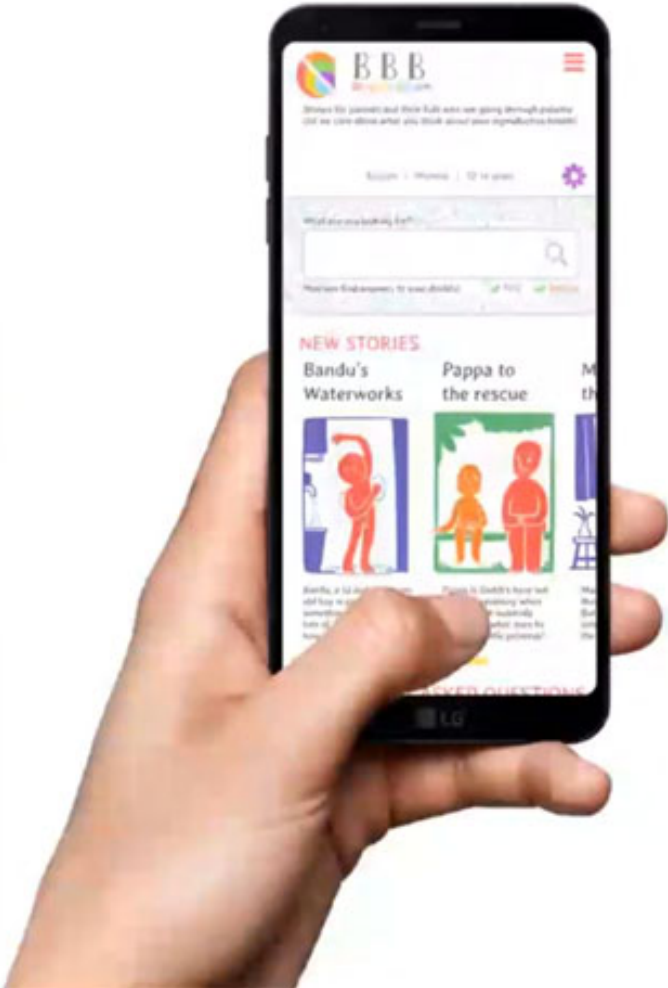


# बच्चे बने बड़े

## Mobile Application for Sexual Reproductive Health and Hygiene

Mayura Datar  
186330006

Supervised by  
Prof. Girish Dalvi



## बच्चे बने बड़े

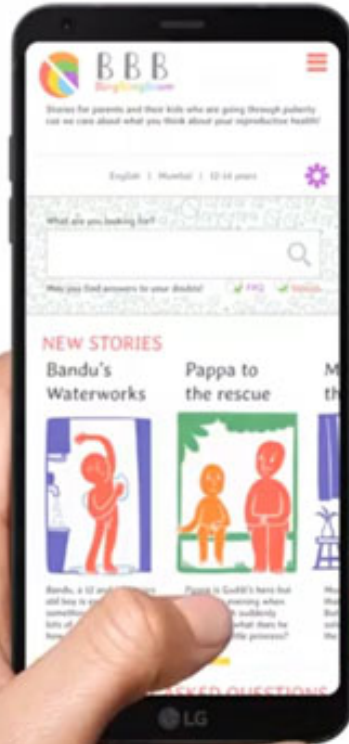
### Mobile Application for Sexual Reproductive Health and Hygiene

**Story app for parents and children  
going through Puberty**

**Content Partner: Akanksha  
Foundation**



**Content Redesign project**

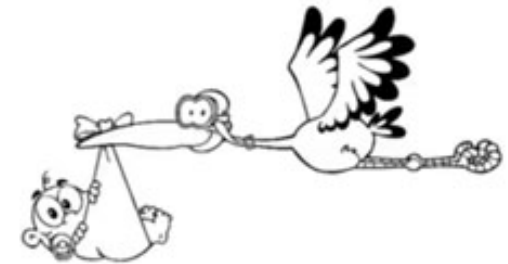


# Background

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# ***Sexual Reproductive Health***

*Crucial yet neglected | Myths and Misconceptions*



# Sexual Reproductive Health

## Crucial yet neglected | Myths and Misconceptions

*“ Sex education session is one of the most effective interventions but it suffers from poor implementation. The main reasons are weak content, weak delivery (skill-set of teachers) and culture or environment of the classroom ”*

Chandra-Mouli, Venkatraman, et al. "What Does Not Work in Adolescent Sexual and Reproductive Health: A Review of Evidence on Interventions Commonly Accepted as Best Practices." *Global Health: Science and Practice* 3.3 (2015): 333-340.  
<https://doi.org/10.9745/GHSP-D-15-00126>



Image credit: Amazon Wallmonkeys



Card game designed in P2, Evaluated in DRS  
Link attached in Annexures of the P3 Report

## Sexual Reproductive Health

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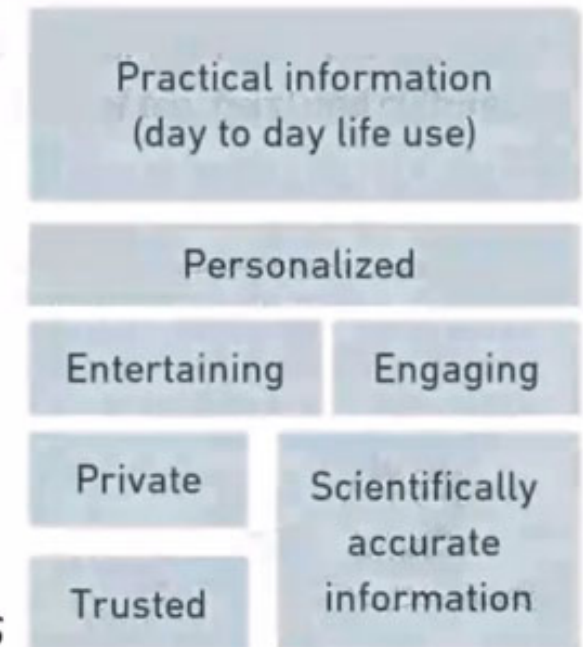
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## Sexual Reproductive Health

Crucial yet neglected | Myths and Misconceptions



Insights from P2 and DRS



# Research

Primary | Literature Review | Secondary

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*Ethical clearance was taken from IEC for primary research*



# Research

Primary | Literature Review | Secondary



Semi-structured interviews with Doctors, Counsellors, Social Workers

Prayas Health Group | Samvadini | Stree Shakti Prabodhan | CARC

IIT Hospital Doctor | Rajasi Kulkarni | Pushkar Ingale

*“How is sex education encountered?”*

*“Intervention needs to happen at an early age...”*

Akanksha foundation

*“Weekly empowerment sessions from class 5 till class 9”*

Scenario

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Primary | Literature Review | Secondary

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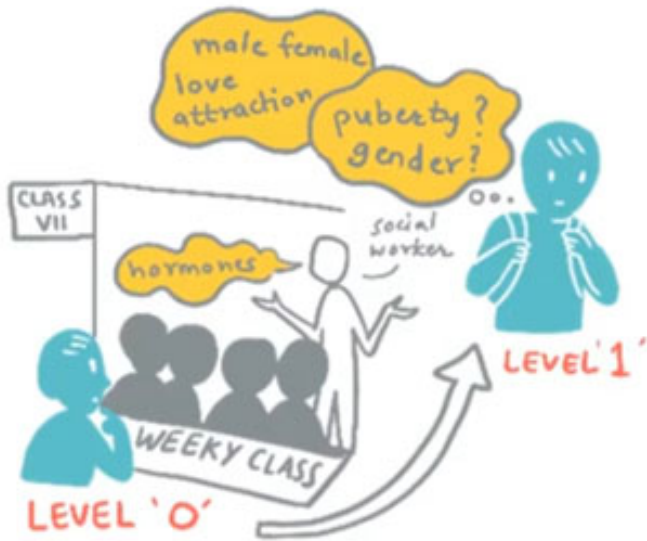
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# Research

Primary | Literature Review | Secondary



# Research

Primary | Literature Review | Secondary



# Research

Primary | Literature Review | Secondary



# Research

Primary | Literature Review | Secondary



# Research

Primary | Literature Review | Secondary



*Insights from Primary Research*

**Including parents in this formal sex education**

**Changing the approach towards sex education**

**Parents' mobile phone being used by their children**

*Digital Interventions??*

# Research

Primary | Literature Review | Secondary

---



## Research

Primary | Literature Review | Secondary



Digital Interventions  
Link attached in Annexures of the P3 Report

- Easily - Constantly - Privately Accessible
- Scalable - Affordable
- Mobile phones and Internet



Digital Interventions  
Link attached in Annexures of the P3 Report

## Research

Primary | Literature Review | Secondary

- Easily - Constantly - Privately Accessible
- Scalable - Affordable
- Mobile phones and Internet

Flaws identified

**“...apps did not cater to gender and sexuality content... not very popular as they are information-heavy...”**

**“lacked emotional appeal”**

**“Underutilized...”**

**“Not functional”**

Kathryn E Muessig et al. Mobile Phone Applications for the Care and Prevention of HIV and Other Sexually Transmitted Diseases: A Review, *J Med Internet Res.* 2013 Jan; 15(1): e1. doi: 10.2196/jmir.2301, PMID: PMC3636069

Rodríguez Vargas, B., Sánchez-Rubio Ferrández, J., Garrido Fuentes, J. et al. *J Med Syst* (2019) 43: 175. <https://doi.org/10.1007/s10916-019-1323-4>

# Research

Primary | Literature Review | Secondary

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# Research

Primary | Literature Review | Secondary

Page Number 12-17 in the Report

Sex Chat with Pappu & Papa | YFilms Webseries on Sex Education ▶ PLAY ALL



Sex Chat with Pappu & Papa | Official Trailer | YFilms...

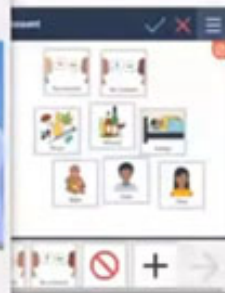


Sex Chat with Pappu & Papa | Episode 01 | Masturbation | YFilms...

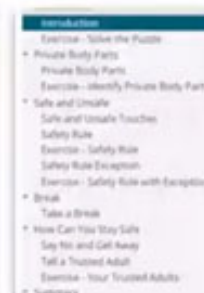


Sex Chat with Pappu & Papa | Episode 02 | Pregnancy | YFilms...

*Pappu and Papa  
Lacks surrounding  
ecosystem*



*SECCA app (australia)  
Lacks Indian context*



*Arpan's e-Learning module about  
child sexual abuse awareness  
Parents in a passive role*

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Primary | Literature Review | Secondary

Page Number 12-17 in the Report



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Lacks Indian context*

- Introduction
- Exercise - Solve the Puzzle
- Private Body Parts
- Private Body Parts
- Exercise - Identify Private Body Parts
- Safe and Unsafe
- Safe and Unsafe Touches
- Safety Rule
- Exercise - Safety Rule
- Safety Rule Exception
- Exercise - Safety Rule with Exception
- Break
- Take a Break
- How Can You Stay Safe
- Say No and Get Away
- Tell a Trusted Adult
- Exercise - Your Trusted Adults
- Summary

## Introduction



*Arpan's e-Learning module about  
child sexual abuse awareness  
Parents in a passive role*



## Design Space

Based on Primary, Secondary Research and Literature Review



**“How might we facilitate parents to communicate with their children about reproductive health & hygiene?”**

*Target Audience: Class 7 children from Akanksha school + their Parents*

*Medium: Mobile phones*

*Ecosystem: Empowerment Sessions*

*Approach: Less Educational, More Entertaining*

# Ideation



# Ideation

Page Number 23-26 in the Report



**Gamified App**  
Reinforce Hygienic practices

Flaws identified  
**Infantilizing**  
**Unsuitable for all the content**



Image Credits: Talking Tom, Tiny Dentist



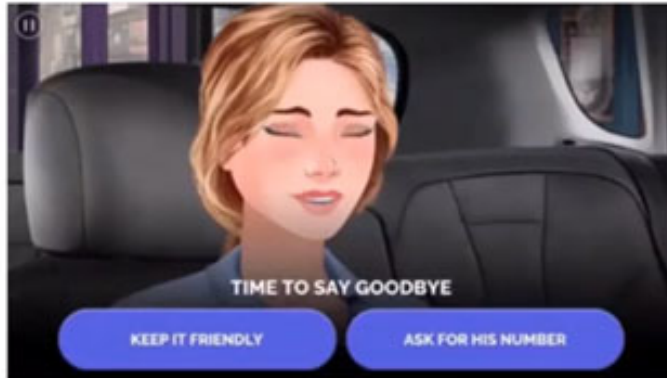
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Page Number 23-26 in the Report

Interactive Stories  
Imaginary stories  
Illusionistic plots  
Decision making

Desired attributes  
Personalized stories  
Influences real life  
Great storytelling and artwork  
Entertaining

Image Credits: Journeys: Interactive series



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Page Number 23-26 in the Report

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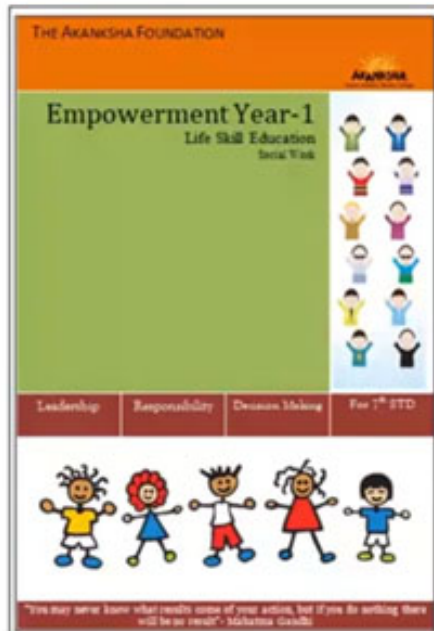
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# Content Conversion

# Content Conversion

Derivation | Decision | Depiction




### What changes happen to boys?



- Grow taller and heavier
- Bones grow bigger and heavier
- Nose and jaw get bigger and face gets longer
- Get more muscles
- Hair and skin can become oily and you may get pimples
- Body sweats more
- Hair grows on the face, under the armpits, around the genitals (pubic hair)

### How does the semen come out?



- If semen is going to come out, the penis is likely to be erect
- A penis gets erect when blood rushes into it
- Muscles push the semen into the urethra and out the penis
- This is called an ejaculation

## Empowerment Manual Class 7

- Puberty
- Love-friendship
- Eve teasing
- Human rights

The topic: Puberty was selected



**Content for Stories**

**Adam's apple**

Larynx or voice box getting larger and sticking out at the front of your throat. You can see how fast you are growing on the outside but you can't see that inside your body is growing too. As a boy reaches puberty the larynx (voice box) grows, which causes the pitch of the voice to change. The pitch gets lower and the voice sounds less like a child. Sometimes the sound seems to 'break' part way through speaking so that you may sound a bit like you're yodelling! Don't worry - when your larynx has finished growing your voice will sound 'normal' again and probably a bit deeper than before. Some men are able to sing in the high voice they had as a child as well as their deeper adult voice. This is called singing 'falsetto'. The voice sort of 'changes gear' to get into the high range.

**Erection and Ejaculation**

Hormones from the pituitary make the testicles grow and they start making more testosterone and producing sperm. After puberty you make 200,000-400,000 sperm cells a day for the rest of your life. Sperm build up in tubes around the testicles. They travel long some tubes and mix with fluids from glands. If semen is going to come out, penis is likely to be erect. A penis gets erect when blood rushes into it. Muscles push the semen into the urethra and out the penis. This is called ejaculation.

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Boys get erections for all kinds reasons- they might happen if you're thinking about something 'sexy' when you wake up in the morning and have to pee/ when you are relaxed/ anxious/ frightened/ for no reason at all

**Changes in Boys**

Gain weight  
Shoulders get wider  
Muscles start to get bigger and stronger  
Penis gets longer and wider  
Testes (or testicles) get larger.  
Apart from hair starting to grow on your body, it also grows on your face, like a beard, moustache or sideburns. Usually it's pretty thin at first but gets stronger and darker towards the end of puberty.

**Male sex organs**

Male sex organs: Urethra, Penis, Testicles, testes, scrotum (page 29-31)

**Penis size**

Testicles grow first so your penis may look as if it is shrinking. It isn't. It can take a while for your penis to grow. Penises like noses, ears, and hands, come in all sizes and shapes and colours. They vary how they curve and stick out when erect. Penises, when erect, are more alike in size than when they are not. They all work.

**Female sex organs**

Fallopian tubes, ovary, uterus, cervix, vagina, endometrium

**Female body**

Girls are born with hundreds of thousands of tiny eggs called ova. One of them is called ovum. These egg cells are only half formed. At puberty hormones tell the ovaries it is time to start releasing ova. Usually one egg at a time matures (develops) and is released from an ovary.

**Menstruation guidelines**

Girls use pads or tampons to catch the blood that comes from the vagina. Pads are sticky strip of material that absorbs the blood. They are placed in the underwear. It should be changed frequently. A tampon is a small plug of material that fits inside the vagina to absorb the blood. This should be changed frequently. Pads and tampons need to be disposed off by wrapping them in paper and in the appropriate dustbins. Cloth pads is also an option that need to be washed after use and can be used again till about 2-3 months. The cloths need to be washed properly and dried in the sunlight in order to make them hygienic and safe for reuse. Menstrual cups are also being used during periods. They are shaped like a bell with a stem made of medical grade silicon. The stem is used for insertion and removal. The bell-shaped cup seals against the vaginal wall just below the cervix. Every 4-12 hours (depending on the amount of flow), the cup is removed, emptied, rinsed, and reinserted. After each period, the cup requires cleaning. Unlike tampons and pads, cups collect menstrual fluid rather than absorbing it. One cup may be reusable for up to 10 years. Menstrual cups are also promoted as more practical and eco-friendly than pads and tampons as the disposed pads and tampons are not always biodegradable and thus cause environmental pollution.

**Frequently asked questions**

**How is a baby created?**

Egg + Sperm = Baby

**What is Puberty?**

Puberty is when boys start to make sperm cells and girls start to make eggs.

Another word for Puberty is Adolescence. The exact meaning for puberty is the period during which adolescents reach sexual maturity and become capable of reproduction. But it basically means growing up, maturing and developing. Puberty refers to the process of physical changes by which a child's body becomes an adult body capable of reproduction. Puberty is the period of human development during which physical growth and sexual maturation occurs. Most changes happen between 8-17.

**How does the body change during Puberty?**

Hormones are chemical messengers that travel in the blood stream from the place where they are made (called glands) to the place where they do their work. Each hormone has a specific job. The Pituitary gland, deep inside the brain, gets things started. It sends out hormones to our sex organs to get them to start making sex hormones. Sex organs are called as reproductive organs and genitals.

**What are sex hormones?**

It is the sex hormones that make the changes that cause children's bodies grow into adult bodies. Both boys and girls make the same sex hormones. The main ones are testosterone and estrogen. Boys make a lot of testosterone but so much estrogen. Girls make a lot of estrogen but so much testosterone.

**Why do I look different than others?**

How one looks like after s/he grows up depends mostly on heredity, the genes that one gets when an egg cell and sperm cell from birth parents come together to make the cells that develop into the grown body.

**Why am I so much bigger than, or smaller than, other kids in my class?**

Not everyone grows at the same time or the same rate. Some people have their growth spurt really early and others really late. Kids who are really tall in year 7 are mostly about the same as everyone else in year 10. If you are really concerned, ask mum and dad when they did their growth spurt. (It's those genes again!) When the changes begin makes no difference to how you develop, no age is better than any.

**How should I take care of my growing body?**

Daily checklist for a changing body: shower daily, use deodorant or anti-perspirant on the underarms, wash face daily to help prevent acne, brush teeth twice per day, use shampoo on your hair to prevent oiliness, eat a well-balanced diet, get plenty of exercise.

**How will I know when it is time for my first period?**

First ask mum when she had her first period as this will give you a good idea. (Your genes have a lot to do with how and when your body grows and develops.) As a rough guide, you usually start your periods 12-18 months after your breasts start to develop.

**When does Puberty stop?**

It usually takes a few years for all the changes to take place. A person's body is fully adult a couple of years after reaching their adult height. (Adult height is usually reached by the age of 17 for girls and 19 for boys.)

**How much blood is lost in a period?**

The bleeding can last from 3-8 days and about a few tablespoons of blood is lost. The periods are often unpredictable at first but later it will arrive between every 23-25 days. The bleeding itself doesn't hurt but cramping that can help to remove the blood from the uterus can be uncomfortable. People cannot know whether a girl has her period unless she tells them.

**Stories**

**FAQ**

# Content Conversion

Derivation | Decision | Depiction

## Erection and Ejaculation

Hormones from the pituitary make the testicles grow and they start making more testosterone and producing sperm. After puberty you make 200,000-400,000 sperm cells a day for the rest of your life. Sperm build up in tubes around the testicles. They travel long some tubes and mix with fluids from glands. If semen is going to come out, penis is likely to be erect. A penis gets erect when blood rushes into it. Muscles push the semen into the urethra and out the penis. This is called ejaculation.

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Derivation Part 2 | Selecting the topic for converting into a story

Tushar Bhaiya



Rakesh Bhaiya



## Selected content

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### Insights from field

Masturbation is surrounded with a lot of myths (leads to weakness, bad for health, or even contrasting views like it has to be done). Younger boys (from age 10 as well) are curious to know about it and if correct information is not provided they seek it from their peers, older brothers which fuels more myths. Basic questions like whether masturbation is good or bad, how is it done, why should it be done, how it can hamper focus on studies, influences of pornographic content, etc. are the main concerns/doubts that are raised by the children. Sometimes boys get addicted to masturbation and need consultation to get back to normal life. At such times, the relationship between the social worker and the child is extremely important.

Boys (rural) have developed a widespread culture of watching pornographic content in a group on a mobile phone at secluded places like a deserted fort or garden.

# Content Conversion

Derivation | Decision | Depiction



Tushar Bhaiya



Rakesh Bhaiya



**Selected content**

**Structuring the content for the story**

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Seeking Information | Habits | Judgement

Derivation | Decisions

Information | Field notes | Contextual situations

**Decision 1**

Does he accidentally or purposely touch his penis?

**Decision 2**

Who does he confide in? Does he tell his best friend?

**Decision 4**

How many times should Bandu masturbate?

**Decision 5**

Is it important to keep Penis clean? Why?

**Decision 3**

Bandu feels scared and decides to ask his doubts to the social worker from school

**Decisions**  
*Dilemmas encountered*

Tushar Bhaiya



Rakesh Bhaiya



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**Structuring the content for the story**

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Seeking Information | Habits | Judgement

Derivation | Decisions | Depiction

Information | Field notes | Contextual situations

**Scenario**

**Escalation**

**Conclusion**

**START**

Bandu is getting ready for school. He has a Maths test today. During the bath...

Change in  
Bandu goes in the river. During the

**Decision 1**

Does he accidentally or purposely touch his penis?

Bandu washes his Penis while taking a bath and gets an erection

Bandu does not touch his Penis, gets ready and while waiting for bus, gets an erection

**Decision 2**

Who does he confide in? Does he tell his best friend?

**Second viewing**

Do you know why this is happening to Bandu?

No, continue with the story

Yes, I've seen this story

**Decision 4**

How many times should Bandu masturbate?

**Decision 5**

Is it important to keep Penis clean? Why?

**Decision 3**

Bandu feels scared and decides to ask his doubts to the social worker from school

**Scenario**  
Character in a conflict

Nature of conflict  
Relatable incident  
Day to Day life story  
Addressing common Qs

**Depiction**  
3 Act Structure

Tushar Bhaiya



Rakesh Bhaiya



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**Structuring the content for the story**

Seeking Information | Habits | Judgement

Derivation | Decisions | Depiction

Information | Field notes | Contextual situations



Escalation  
Decision making point

Characteristics  
Conflict Aggravated  
Branching Structure  
Co-creation of value

Depiction  
3 Act Structure



Tushar Bhaiya



Rakesh Bhaiya



**Selected content**

**Erection and Ejaculation**

Hormones from the pituitary make the testicles grow and they start making more testosterone and producing sperm. After puberty you make 200,000-400,000 sperm cells a day for the rest of your life. Sperm build up in tubes around the testicles. They travel long some tubs and mix with fluids from glands. If semen is going to come out, penis is likely to be erect. A penis gets erect when blood rushes into it. Muscles push the semen into the urethra and out the penis. This is called ejaculation.

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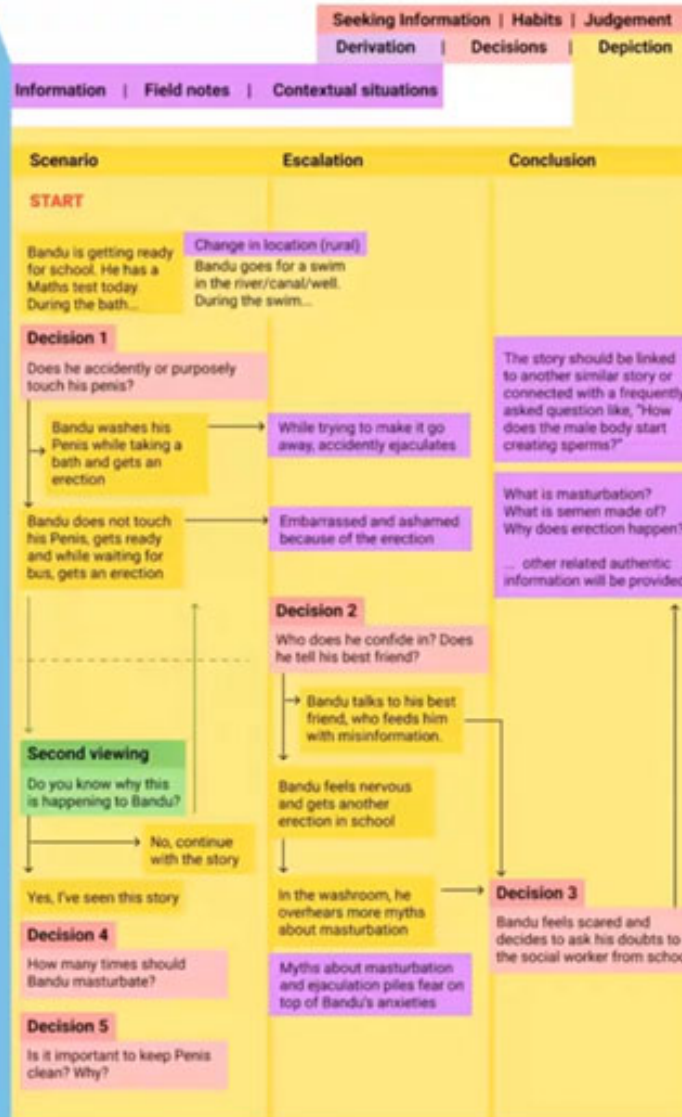
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Boys (rural) have developed a widespread culture of watching pornographic content in a group on a mobile phone at secluded places like a deserted fort or garden.

**Structuring the content for the story**



**Conclusion**  
**Myth Busting**  
**Hygienic Practices**

**Characteristics**  
**Trusted sources of info**  
**Encourage positive attitude**

**Depiction**  
**3 Act Structure**

Tushar Bhaiya



Rakesh Bhaiya



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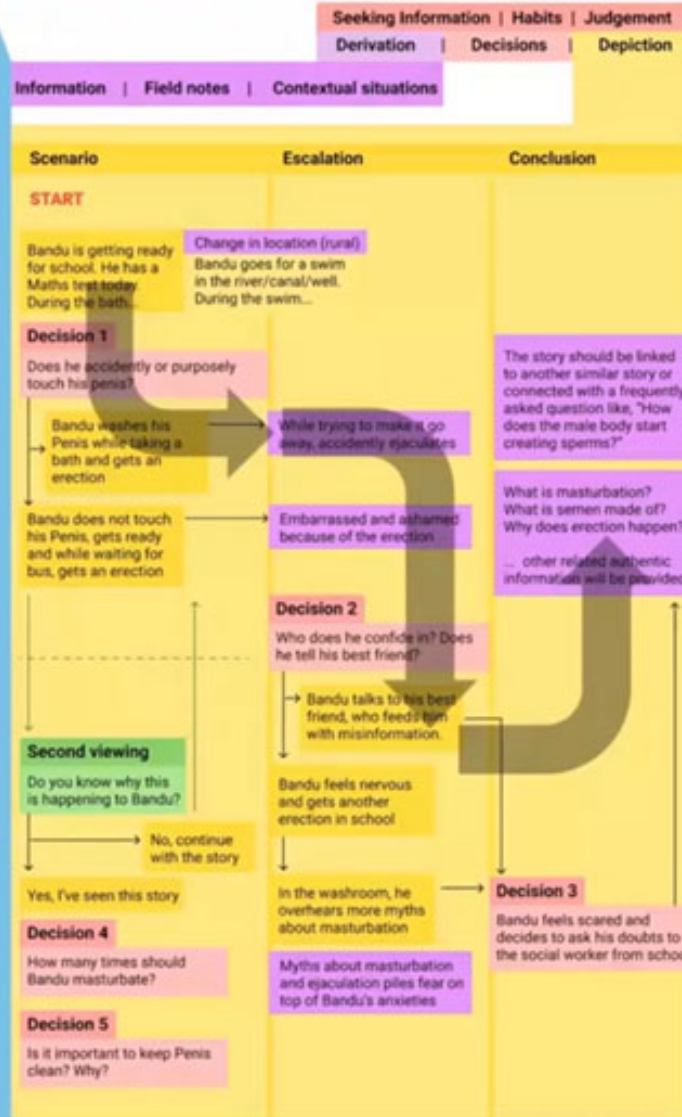
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**Structuring the content for the story**



**Why Branching?**  
Co-creation leads to more value

Possibility of repeat viewing

Depiction  
3 Act Structure



Tushar Bhaiya



Rakesh Bhaiya



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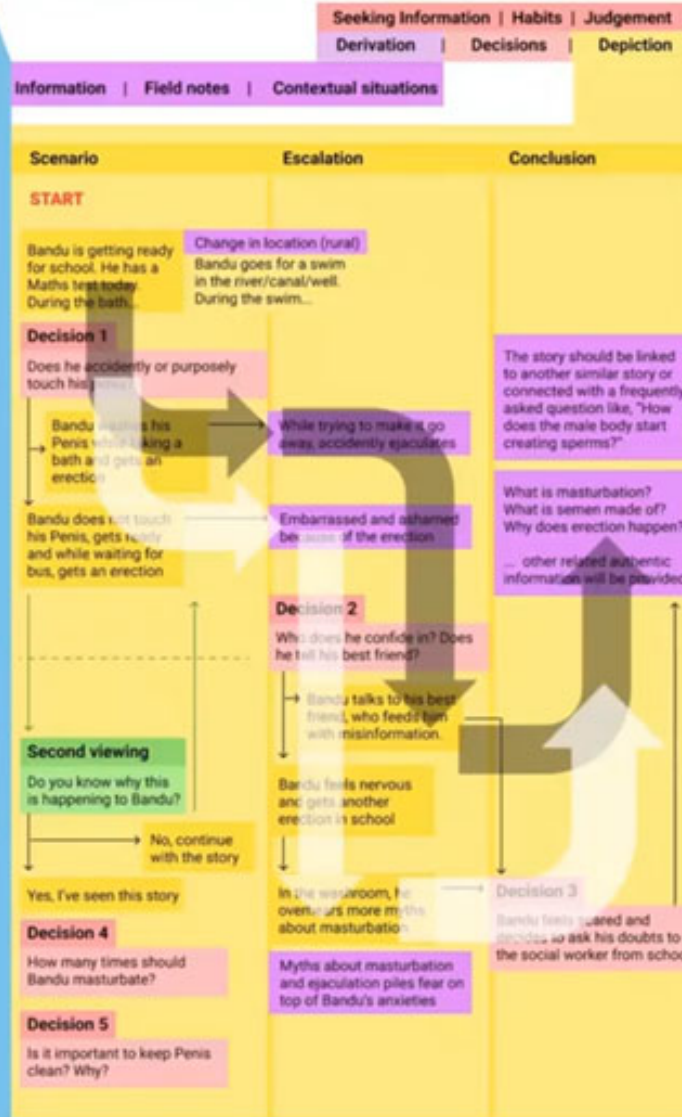
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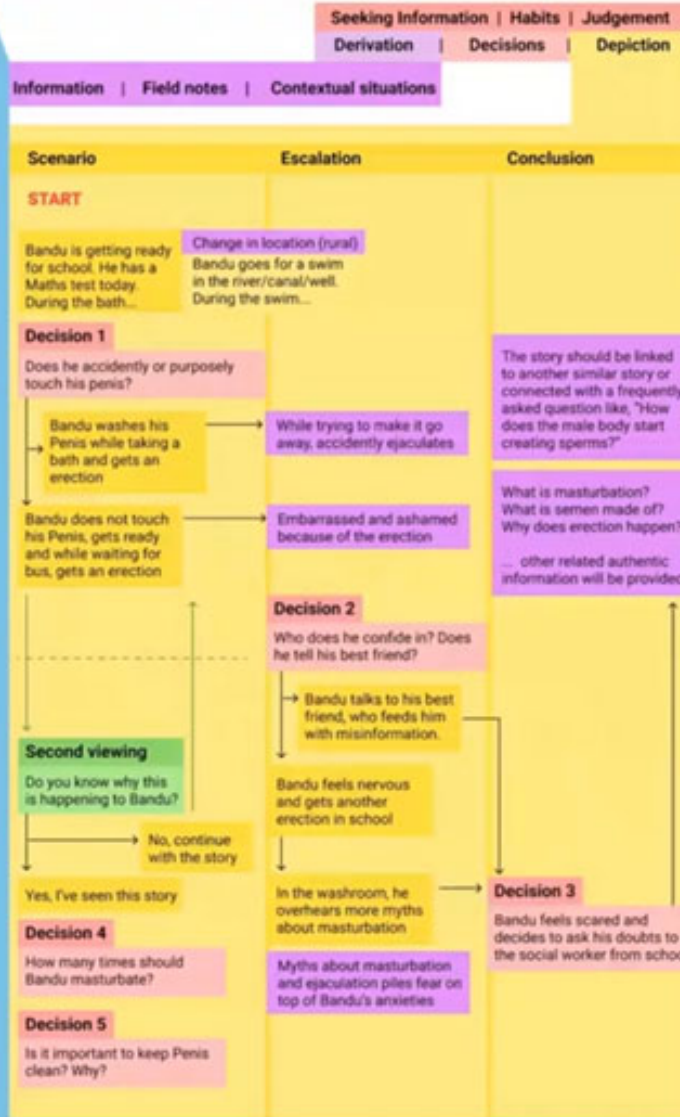
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**Structuring the content for the story**



More Myths...

Finishing  
Script writing  
Dialogues

Challenges  
Limited Characters  
Child-friendly language

Depiction  
3 Act Structure



Tushar Bhaiya



Rakesh Bhaiya



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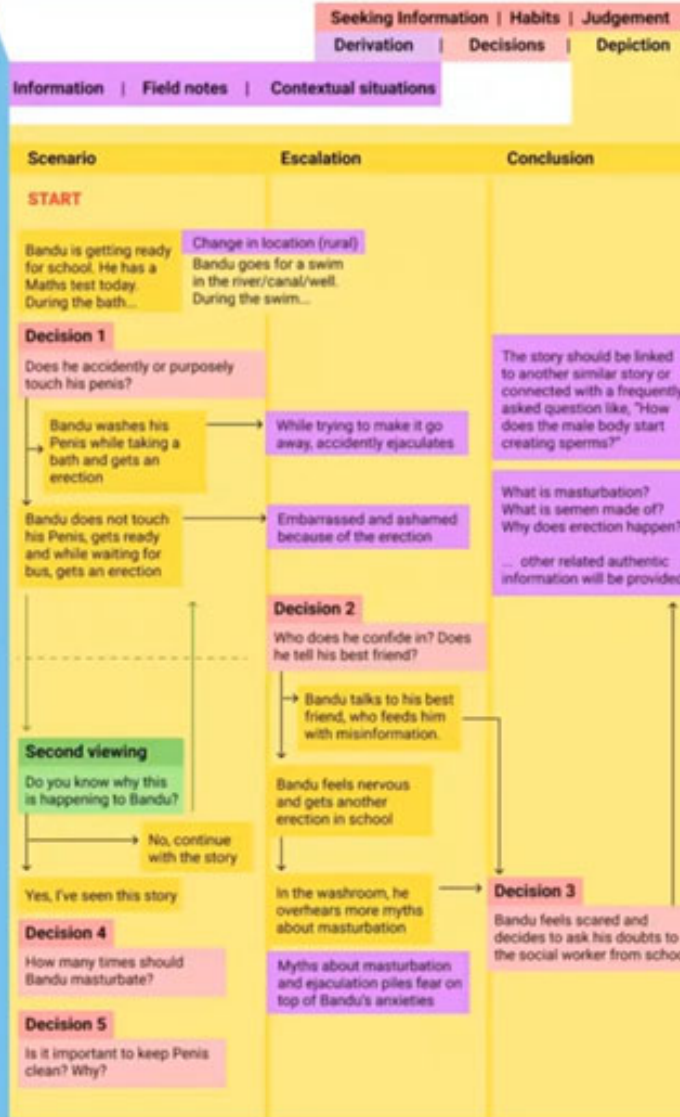
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**Structuring the content for the story**



Doctor in School?

Finishing  
Script writing  
Dialogues

Challenges  
Limited Characters  
Child-friendly language

Depiction  
3 Act Structure



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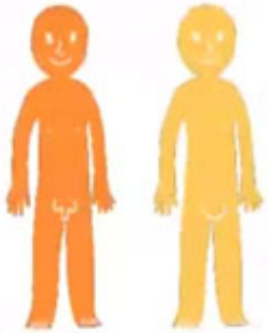
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# Visual Representation

Explorations and Brainstorming articulated in the report on Page Number 48-52

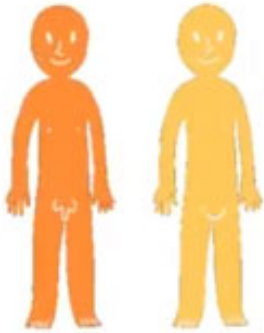
Character Design

Gender neutral characters

Abstract --- Realism



Final illustrations and gifs used in the prototype



## Visual Representation

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### Character Design

Gender neutral characters

Abstract --- Realism

### Identity Design

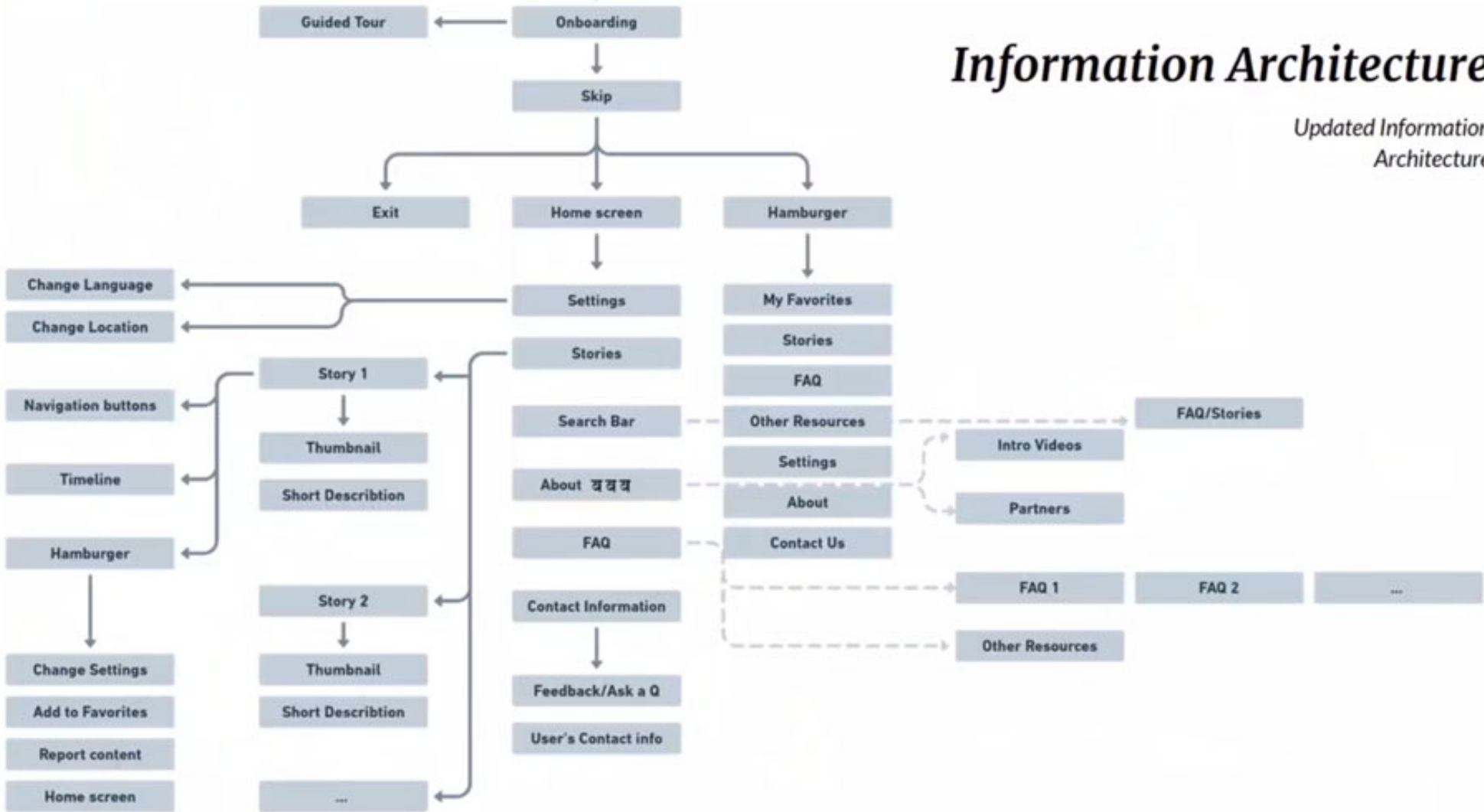
Rainbow colours for Gender Spectrum

ब form growing up

Final illustrations and gifs used in the prototype

# Information Architecture

Updated Information Architecture



# Layout

Page Number 32-35 in the Report

## *Iterative explorations*

*Layout | Concepts | Storylines*

*Taking in account...*

*User feedback*

*Expert comments*

*Left to Right: Screenshots from Prototype versions 1 to 4*





# Layout

Page Number 32-35 in the Report

*Iterative explorations*

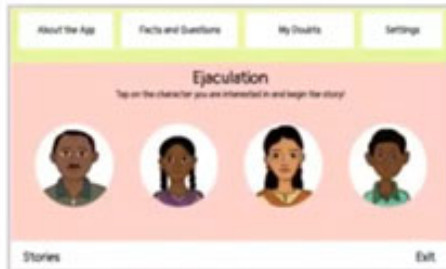
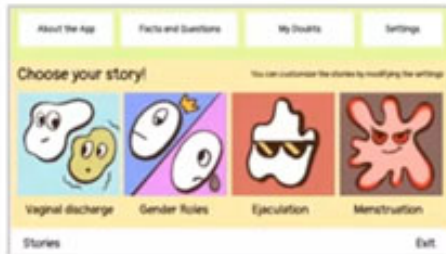
Layout | Concepts | Storylines

Taking in account...

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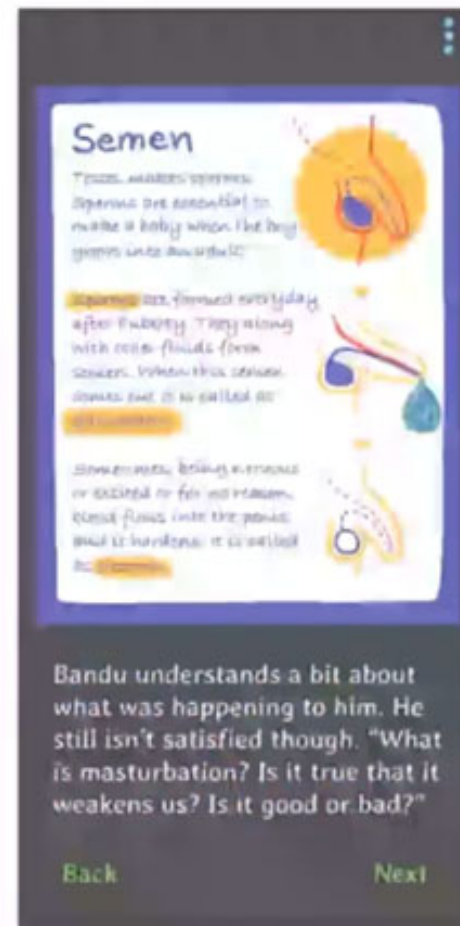
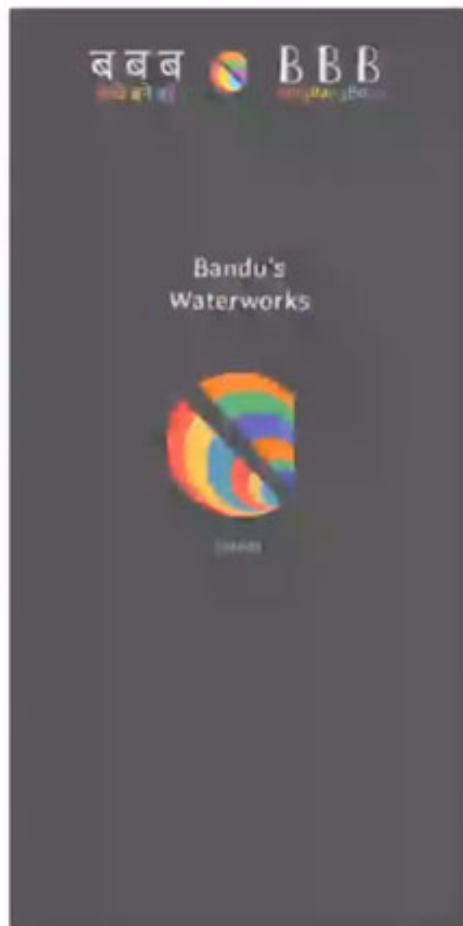
# Layout

Page Number 32-35 in the Report

Iterative explorations  
Layout | Concepts | Storylines

Taking in account...  
User feedback  
Expert comments

Left to Right: Screenshots from Prototype versions 1 to 4



## Layout

Page Number 32-35 in the Report

# *Positioning*

# Positioning

Scenario



# Positioning

Scenario



# Positioning

Scenario





# Positioning

Scenario



# Positioning

Scenario







LEVEL '0'

LEVEL '2'

LEVEL '3'

END OF SESSION

ब ब ब कहानियों का ऑप देखो



# *Demonstration*



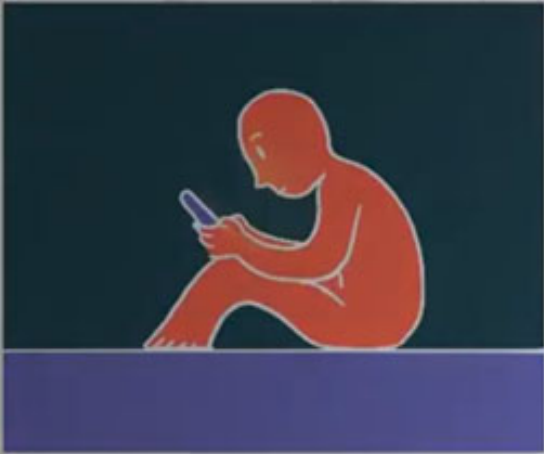
What makes you  
a good parent?

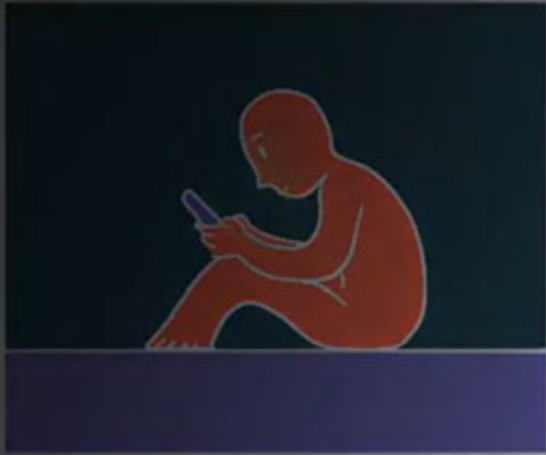
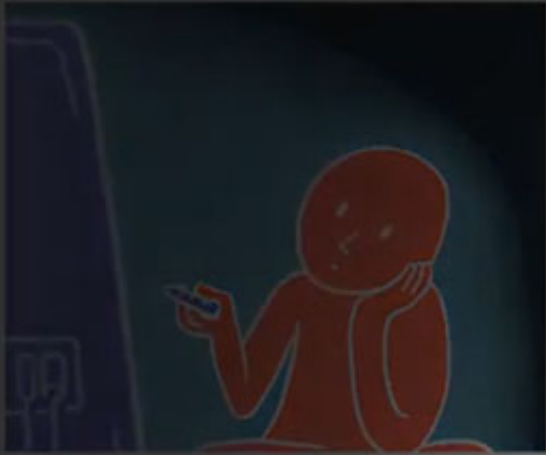




I answer all  
the questions  
my child has!



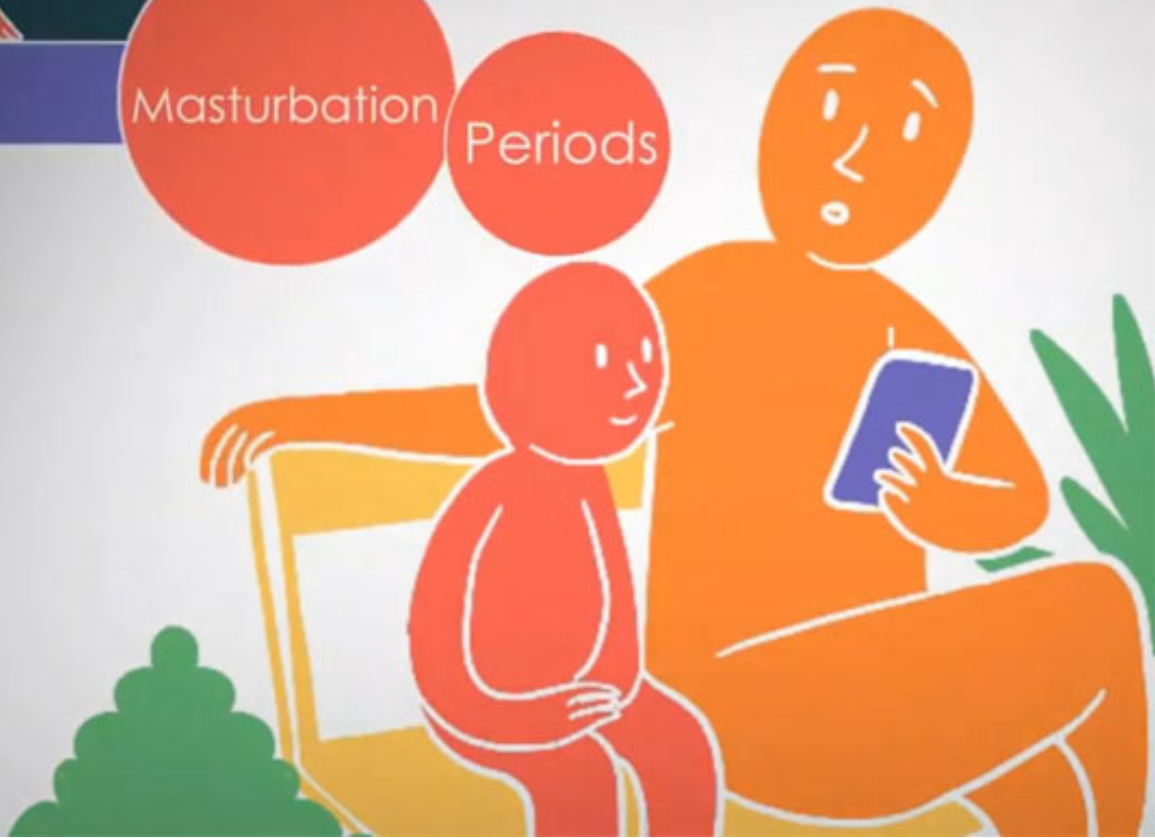




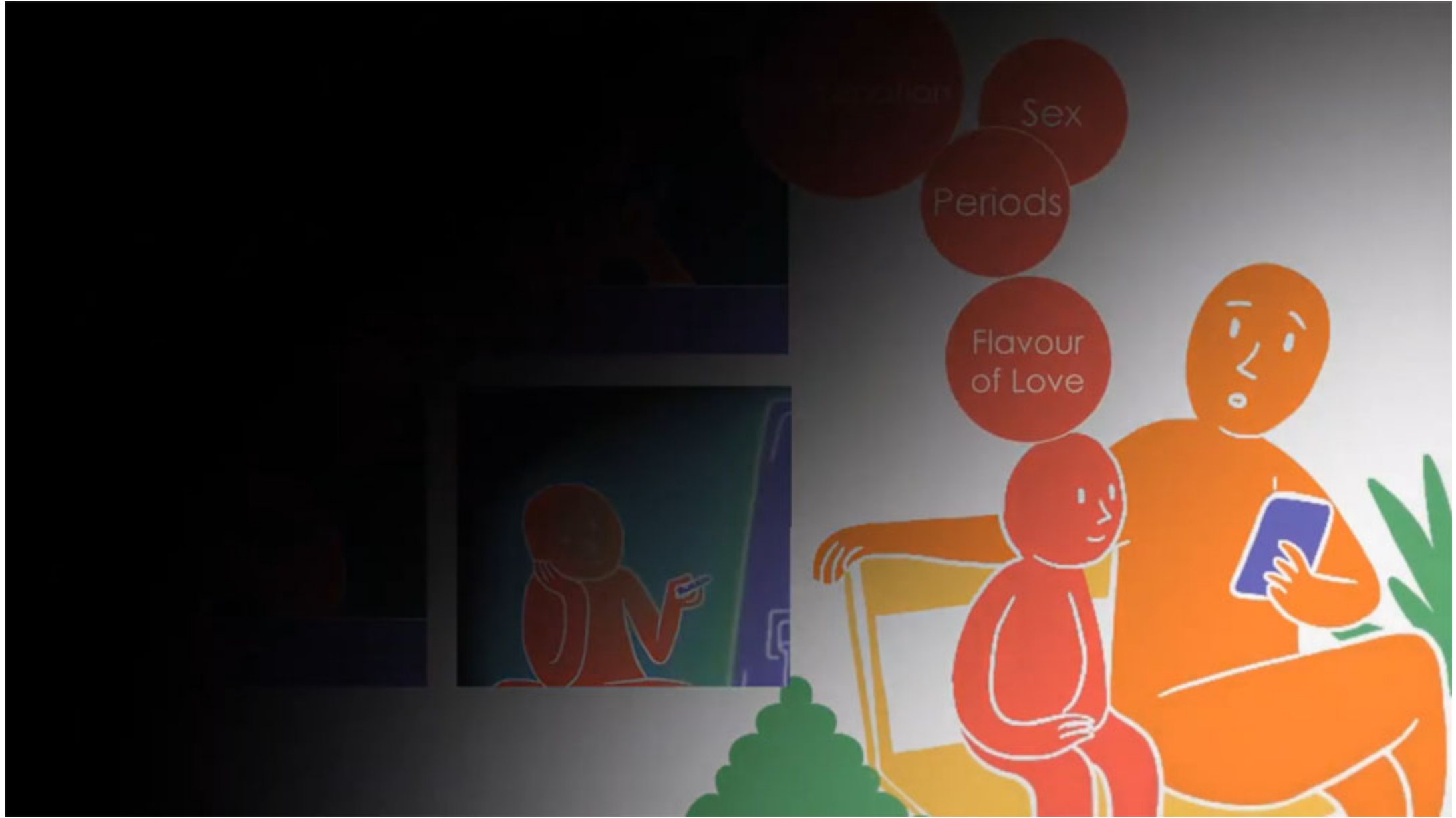
Sex

Masturbation

Periods

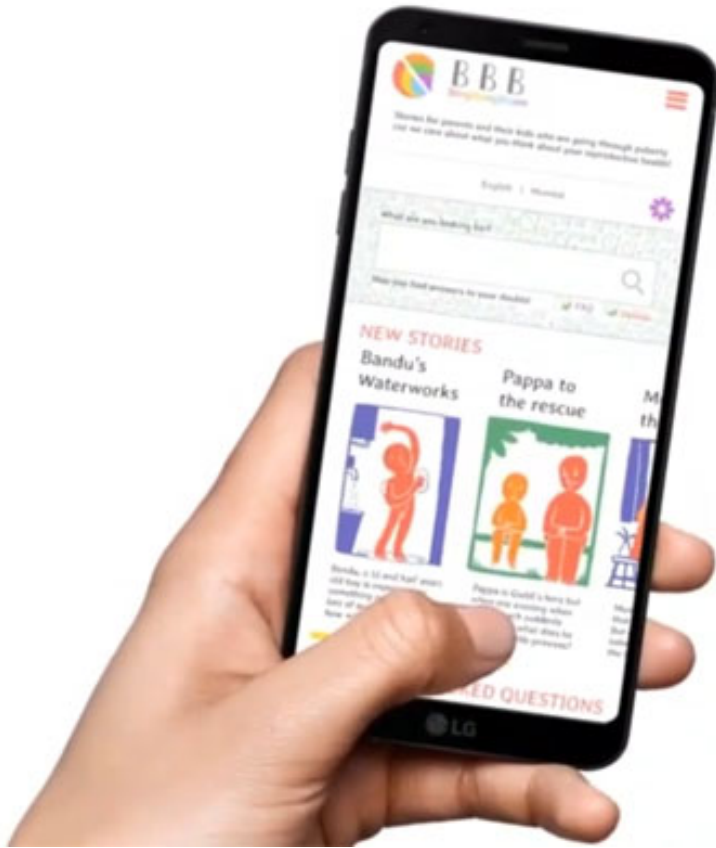






Are you able to  
answer all their  
Questions?





## Mobile Application for Sexual Reproductive Health and Hygiene

Answer your children's questions  
by telling them stories that matter...



Answers to most of the questions your kid might have while growing up!







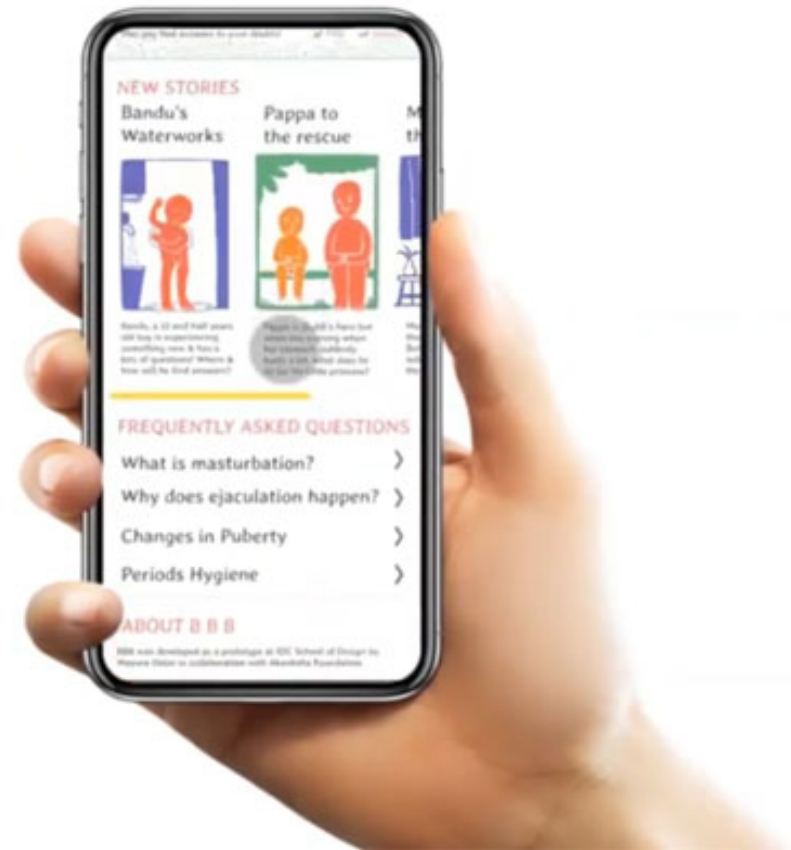
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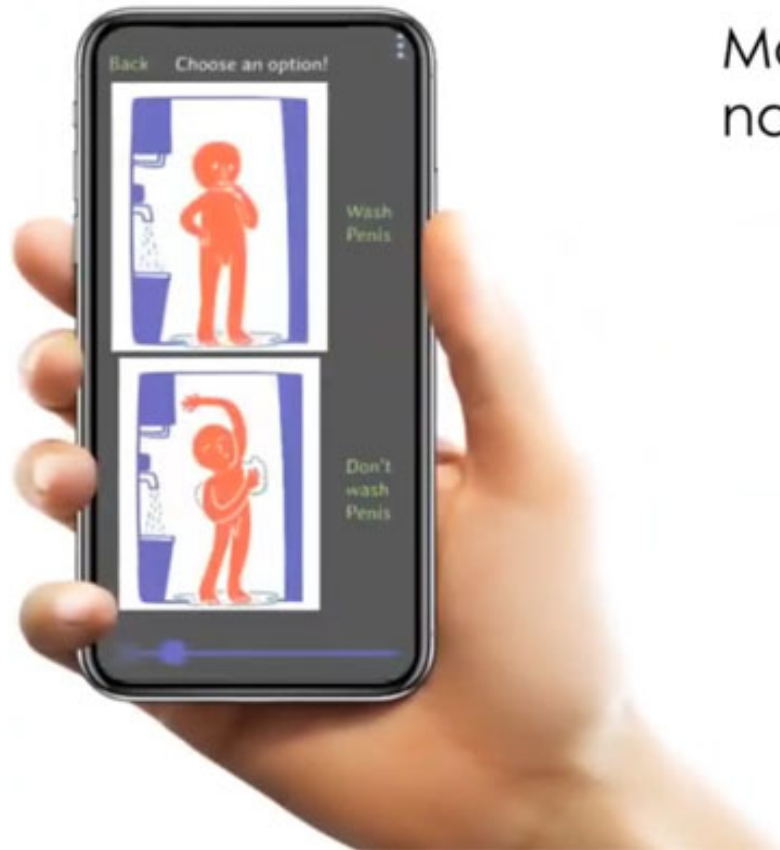
In the form of Stories...



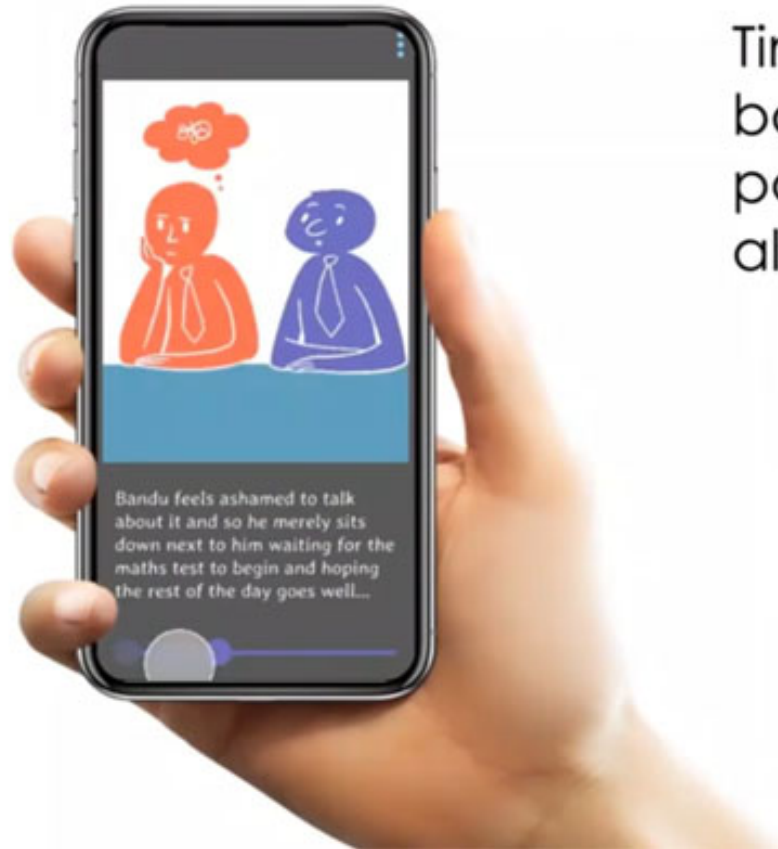


In the form of Stories...  
Like Bandu's Waterworks

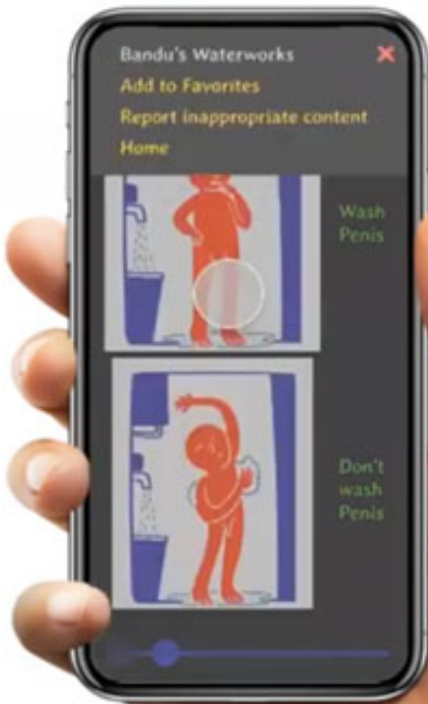




Make decisions while navigating through the story

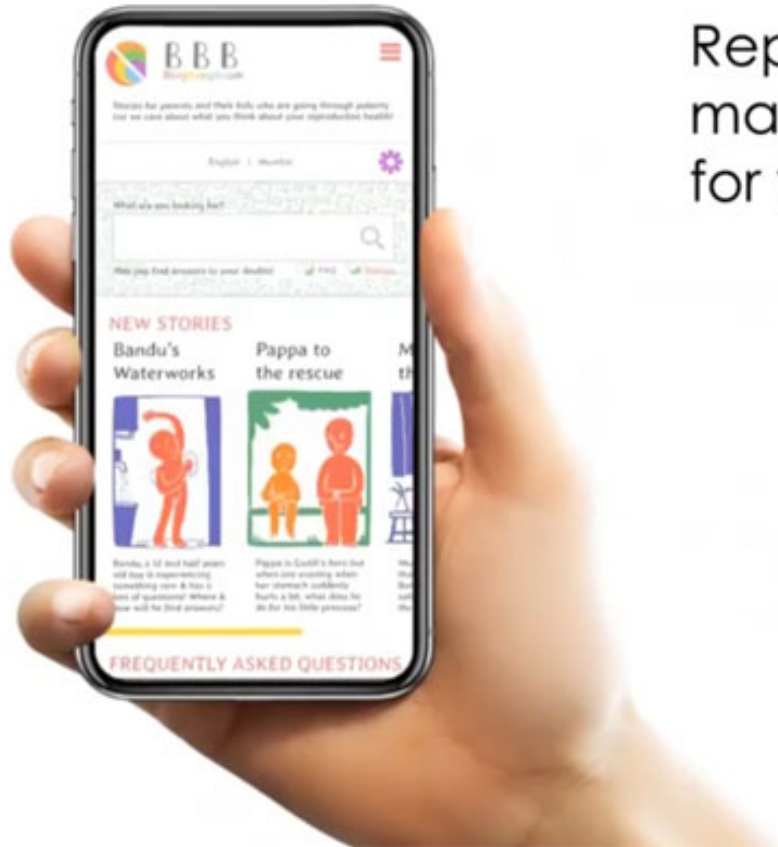


Timeline that can take you back to decision making points to see the alternate story!



Report content that  
may seem inappropriate  
for your child

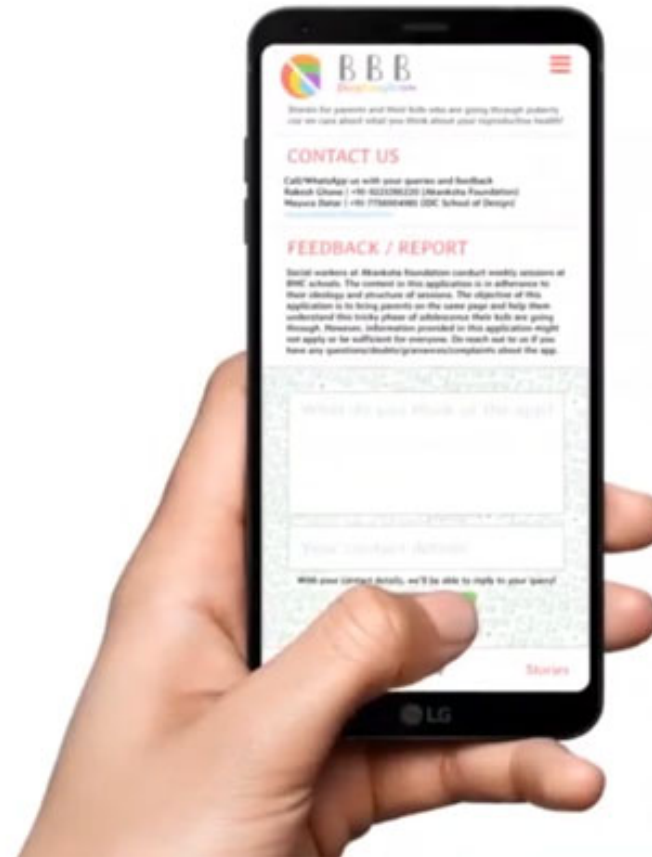




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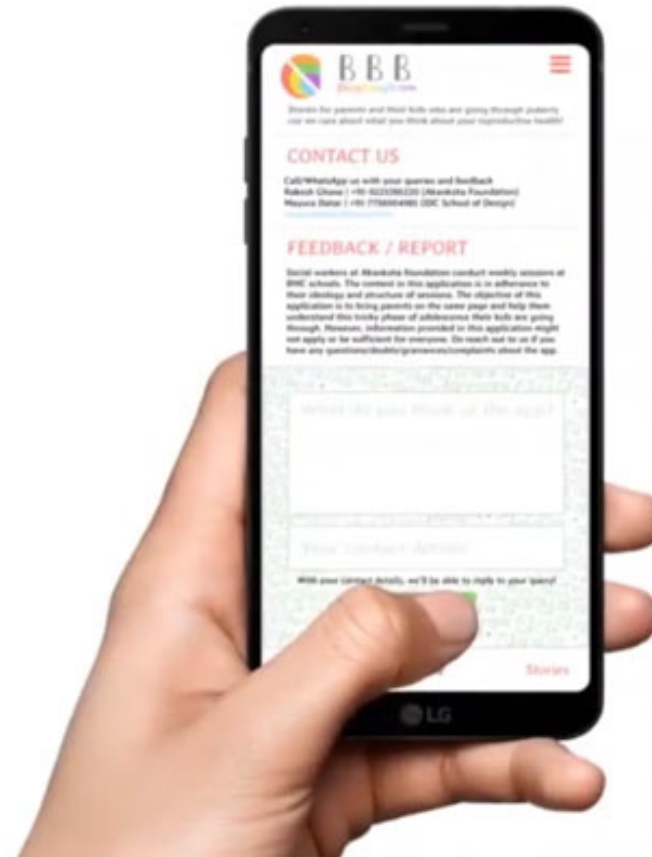


Stay connected with  
Akanksha Didi and Bhaiya





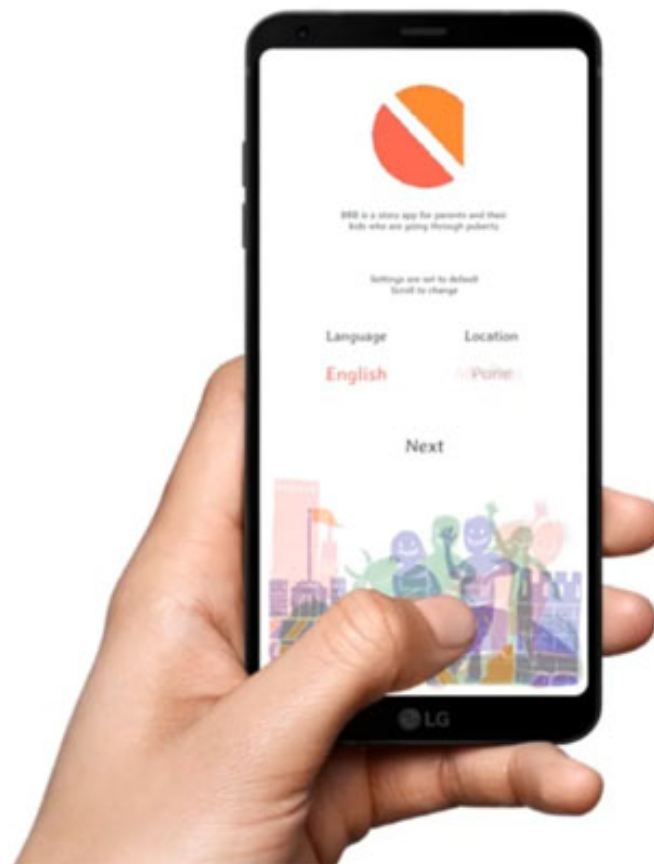
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## Other Features

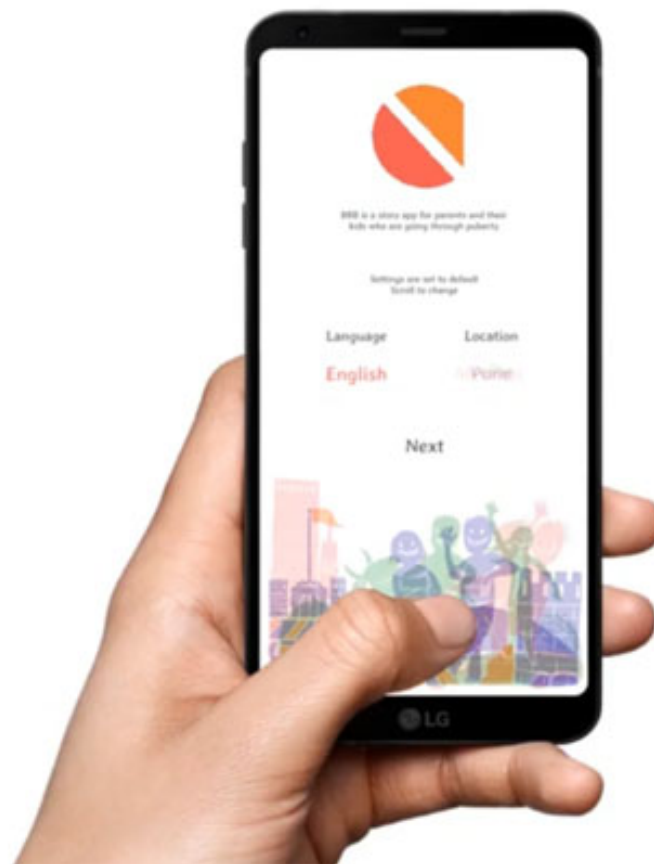
Customize stories  
based on your location





## Other Features

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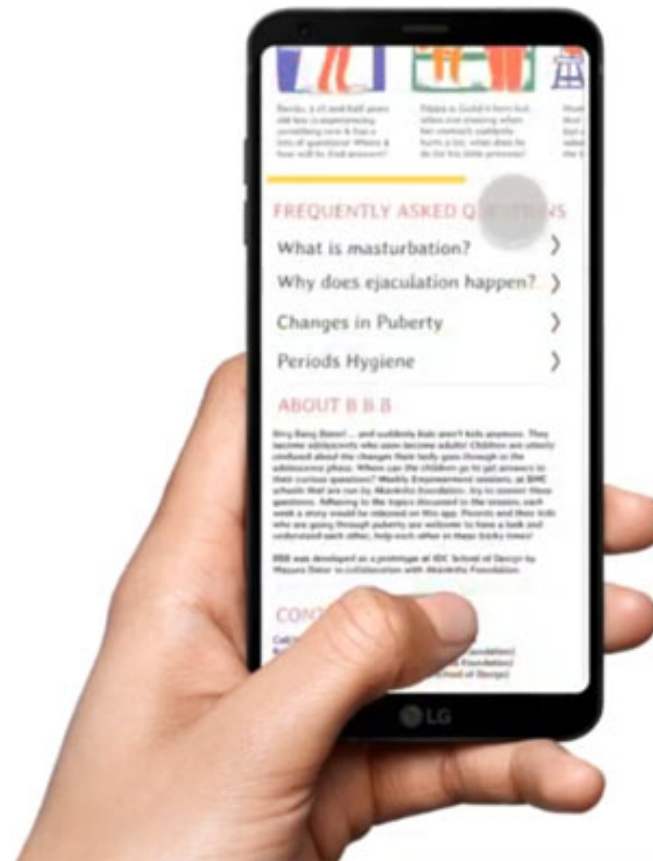


## Other Features

Customize stories  
based on your location

Search your doubts

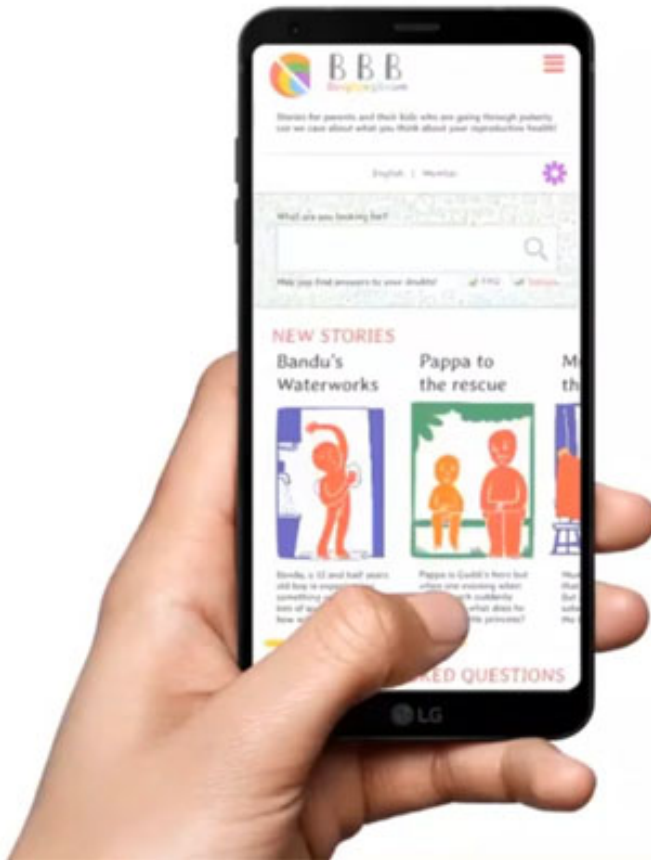
Frequently asked  
questions





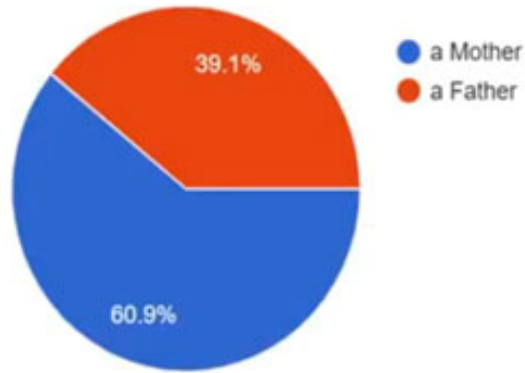
Making those  
awkward talks easier!

Happy Parenting!



# Evaluation

# *Evaluation*



## Evaluation

Page Number 58-62 in the Report

- 3 Akanksha Parents, 5 Experts
- Virtual Testing with 40+ parents using Convenient Sampling
- 52 anonymous responses, 24 children of 12-16

Hello!

The recent lockdown has, once again, made us realise that parenting is a tough job! And it's the toughest when your kids are coming off age and becoming different 'individuals'.

To ease your way in dealing with this awkward age, we bring to you 'ब ब ब: ब ब ब ब ब ब'. ब ब ब is a mobile application prototype with coming-of-age stories of 'Guddi' and 'Bandu'. These stories are meant for teenage kids and their parents to understand this transformation better.

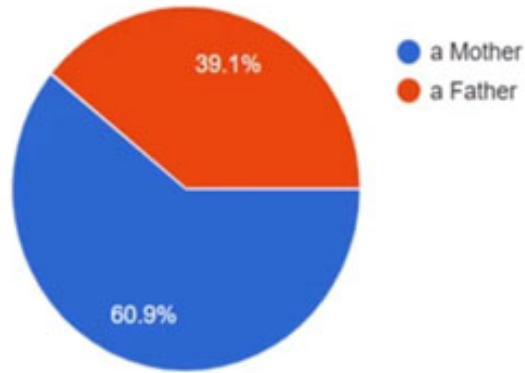
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Please note that this is just a proprietary and not a full-fledged application. But with your valuable feedback, it may turn into a real mobile app! Do tell us what you think about it by filling out <https://forms.gle/yBrFaXpeZ6KvyHCe9>

Do forward this message to other such parents... Thank you!

9:08 PM

Top: Data generated by Google analytics, Bottom: Message sent to the Parents over WhatsApp



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Parameters for Evaluation:

- Engagement in the stories
- Appropriateness for children
- Visual representation
- Relatability of the stories
- Authenticity of information
- Approach towards sex education

Top: Data generated by Google analytics, Bottom: Message sent to the Parents over WhatsApp





# Evaluation

## Experts' feedback

### Positive reviews

*"... such learning instruments can be a substitute in the absence of trained personnel."*

*"... has a potential to maximize the impact or at least retain the generated impact"*

### Critical comments

*"Terminologies like sex hormones... can create confusion."*

*"...fathers are also much aware & open to communicate frankly about this topic with their daughter."*

## Limitations

### Scope wise

- *Akanksha's perspective*
- *Contextualized for Akanksha*
- *Focus on just 1 topic 'Puberty'*

### Utility

- *Language*
- *Limited branching options*
- *Not a substitute for health provider services*

## Limitations & Future Scope

### Scope wise

- *Akanksha's perspective*
- *Contextualized for Akanksha*
- *Focus on just 1 topic 'Puberty'*

### Utility

- *Language*
- *Limited branching options*
- *Not a substitute for health provider services*

### Widening the Scope

- *Guideline for Exceptional scenarios*
- *Psychological and social changes in Puberty*
- *More NGO partnerships, more contextual stories*

### Universal App

- *Indian languages*
- *All age groups, all locations*

