



# Designing for Children

- With focus on 'Play + Learn'

Not play; but playfulness- Not readymade toys; but  
conjuring up of toys

*Exploring how children create knowledge by decoding various experiences and  
what can they design, educate and learn from it.*

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**Abstract:** Literacy shifted the cognitive source from the real world to the written word necessitating children to be helped to become part of the educated adult world. Children as deficient beings thus got established and literate adults in their hurry to teach children not only ignored the natural processes in children but also imposed their own notions. Thus playfulness in children became play as a separate category; readymade toys got built to play with, denying the natural tendency in children to re create their experiences. Nature has endowed children with proper system- tools and process- to understand their context autonomously but schooling took away both the system and autonomy. Undergoing design education helped the author to understand the primacy of experience which enabled a fresh look at children. The paper explores the similarity between design learning and how children playfully explore the world and also looks at how design education in particular and education in general can be improved by learning from children's natural ways.

**Key words:** *Biological roots of learning, Creation of knowledge, Autonomy, Cognitive damages due to early literacy, Natural process.*

## 1. Introduction

This paper explores the subject in unusual ways, playful to some extent but backed by documentary evidence. One of the most important lessons learned by studying children is that children do not use reason to 'understand' but understanding to take place in them the way digestion happens.

May for once spring clear without my contriving.

If this is arrogant, God, forgive me,  
but this is what I need to say.  
May what I do flow from me like a river,  
no forcing and no holding back, the way it is with children.  
Streaming through widening channels into the open sea.

- Rainer Maria Rilke

The paper explores what is experience, how children make sense of their experience by recreating their experience through playful re-imagination and re-invention. In such a process not only understanding takes place within the realm of experience but also questions, reflection and even imagination takes place in experience ((that's enacted as play)) hardly ever using language.

We further posit that literacy has rewired the neural system of the literate people, reorganizing the total cognitive system. Language, especially the printed word, which has become the cognitive source of modern man, embeds its condition and characteristics. The fact that what is being written about is absent, demands the reader to guess, forces thinking and imagination, reasoning and impacts his formation. After all human being is primarily a biological being and will be affected biologically as it engages with the context. Modern child's context is people who have become experts in using words (educated parents and teachers) or who are in the process of acquiring this mastery (students), text or digital information and a make belief game with tests and certificates. This context damages and distorts the biologically based cognitive tools, process and structure. This has also created another kind of children, considered deficient because for the first time children are assumed to be in need of assistance to learn.

“The child is only childlike in comparison to what is not childlike” (van den Berg, 1961, p. 32), and when adults become un-childlike, the true nature of childhood appears. Children become children when adults become more “adult.” childhood appears in response to cultural changes in adult existence and consciousness. This essay supplements van den Berg’s argument by showing that the 12th-century invention of literacy provides the textual technology to gradually effect these profound psychological changes in child and adult consciousness. A brief phenomenology reveals orality and literacy to be different forms of being in the world. As cultural practices they structure memory, knowledge, and identity in divergent ways.

Literacy and the Appearance of Childhood Eva-Maria Simms, Duquesne University

The author of this paper has stayed with (immersed himself in) communities of highly skilled but non-literate artisans in various parts of this country not only studying

their knowledge system but also studying the conditions that enabled the creation of knowledge and formation of their world view. Naturally apart from studying the adult life, children have also been the focus of the study as children are the knowledge link between generations and how they learn, what they learn etc was very crucial aspects that needed to be studied to understand the cognitive process among traditional communities. The author has studied children by documenting their spontaneous activities for about 30 years and have been able to find a clear pattern as to what they do what they make, how they recreate experience, what they draw, how they explore in this 4000 odd videos, equal number of photographs, of things they make and draw.

More damaging than literacy is the way children's life has been organized around the fragmented categories of existence- learning time, play time, entertainment etc and have been provided with simplified, miniaturized, infantilized version of the world. Children are cordoned off from real world, its integral and holistic nature. All this point to a misunderstanding about the real potential in children, their learning process and what knowledge they acquire naturally.

Having studied design from NID, Ahmadabad three aspects of Design education helped the author to understand children better. The ambience (at the design school), its pedagogy, learning process and content - brought out the child in him, allowed for playfulness. Design education is totally experientially based, which also means that it is the real world that one is learning and exploring. By demanding creativity design education forces the learner to give up the known and be in the realm of unknown. Design education provides the condition for becoming childlike again.

Playfulness in children is due to them being in the realm of the unknown which is also the condition for the awakening and development of creativity.

So the paper will explore what and how children learn naturally, impact of literacy and schooling, the similarity between how children learn and design education and the possible mutual learnings in order to improve design education as well as for re imagining a conducive conditions for the total awakening of children's potential.

## **2. Children- making sense of the world**

### **2.1 learning as biological response**

Children learn life by living- experiencing, engaging, exploring..... life is a process, so is learning.....

Learning is the basis of life. Learning is the natural mechanism to sustain life. We are internally designed by nature to learn in order to live.

Children learn the world, the way they experience it. Just as food forms the body the sense inputs or experience forms the mind. What the child learns, left to itself is the way the world is- the totality of their context. The world awakens the child to the workings of the world in the child. Each species does this by engaging with the world autonomously. The context awakens the particular qualities to root ourselves in that space.

So children are learning the way the world looks, the quality or the property of its materiality and the functions, processes and the various phenomenon that happens around them. This is the most scientific way of understanding the world around as well as sharpening the tools to understand the world and developing the qualities to be in the world. The integrity of the world is retained by this integral way of relating to the world. The holistic nature of the world awakens the holistic nature in the child.

In order to learn the three dimensional world children play and make toys. This is the process that has been granted by life. But what children play is what children experience every day. What they see, touch, feel, experience etc.

## **2.2 child learns the world, the world forms the child**

Whatever children experience is the content of their 'learning'. It is in experience that children awaken, develop and fine tune their senses- the tools for knowing and the qualities and the skills. Even values are learned in experience. Since this learning takes place in experience what they know is implicit.

Once, a friend of mine was in a village market. There he came across a 12 year old girl making and selling beautiful bamboo baskets. He enquired whether she could teach him to make such beautiful things. She replied she doesn't know how to teach. Then he re framed the question and asked her to teach the way she learned.

She was puzzled by this question, thought for a while and answered that she did not learn!!!

So this is a simultaneous process in which children are forming themselves, developing the tools, values, abilities, skills etc as they are exploring, experiencing and knowing the world around.

## **2.3 The process**

Children make sense of the world by comparing, finding similarities and finding differences of various aspects of what they experience. This is done in experience and not by using language nor is it done consciously. All senses are involved in this process simultaneously

making the connections of various attributes of the world. As children experience more and more the inputs gets categorized and organized into a coherent understanding of the world.

Children get immersed in their experience, absorb and imbibe. Children in Bangalore slums can speak about 4 to 5 languages by time they are 4 years old.

Look at this situation carefully.

There is no one teaching consciously, no one is learning consciously, no memorizing, no syllabus, no order of learning, no simplification done for children to learn, no testing to find out what level the child has reached etc.

Knowing is happening all the time whether we want it or not.

None of the methods we use in our schooling system is used here. In most parts of India people who study up to MA/ PhD cannot speak in English unless they have folks speaking English at home. These children also pick many skills in the environment-cooking, electric repair, auto repair, cycling, driving etc in similar fashion. There was never a structured, organized in sequence and ordered input for learning any activities. Whatever is seen, experienced is absorbed without choice and the self organizing capacity re order whatever has gone in.

Two most important lessons are 1. Conscious memory is not needed and 2. Reasoning is integrated with non- reasoning. Or we could call this spontaneous reasoning. And the way they remember without conscious memorizing could be called 'organic memory'. These are our biological capacities which are not learned but awakened and developed by the context.

### **2.3 Decoding the world**

Children playfully explore the world. They re create whatever they have experienced, breaking it down into various aspects of the experience. Children simplify the complexity of the world they experience. They explore the form, function, process, structure and behavior or possibilities of the material or of the situation of whatever they have encountered. They revisit the same content again and again till they master it and in the process the content also gets deepened and widened. This can be compared to how children 'learn' to walk after going through a long process that finally equips the child to walk. In this process of learning or making sense of the world various disciplines gets covered in a very integrated manner and unless one is exposed to the modern educational paradigm one may not even realize the fragmentation of content into various disciplines. Just as in learning to walk, as the child grows the learning tools gets developed, processes get finer and content gets deeper. PRIMARY, SECONDARY, HIGHER EDUCATION TO BE

ORGANIZED IN ACCORDANCE WITH THIS FACT. The integral nature of the world is retained in this manner. The present fragmented and compartmentalized content fragments the learner too. Unlike the modern educational paradigm the rigid division between discipline doesn't exist in this process.

One example to understand how children simplify the content is to examine how children explore various aspects of house- how it looks, what is the function, how is it made, with what material, and also as a result structural aspect of the stability and the possibilities of various materials. They remake the house with whatever material they get and usually it is the form that children explore first. That is how a house looks like. By positioning the book like a tent, they re create the form of the house.



Form-Almost all children do this with a book to create house



Form- Children made this structure that looks like apartments (using books)



Form- Children made this structure that looks like apartments with bricks



Form- A structure that looks like a temple with bricks, stones etc



Form- Bike with bricks



Form- Bike with tyre and coconut leaf stalk



Function- Making use of existing possibilities-  
Space is used as house



Function- Quick creation of space with easily  
available objects



Process- The focus is on making



Process The focus is on making





Structure- Exploring structure



Structure- Double storey building



Structure- single storey



Structure- double storey



Children attempting to make a big house



Material exploration (possibilities of each material)



Material exploration



Model making



Model making



Defying adult notions



Sitting inside the house!



The house became class room for sometime and then a temple

### 2.3 language and form

Children learn language in the same way they learn the world. Child listens to people around, paying attention to what it sounds like; just as the manner they explore form. Children build language along with the experience they are having of the world and uses similarity between things around to build names and create various categories.

It was observed that an eight month old child called a flying peacock as kaka (kaka is Malayalam for crow) and when it landed and started walking called it kutha meaning dog. As the child had first encountered kaka several times and learned the word kaka for crow, he began to call all flying birds as kaka. Same thing happened in the case of kutha. Children even give their own names to various things and build on it making use of the similarity of some kind. It need not be just form but also color, texture etc. Once I found a child using a violet colored flower to represent bringal.

Another instance is how the child saw the similarity between cat and tiger, dog and wolf and how the lion confused the child as the body of the lion looked like dog but the front more like a cat.

Children in fact create their own words (sounds) to many things in the early stage. For instance for a particular child cats are MIMI and dogs are KUKU. So the tigers are BADA MIMI, wolves are BADA KUKU, front face of a lion is sometimes MIMI but side face of lion is always BADA KUKU. (BADA meaning big)

A child, who used to call water pa on seeing it called it paabooo. The child was also using all his body to indicate the hugeness of the sea and the boo was to denote the roaring sound of the sea. So there is proper system inherent in the child, not only to understand experience but also to integrate experience and language.

The real meaning of the child learns to speak means the child learns to articulate its understanding of the world. The child's language cannot be separated from the experience she is having of the world. There is the integrity of its experience of the world with the language or languages she uses to express or articulate. While teaching, we impose through language, whatever is not actually present. All the artificial categories and divisions are imposed on the child through language. The child, if left alone will learn the way the world actually functions.

When experience proceeds the words, as we experience the world it is almost like language fell into place. Respecting and acknowledging the ability in children to make sense of the world was the basis in traditional non literate communities. The integrity of experience and language is worth noting and it is in this manner we make sense of the world too.

### **3 Impact of Literacy and schooling- how playfulness became play and how readymade toys got built.**

#### **3.1 'Educated' learn the word, the word forms the educated**

With the invention of printing press the printed word became the source of knowledge instead of the real world. Language, instead on emanating from authentic experience, which is contextual became imposed from outside. Experiential, verb centric language became noun centric and descriptive. The function of language changed from communication to the very source of knowledge itself.

In modern settings children are introduced to words much before they experience the world around them. Instead of children naming their experience, adults around them, give words to their experience. Children are also introduced to the written word in this manner. Slowly, the hearing and seeing action bypasses the experiencing faculty and directly gives input to mind (by reading). This process (when done continuously) rewires the cognitive process there by eliminating the physiological function required to make

sense of the world. Experience no longer informs the mind, the mind directs what to experience!

The content of today's education are words. We learn the word instead of the world. Reading places us in a structure of knowing, which is fundamentally mental and non-experiential. This act makes the reader into a mental, 'rational' being. The object of knowledge and the process of engagement alter the knower. The intangible nature and characteristic of the written word calls forth from its user, processes that are not the same when we are engaging with the real thing. We have to make up images (that are often images of images) from previous reading experiences and 'reason' is constantly working in the background to conclude.

Understanding takes place in the realm in which cognition has taken place. Linguistic inputs are 'understood' at the realm of language. Experiential inputs through senses are understood at the realm of experience. These two processes are very different in their respective paradigms.

Literacy reconfigures the biological aspects of making sense of the world into a psychological space. From seeing to thinking is a shift that has occurred without us being aware of it. This shift may seem to be simple and harmless but this is what transformed us from beings in nature to beings of nature. Some even consider this as advancement, an evolutionary step but the fact is that the biology of our being does not corroborate this. Literacy has made fundamental changes to the functioning of the eye, memory, ear and hence to the whole cognitive system- tools, processes and structure.

With the printed word becoming the primary cognitive source, the nature of the word has developed our cognitive system.

### **3.2 Development of a new paradigm and the fragmentation of body and mind**

As the linguistic inputs were forming the mind the senses were also giving inputs to the body since that is embedded into our biology. Linguistic inputs made reasoning the process of creation of knowledge and hence the mind became the knowledge producer. This created the split in our beingness as mind was learning one thing and the body was learning something else. This shift made huge repercussions in the way we be in the world. This alienated us from the biology of life, made us see nature as outside of us and set out a war between the mind and the body. This led to further fragmentation of our holistic selves, leading to the subduing of the feminine nature in us, distrusting anything that is intangible. Naturally reason subdued intuition.

Direct input from language made the mind to totally dominate the mind and movement of life got transformed into a war between body and mind, between us and nature, between the physiological, biological tendencies and psychological tendencies.

### **3.3 Two paradigms and two understandings -how to teach children and how children learn**

Modern schooling has evolved in response to the question 'how to teach children?' We have readymade knowledge; teachers 'installed' with 'knowledge' are in designated spaces called schools where 'knowledge' is imparted. Year after year children are brought here to be taught, trained, disciplined. But once we seriously ask 'how children learn' the whole structure will crumble. Teaching is conditioning, memorizing and belief making while learning is awakening, exploring and creating knowledge. In teaching, knowledge is the starting point and in learning, knowledge is the result. In order to understand how children learn we need to study children in non coercive environments. What better space than the cognitive conditions that indigenous communities provide children?

### **3.3 Mental constructs as 'knowledge'**

We, the modern literate people have created various categories to look at the world: work, play, and learning. In response to this mental construct, we have created books for learning, toys for playing and tools for working and have allotted time and created spaces for each of these activities. Naturally, we are in no psychological position and have no cognitive integrity to see the world as it is.

Introduction of literacy brought about some fundamental changes to the way we were to 'be' in the world, creating a total shift in paradigm and created a new type of human being, impacting the very human consciousness.

With the change in the cognitive source from world to the printed word, the total cognitive system changed, brain got rewired, the way eyes and ears function changed, formation of the mind was affected. The mind and body got fragmented and the role of language changed. Children were perceived to be handicapped (less than an adult) and required "help" to be in the literate adult world. 'What will you become when you grow up?' (an oft repeated question) is a reflection of this idea. That is how teaching and schooling got established.

The institutionalization of learning and academization of knowledge was made possible by turning knowledge into a codified category. So the world or the totality of experience was reduced, fragmented, compartmentalized and categorized into distinct activities and into various subjects.

Thus, instead of experiencing the real world, the printed word began to create a fragmented, categorized, compartmentalized imaginary world.

#### **4. Design education**

##### **4.1 Possibility of revisiting how we naturally learn the world**

A critical re-examination of design education could give us not only a glimpse of how we organically learn the real world but also in re-imagining the de-contextualized, fragmented, and compartmentalized modern educational paradigm. This could help us not only in reimagining spaces and conditions that enable children to 'create' knowledge but also re-imagine higher education in order to root the whole education in the realm of experience.

Design education, however, based on the modernist paradigm, will have to undergo a fundamental change in order to meet this purpose.

##### **4.2 Design education - What is wrong**

The de-contextualized nature of modern education continues in spite of being experiential. So one could say that experience is being 'used' in order to design. This disconnection from the real context does not really help in being truly experiential. The psychological disconnection is brought about by 'teaching' of certain subjects like history of design, basic design, design process being taught as a method etc. The defect of design education as is done now is that design process is taught as a rigid method and beauty is conditioned using the western aesthetic sense. So it becomes mere application of certain rules and known methods. Naturally the 'process' is lost and disconnecting one from the deeper cultural context too.

##### **4.3 Unique features of Design education**

Two core aspects of design education are design process and aesthetic sense and of course it deals with the tangibles and moves on from exploring quantity to quality- from concrete to the abstract.

Within the context of modern education this is best example of 'experiential learning'.

To be in process demands us to suspend judgments, to see the world afresh, to be ambiguous and to be in the realm of unknown. This necessitates that we steer away from the 'why' and 'how' and focus on the 'what'.

Non-conceptual seeing or seeing 'what is' would naturally awaken the sense of beauty within us and would enable us to see the world with new eyes.

I was able to get a glimpse of the true possibilities of design education by being with non-literate artisans and also observing how their children 'learn' the respective crafts etc.



Looking at it from that perspective, the organic process of making sense of the world and design education has a lot of similarities.

Unlike most other disciplines design education has many unique characteristics in terms of process, content, pedagogy and also purpose. Design education is practice based, responding to the 'present' with proper theoretical backing. This demands the designer to be constantly on their toes, learning all the time, being attentive to what is going on with total openness and flexibility. Design education and design as a profession demands creativity, sensitivity, empathy from the practitioner and this can be only achieved by a shift from the way one has been educated in the school.

Design education demands creativity from the learner and so the whole program is developed in order to meet this. This allows the learner to be playful, to explore and feel comfortable with in the realm of unknown. In the realm of unknown, one becomes open, is curious, wonders and even develops humility, at least at a point before one creates.

Since design education is about making new things, in spite of its cultural disconnection, most of the 'learning process' is rooted in experience. It also has the potential to approach designing as if one is encountering the problems for the first time. One is required to start from a clean slate every single time, only that makes the design apt. One has to go into the realm of the unknown instead of taking things for granted.

Experience by itself provides another way of learning which is somewhat holistic. Content-wise, design education covers many disciplines in a very organic and seamless manner. Design education has the aspect of observing the phenomenon and exploring materials. It looks at human beings, their practices, products they use and how they are related. Design education demands the designer to have a holistic over view- a balance between (1) art/ culture (2) science/technology (3) finance/management and (4) humanities (anthropology, history, sociology, psychology) (5) communication (language and other means like computer etc) and skills - making, drawing etc as well as intellectual abilities. Even more interesting is the pre-requisite to innovate/create on one hand and keep in mind, practicality.

Ability to observe, comprehend, articulate and communicate is very crucial for designers. Holistic is a misused term, a cliché but in case of design education, achievable. The usual way of 'achieving' holistic is by adding more and more subjects and having physical activity in the evening. True holistic quality is achieved when the physical and the mental are

working together in all aspects, especially while 'learning'. Design education has this possibility.

## **5. Conclusions**

The ambience created in a design school is very conducive for awakening creativity and being playful, the kind of situation that exists in non literate communities. Contrast this to a school, which is designed to numb creativity. The conditions that exist for children in indigenous communities could be used to fine-tune design education and also to re-imagine conducive conditions for children, both at modern homes as well as schools. Understanding how children learn and some basic aspects of Design education can be used as a means to repair and correct the damages inflicted by the modern schooling to some extent.

### **5.1 From conditioning to creating conditions**

Children are biologically equipped to create knowledge autonomously but the present conditions at home as well as schools are against this potential. Homes and schools need to be re imagined as spaces for creating knowledge instead of getting instructed, trained and taught; developing qualities needed to create knowledge instead of memorizing and analyzing readymade knowledge; developing love, care, courage, collaboration instead of fear, timidity, competition. Dealing with readymade knowledge creates learned minds instead of learning mind.

### **5.2 Who should learn from whom?**

As we, the educated have been educated out of our real ability to create knowledge our only option is to learn from children by providing the right ambience- both psychological and physical. Only the ability to see without the mental frames that we have been trapped into, would reveal the real nature of how children learn.

Only then we will understand what is playfulness and that children do not need adult made toys.

## **Acknowledgement**

Children and non literate communities have helped to not only understand the true nature of learning but also helped me to recover at least partially the natural way of knowing and being.

## References

The paper is written from experience of the author and the references have been used only to support the main theses.

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