toy Industry Association, Inc. to understand variety and user specific toys for different age groups and related learning needs.

2. Designing Products for Children - Play and Learn:

2.1. Role of Play in Children Development:

Play is essential for development as it contributes to the physical, social, and emotional well-being of children and youth. It allows children to use their creativity while developing their imagination and dexterity that boosts healthy brain development (Phillips 2000 and Lamb, 2004). It is through play that children at a very early age engage and interact with the world around them exploring their potential, conquering their fears while practicing adult roles, sometimes in conjunction with other children (Hurwitz 2003 and Tsao 2002). Play helps children develop new competencies that lead to enhanced confidence and the resiliency they will need to face future challenges (Erickson 1985 and Weisz 1988). Undirected play allows children to learn how to work in groups, to share, to negotiate, to resolve conflicts, and to learn self-advocacy skills (Volling 2005). When play is allowed to be child driven, children practice decision-making skills, move at their own pace, discover their own areas of interest, and ultimately engage fully in the passions they wish to pursue (Smith, 1998).

2.2. Role of Toys in Play and Learn:

Toys are more than just fun and games for kids, which provide opportunity for children to learn. The best toys engage a child's senses, spark their imaginations and encourage them to interact with others. Every new shape, color, texture, taste and sound is a learning experience for them. The products that they use while playing help them build motor skills and hand-eye coordination. Kids who are in school can supplement their learning with fun and educational toys, which increase their retention capacity besides developing a positive attitude toward learning.

2.3. Designing for Kids

Good design for children should invite imagination not entirely being prescriptive so as to invite kids to engage with them, exercising their brains and bodies in a variety of ways. Though durability, clean ability and safety are essential physical aspects, for children under five, comfort as a utility aspect is paramount. As children age, their objects should become more open-ended and adaptable, inviting them to imagine their own stories and invent their own ways to explore, learn and create.

2.4. Role of youngsters in designing for kids

Play is a cherished part of childhood that offers parents and siblings the opportunity to fully engage with their children. Youngsters being close to their childhood learning

experiences or younger siblings are best in understanding the needs of kids to play and learn. Hence the fresh Graduates can come up with innovative products with the prevailing technologies.

3. Creative thinking skills:

Creative thinking is the ability to invent and/or create something new: be that a concept, a solution, a method, a work of art, or an actual, physical device. Creative thinking is based on looking at things or problems in a new and unorthodox way and come up with solutions no one previously thought of. That's why it's often described as "thinking outside the box." Creative thinking skills are indispensable to all professions and workplaces and hence Training in Creative Thinking skills enhances one's perspective to Problem Solving.

Table. 1 Approaches to Creative Thinking

• Looking for many possible answers rather than one
• Allowing wild and crazy suggestions as well as those that seem sensible.
• Not judging ideas early in the process - treat all ideas as if they may contain the seeds of something potentially useful.
• Allowing to doodle, daydream or play with a theory or suggestion
• Being aware that these approaches necessarily involve making lots of suggestions that are unworkable and may sound silly.
• Making mistakes.
• Learning from what has not worked as well as what did.
• Focusing on a subject in a logical, analytical way for some time, thinking through possible solutions. Daydreaming or distracting the mind, but holding the same problem lightly 'at the back of the mind'.

4. Classroom Project

The undergraduate design students of NIFT have undertaken a course "Creative thinking skills" which provided an immense platform for the designing of innovative products for children meant for interactive learning and all-round development. The classroom project was aimed at a participatory approach. The market survey (both primary& secondary research) helped them in understanding products available in the market, in gaining insights to the needs of target consumer, various product attributes and use of appropriate/ alternative materials for prototype development. The students of a class have worked in teams of 4/5 in each right from concept generation to product development, which helped in team building, exchange of ideas and application of individual skills towards attaining a common goal. Ice-breaking exercises in between allowed for freedom of thought and out of box thinking for superior ideas.

5. Design Process

This paper entails a new methodology, which is lucid and convincing for systematic learning and designing of products by the budding designers as shown in Fig. 1

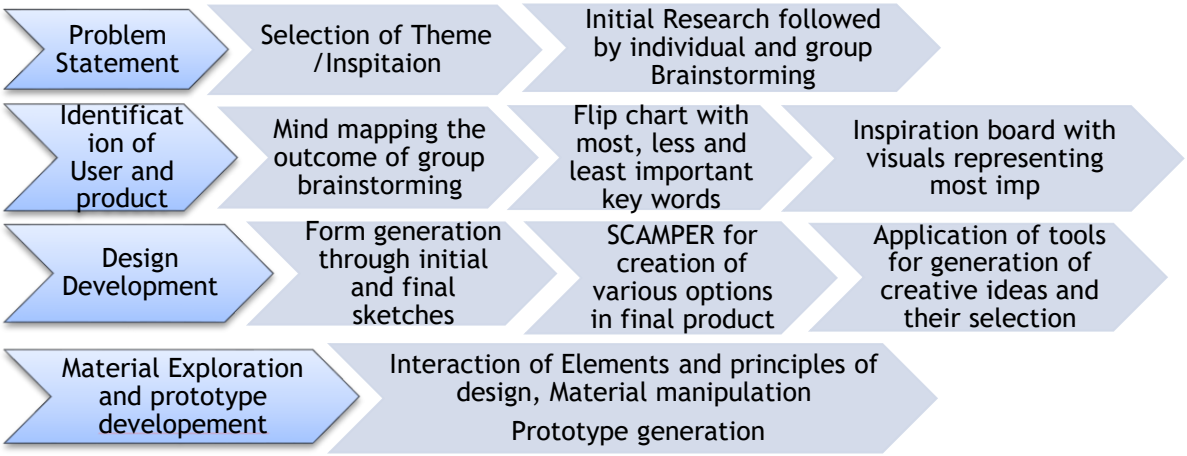


Figure. 1 Design Process

Various inspirations were chosen relevant to the theme viz., Bed time stories, Jungle book, Candies, Galaxy, Geometry, Unique, Coding and Decoding, Human body, Life, Aqua and Sustainability etc. for their projects to teach children of various age groups and needs. The learning component included the phases of psycho-social, skill and emotional development of children which would help in teaching while playing. Various problem areas were identified such as teaching basic skills for school going kids, understanding animal forms and textures by the blind, career counselling, foods corresponding to health, new generation business models, Re thinking of design for left handers etc. The following class room exercises given in Table 2 have groomed the students to handle the task of creative thinking. The exercises can be applied in any sequence as the situation demands.

Table. 2 Class exercises which served as pre-requisites for designing creative products

Tools for Creation of Ideas	Combining Ideas	**Tools for Selection of IDEAS**	NUF Test
	Kick Cards		100 Dollar Test
	The Inverse		PINC FILTER
Tools for Exploration of Ideas	Reversal	**Creative Thinking Techniques for Product Design and Prototype Development**	Brainstorming
			Mind Mapping
	Absence Thinking		Story Telling
	Assumption busting		Rich pictures / Inspiration Board
	Kipling		SCAMPER

6. Creative Product Designing for Kids

Figure. 2 Inspiration Board / Rich Pictures

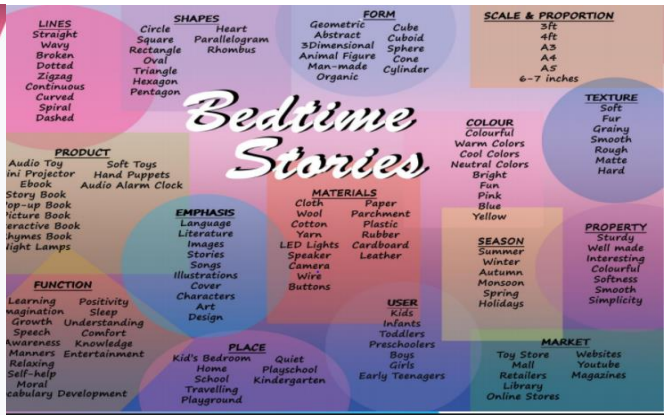
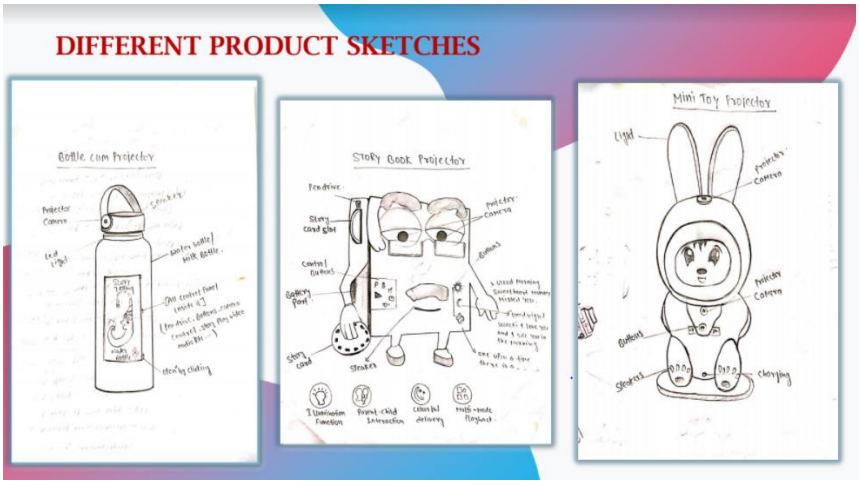


Figure. 3 Categorization of Attributes

Figure. 4 An illustrated story book on Covid Pandemic



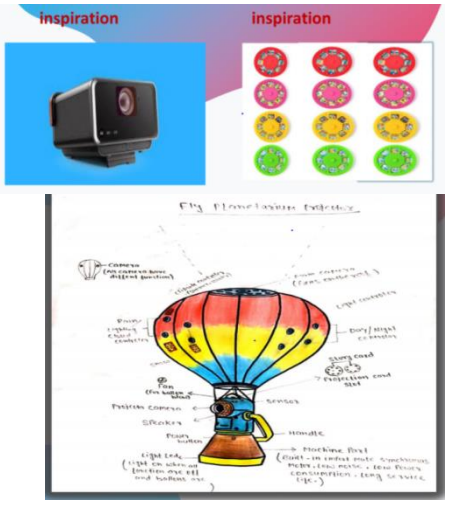


Figure. 5 Bottle, Story Book, Toy & In -house Planetarium Projectors

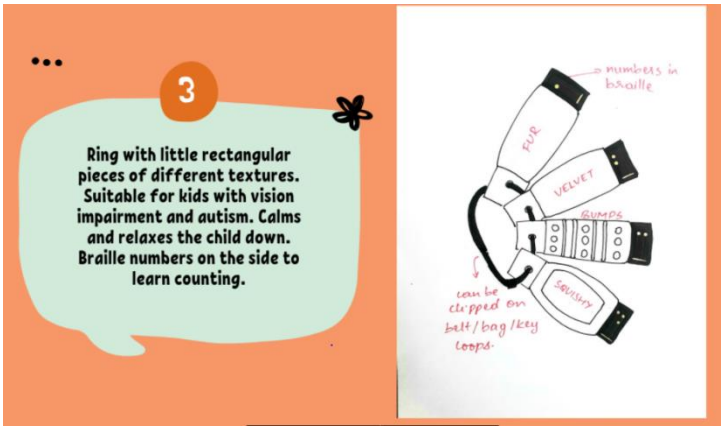
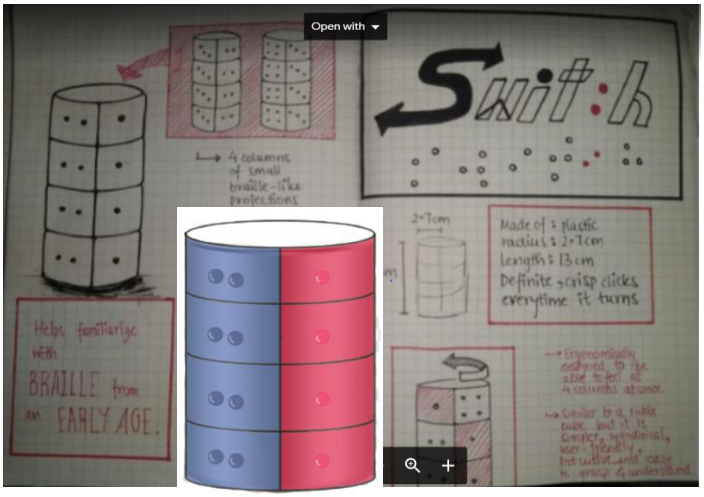


Figure. 6 Texture Keys with Braille

Figure.7 Alphabet board with Magnetic balls



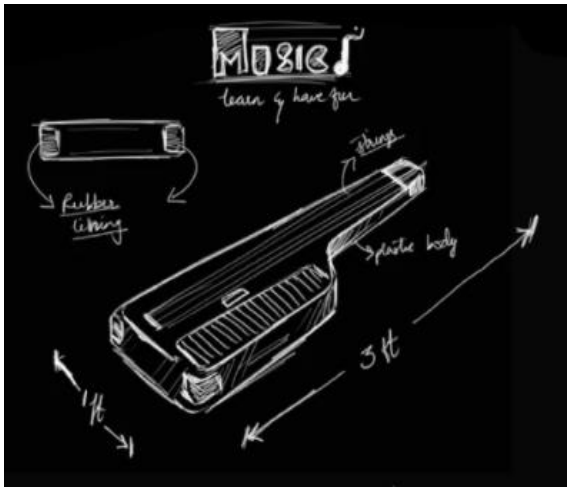


Figure.8 Toy for the Visually Challenged to play and learn numbers

Figure. 9 FUN MUSIX - Keyboard cum Guitor for the age group 5-15

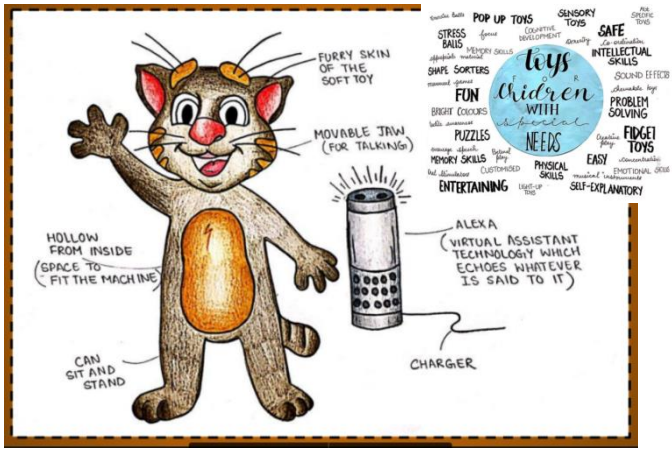


Figure.10 Multi-functional work station Inspired from chocolate for roleplay

Figure.11 Walking and Talking Lexie, An Interactive Soft Toy built-in with Alexa to enhance communication

7. Conclusion

It was a great experience interacting with the budding designers while designing and development of various products to suit various Learning requirements of kids based on age- groups. The Batch could not continue with the prototype development due to COVID 19 Pandemic and hence concluded their classroom projects with final rendered sketches. Many other products outcomes could not be showcased considering the length of paper. The stages of the product design process are to create an idea, determine product feasibility, test the product, and then launch the product for customers to buy. Prototype development and feasibility study could not be taken up due to limitation of field visits. However, it was a great learning experience for the students with full of creativity, imagination and exploration.

Acknowledgement

The Author thanks each and every student involved in the classroom project and contributed towards the creative designing of Products for children play and learn which formed the backbone for this paper.

References

Shonkoff, J.P. and Phillips, D.A. eds., (2000) *From Neurons to Neighbourhoods: The Science of Early Childhood Development*. Washington DC, National Academy Press

Tamis Le Monda, C.S., Shannon, J.D., Cabrera, N.J. and Lamb, M.E. (2004) Fathers and mothers at play with their 2- and 3-year-olds: contributions to language and cognitive development. *Child Dev.*, 75, 1806–1820

Hurwitz, S.C., (2003) To be successful: let them play! *Child Educ.*, 79, 101–102

Tsao, L. (2002) How much do we know about the importance of play in child development? *Child Educ*. 78:230–233

Erickson, R. J. (1985) Play contributes to the full emotional development of the child. *Education,* 105, 261–263

Band, E.B. and Weisz, J.R. (1988) How to feel better when it feels bad: children's perspectives on coping with everyday stress. *Dev Psychol.*, 24:247–253

McElwain, E.L. and Volling, B.L. (2005) Preschool children's interactions with friends and older siblings: relationship specificity and joint contributions to problem behaviours. *J Fam. Psychol*. 19: 486–496

Pellegrini, A. D. and Smith, P.K. (1998) The development of play during childhood: forms and possible functions. *Child Psychol. Psychiatry Rev.*; 3:51–57

https://www.skillsyouneed.com/ps/creative-thinking.html, accessed on 12.01.2021)

https://www.skillsyouneed.com/ps/creative-thinking-techniques.html, accessed on 12.01.2021)