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► **To cite this version:**

Surabhi Khanna. Timeless Toys & Tales: A Design Process in Education. 8th International Toy Research Association World Conference, International Toy Research Association (ITRA), Jul 2018, Paris, France. hal-02081014

HAL Id: hal-02081014

<https://sorbonne-paris-nord.hal.science/hal-02081014v1>

Submitted on 27 Mar 2019

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Timeless Toys & Tales

A design process in education

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Abstract

"The best thing a child can do is to break a toy; the next best thing is to make it; even better is to create it." As part of my work, I explore design processes in school education in India. The intent is to integrate in curricula, design processes through series of design in education workshops. Why deploy toy design as a medium to achieve such a goal? Everyone can easily connect to toys and games. We usually start the workshop with a study of a heritage toy. As part of "toys and tales" workshop series, usually one specific toy design or concept is selected and explored through various 'Tale' concepts. This process helps create many ideas for toy-product design. The participants are generally teachers of education, therapy, child development and psychology. They are able to develop new ideas in these workshops. The aim is to empower educators and enhance their creative abilities in their respective work by introducing design process, relating toy and game design. I teach product design at a university in India. We felt the need to introduce space and facilities whereby both digital and tangible toys and games may co-exist. The design students are encouraged to incorporate elements of play in their product and interior design projects. Students value this approach as it brings a special design process. In my studio, I design and produce toys in small quantities. One of the toy design projects, "Khel Manthan (Churning-Learning) – handcrafted storyteller and storymaker", is designed and developed with a community. The experiment is used as one of the case studies during design in education workshops, to highlight the significance of the design process. I will be presenting some of the experiences from these workshops and courses with various groups of school teachers, university faculty, students, and development communities involved in training. My presentation will highlight the process of design development work through group participation.

Keywords: Play Heritage, Indian Design, Toy and Game, Design and Education

Timeless toys and tales

Like many children, my parents used to get toys for me. I would play with the toy for some time and then what would I do? I would break it. Broke most of them while trying to figure out what they were made of or whether they could be joined again. My parents would let me do so.

“The best thing a child can do with a toy is to break it; the next best is to make it; even better is to create it.” My work is based on this philosophy. We usually start with a heritage toy, understand and learn how it is made and then create it. As part of my work, I explore design processes in school education in India. Why deploy toy design as a medium to achieve such a goal? Everyone easily connects to toys and games, and this can help students get naturally involved in the activities and connect.

Three examples of toys which are timeless have been explained in the paper:

- 1) Tik-Tik
- 2) String-pulled Puppet
- 3) “Khel Manthan” – Churning Learning

These toys have a different type of playfulness, which is eternal. Most of these toys have been played with by generations and made by children or crafts-persons. Yet, though the timelessness of play, it is evident in these toys they toys are becoming extinct. The workshops on design through toy, game and play, are an attempt to revive the process of toy making and to promote the quality of timelessness of the toys.

A design process in education

Toy is a concept; it's an idea. For children, a toy is their ownership, their idol. They constantly want to learn from it and many questions can be answered with toys.

This paper highlights interaction of design and research through design development of toys and tales. Design and education workshops were conducted for various groups of participants – teachers, teacher-trainees, and children. The workshops helped understand how a design outcome can be used for further research.

Over the last seven years, 61 workshops for 1747 participants have been conducted, mainly in India and some in Colombia, Denmark, and Thailand. These are depicted in the table below:

Table 1. Workshop groups and number of participants from 2011 to 2018

No.	Group	Number of workshops	Average number of participants	Total participants	Countries
1.	Teachers	21	25	532	India, Colombia
2.	Teacher-trainees	12	29	349	India, Colombia, Denmark
3.	Design students	6	26	153	India, Denmark, Thailand
4.	Children	22	32	713	India, Colombia
	Total	61	29	1747	India, Colombia, Denmark, Thailand

Toy with value and play therapy: Tik-Tik

Toys provide skills, while tales focus on communication. Together they are active tools for learning. "Tik-tik"¹ is a toy made with simple available materials – metal bottle cap, thread, rubber band, and button. The play is also simple. The player pulls the knotted thread. The stop from one knot to another is what helps create the sound. The knots make the button interact with the bottle cap. Sounds simple, yet when the toy is given to children below 6 years, they are unable to play with it. They hold on to the knot. Whereas children of above 6 years have ability to let go with their fingers and are able to go from one knot to another and get sound. It was inferred that in life when you let go, you experience joy. A value imparted with such a simple toy. The toy may not be more than 100 years old. Bottle caps²,

¹ Cap-Tap toy is explained in Khanna (1992) p. 28

² The origins of the bottle cap we know it started in 1890 with William Painter. Painter came up with a one-time use cap with a cork lining - called crown cork since it resembled the British Queen's crown. This type of bottle cap is still in wide use today by the beer industry. The invention in the early 1900s of mass production of glass bottles lead to an increase in the use of crown caps. In addition, further growth came from other containers being converted to bottles in order to make use of the crown cap.

have been relatively a recent invention.



Figure 1. "1ik-1ik" – a toy which imparts the value of letting go

It can facilitate play therapy. When given to adults, it was observed that some are able to play quickly and some took longer. When studied, the ones who had some tension or stress took longer, while the ones in a peaceful or playful state of mind could get sound quickly. So it is playfully called it a testing toy.

Toy with skill and communication: String-pulled Puppet

It is the process which is special, the dynamics of integrating with each other. Participants often work in groups. They also try to connect stories. One toy can be explored with various groups. The example explained is a string pulled puppet-toy tried with various groups. The string pulled puppet mechanism is a tradition

Within 20 years nearly all soft drink and beer bottles were sporting crown caps.

based toy in many parts of India. We simplified the structure, so that workshop participants can easily understand and create the structure. The nature of exploration varies with each group of participants. Children like to understand structure and create popular characters. In workshops in India, Denmark and Colombia, it has been explored as a teaching aid with teachers and teacher-trainees and students of pedagogy. With students of architecture, this was explored in the design of an installation. This shows how a heritage toy could be found in many variations and tales. Empirical research showed how the outcomes can be used for further research. In this case, the outcomes gave us a chance to understand how can we use the same basic structure to create, a tale, a teaching-learning tool, and a large scale installation. Design is an important tool for research. Toy, game and play design workshops explore this.

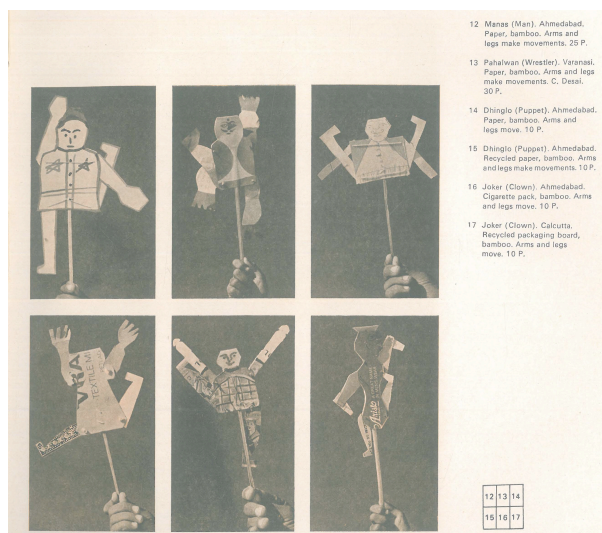


Figure 2: Various explorations made by crafts persons, documented in *Dynamic Folk Toys* (1983); Construction of the string pulled puppet simplified into geometrical shapes and pivot points, developed at Surabhi Khanna design studio

For School Students: The workshop with 20-odd students of Sardar Patel Vidyalaya School, New Delhi was interesting. Grade 6th, 7th students explored many tales and forms. The students understood the basic structure. When they had to make the structure, they got stuck on tying simple knots. It was realized that such simple skills are important to make toys. The children made a variety of stories. "My superman will fight with your iron-man", a ghost with red hair, a cow telling her story, an angel who makes scientific toys; many stories created by children were shared, narrated, and laughed.



Figure 3: Workshop on Design & science toys with String Pulled Puppets: for grade 6th, 7th students of Sardar Patel Vidyalaya, New Delhi, 2014

For Teachers: A Design & Education workshop on “Toys & Tales for Joyful Learning” was conducted for teachers of school JB centre, Faizabad, Uttar Pradesh. The workshop introduced toy design as tool for holistic & experiential learning. There were design, play, and creativity mini projects. These provided opportunities for skill and creative development. The practical outcome was in form of playful design models, made with simple materials like paper, thread, and glue. These were useful for understanding the interface of mind, material and media. This process enhanced abilities of creating (toy and stories), communicating (playing and telling story) and co-relating (toy and learning). Teachers worked on the string pulled puppet and created concepts, most of which had an associated story. How a crow puts pebbles in a pot of water to raise the water level to drink, two girls moving pigtails and singing a poem, how a frog likes to be on grass and make ‘tar-tar-tar’ sound, birds protecting their eggs; were some of the concepts.

For Teachers’ training: A Design and Education workshop was conducted for Teachers’ Training college, Mata Sundri college, Delhi university (DU). The 40-odd students of pedagogy of B.El.Ed program, 1st year, made many various forms of animals and stories. As they were seated in groups of four to five, they instantly presented their stories together by connecting all their characters to one story. Forms like cow, peacock, eight-legged spider, barking dogs, a hunter hunting for the tiger who is protected by its friends monkey, peacock-peahen, rabbit, “a chicken who got up early every morning and wake up a dog by his sound”. So the dog decided to scare chicken. But chicken was so big that the dog got scared. The dog decided to bark from the back ‘bow-wow’ and scare the chicken away”, and many spontaneous stories were created by the participants, by understanding the movement and nature of the toy.

For Design students: Students of 4th year of architecture at School of Planning and Architecture (SPA), New Delhi, were given a brief to study a heritage based toy and design it in a different context. We felt the need of introducing playful activities in spaces, whereby both digital and tangible toys and games can co-exist. Encouraged to incorporate the elements of play in their projects related to architecture, interior and product design. Students value this approach as it introduces a different design process. A group of three students studied the string pulled puppet. They explored the mechanism in five times larger scale. The toy was explored as an installation. A headless life-size puppet with string pulled mechanism was created. The player's head become a part of the installation. A player becomes part of the toy. "Hulkfie", as the installation was called since it was inspired by Hulk's form, became very popular installation at the student festival. Students took selfies with the installation. The leg paddle, moved arms of the puppet, making the installation dynamic.



Figure 4: Toys and Tales with String Pulled Puppets: at teacher's training course, Mata Sundri College, Delhi University, 2015

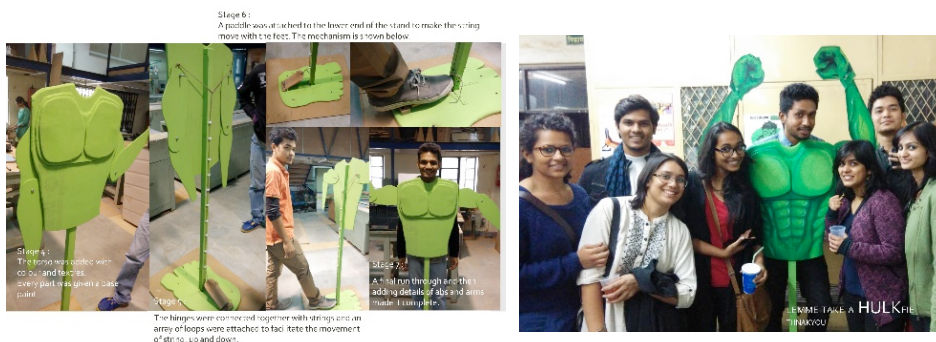


Figure 5: Workshop-Elective outcome with students of school of planning and architecture (SPA), New Delhi, India, 2014

Toy idea developed for vast education network: Khel Manthan (Churning-Learning)

One of the toy design projects, “Khel Manthan (Churning-Learning) – hand-crafted storyteller and storymaker”, was designed and developed with community’s active participation and training. It encourages multiple storytelling, free play, and children making stories without rules.

My home, my friend, my food, my family – these were themes used for early learning. Interchangeable characters were made and multiple story telling is encouraged. The play between grandfather-child is a preservation of heritage of relationship through playing together. We produced this as a batch. Handcrafted embroidery skills were incorporated. Unskilled women labourers who used to work for construction in harsh weather were trained. They could work on this from home while taking care of children and family. The cloth bag packaging with graphics helps a child place characters back into the pockets. The experiment is used as one of the case studies in craft, design and learning.

Relating & associating things & concepts

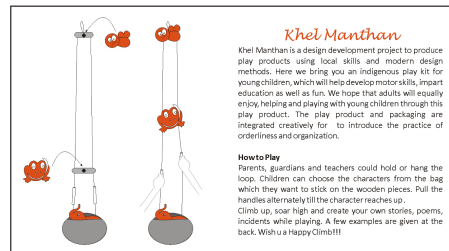
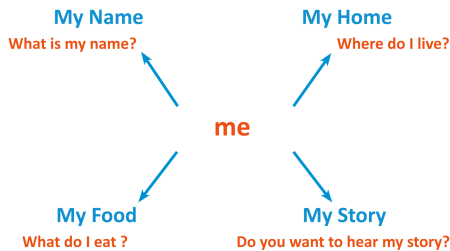


Figure 6. Khel Manthan – Churning Learning, handcrafted story teller and story maker

Toy and Education

The design input in learning through toy and game making workshops has been interesting. Participants get a wholesome understanding of material knowledge, history, design elements, science principles, the joy and experience of creating. Table 2 mentions the various learning through the toys explained in the paper. The three toys which were being explained in this paper have used string in various means. In tik-tik, the string is used to create a pause. In string-pulled puppet, the string is the main link for movement. In Khel Manthan, the string is an agent to help the structure climb up and down. The string becomes the facilitator; the timeline linking the three play designs.

Table 2. Analysis of the toys explained in the paper

No.	Name of Toy	Material	Design Element	Principle of Science and technology	Learning Value (of playing with the toy and/or making it in the workshops) in terms of design process
1	Tik-Tik	Metal bottle cap, thread, button, rubberband	Continuous movement,	Sound created by friction/hits	Hand skill, patience, recognizing various sounds due to difference in gap of knotting, ability to hold and let go
2	String-pulled	Paper, needle, thread, ice-cream stick	Symmetry, movement	Link-mechanism	Concept development, understanding structure, story making and telling, creative process

3	Khel Manthan – Churning Learning, based on the Climber toy	Originally made from cardboard, string, now designed with textile, wood, hand-crafted embroidered characters	Movement, form, symmetry, balance	Steering by friction	Multiple storytelling, recognizing characters, child to child play, child to adult play, story maker and teller, encouraged imagination
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Reflection

Exploring a special design process in education through toy design has given the following insights:

- Such a method can be used in formal or informal education.
- Children, teachers, and communities – love to design, develop and make toys and games. There is a sense of achievement.
- The action of toy making helps discourage consumerism and promote the value of making and creating products.
- The design explorations also are cultural resource for learning.
- Interaction between adults and children is retained. There can be a connection between generations.

Timeless toys have the potential to be developed into a new range of ideas which can strengthen the value of play and learning. Each toy can be explored in terms of design ideas. The inputs of such toys and tales workshops can make learning joyful and comprehensive. It also connects design and education in an organic way. The outcome is relevant in today's context of education and research.

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