



Toys in a Box: Improving student engagement through play

PROGRAM TO IMPROVE PRIVATE EARLY EDUCATION (PIPE)



Glossary of terms (1/2)

- Affordable Private Schools (APSs): Schools that charge fees up to INR 28,500 per annum, and typically provide education up to grade 10
- Early Childhood Education (ECE): The formal education a child receives between the ages two through five. Typically early childhood is considered to range from birth to age six, this narrower definition has been chosen to reflect the research's interest in the years when formal pre-primary education is typically provided in India
- English-medium education: Education where the language of instruction is English
- Markers: Indicators or signs that parents use to assess whether their child is learning
 - Markers to test recall: Questions used by parents to assess their children for content memorized using rote methods (e.g., asking the child to recite numbers)
 - Markers to test concepts: Questions used by parents to assess their children's conceptual understanding of any topic (e.g., asking the child to count items)
- Preschooling/ Pre-primary classes: All formal educational classes prior to first grade
- Program to Improve Private Early Education (PIPE): Program that aims to replace rote with activity based learning in all 300,000 APSs in India
- Activity based learning (ABL): Learning through structured play-based activities, games, and experiences that provide developmental benefits across the cognitive, physical, and socio-emotional domains
- ABL solution provider: Private companies providing ABL solutions including curriculum materials, teacher training and continuous support for proper implementation of the program
- Partner: Private companies that have partnered with PIPE and provide high-quality ABL solutions to APSs
- Partner solutions: Play/ activity based programs including curriculum materials and continuous support for proper implementation of the program, provided by PIPE partners

Glossary of terms (2/2)

- PIPE teachers: Teachers teaching in APSs served by PIPE partners
- STARS: Scoring Tool for Assessing Readiness at School to assess the impact of ABL in APSs
- PIPE APSs: APSs using PIPE partner solutions
- Control APSs: APSs using no external interventions
- Full curriculum PIPE APSs: PIPE APSs using full school curriculum
- Single subject PIPE APSs: PIPE APSs using single subject curriculum
- 1 year PIPE APSs: APSs with partner solutions for 1 year
- 2 year PIPE APSs: APSs with partner solutions for 2 years
- 3 year PIPE APSs: APSs with partner solutions for 3 year
- 4 year PIPE APSs: APSs with partner solutions for 4 years

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Objectives of Toys in a Box

- Develop low cost toy kits for Nursery, Junior KG and Senior KG grades in order to
 - Support and improve student engagement at home
 - Improve parent's understanding of activity based learning (ABL)
 - Improve brand recall for solution providers among parents

There are six benefits to getting children and parents to use appropriate toys at home



Supports learning and development at home



Gets children to engage, interact and make sense of the world



Stimulates children mentally



Fosters curiosity, imagination, problem solving, dexterity and socio-emotional development



Helps APS parents engage with children meaningfully



Builds brand for partners (if they choose to disseminate) and school

Boundary conditions for selecting toys for the kits

- Are toys and not activities
- Are not a replacement for school
- Are developmentally appropriate (potentially leading to impact) to increase child's engagement at home
- Can impact multiple domains
- Are low total cost to cater to the APS segment
- Are easy to use and store
- Balance the kits in terms of impact (tackles learning outcomes) and use engagement (used multiple times by the kids)
- Require only visual instructions, if any (i.e., in the form of images)
- Require minimal to no support from parents¹

Two types of Home toy kits can help improve key skills among children

Type of kit



Fully loaded @ Rs.4001 sold to parents through APS

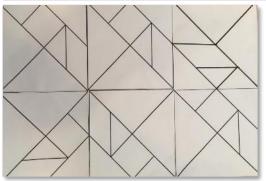


- Tangram kit
- Blocks
- Playdoh
- Snakes and ladders
- Colouring book
- Crayons
- Activity sheets
- Story book

Intended Impact

- Vocabulary
- Pre-literacy skills
- Cognitive development
- Socio-emotional
- Hand eye coordination
- Problem solving
- Counting
- Number identification
- Spatial understanding

- Addition
- Executive function
- Creativity
- Sequencing
- Predicting
- Imagination
- Conversation
- Fine motor skills
- Shapes
- Self esteem



Light version @ Rs.40¹ offered for free or at cost

- Tangram kit
- Visual instructions

- Fine motor skills
- Hand eye coordination
- Cognitive development
- Problem solving
- Spatial understanding
- Shape and colour
- Self esteem

^{1.} This is the total price if the toys are purchased at retails prices

Solution providers can reap the benefits of high brand recall among parents

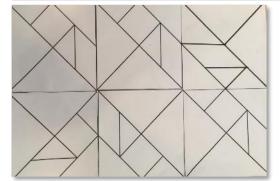
Type of kit



Fully loaded @ Rs.400¹ sold to parents through APS

Business case for ABL solution provider

- New revenue stream for solution providers and school administrators
- **Increased brand recall**, potentially leading to higher renewals
- Low go to market cost



Light version @ Rs.40¹ offered for free or at cost

- Improved collections by offering a free kit per child
- Increased brand recall, potentially leading to higher renewals
- New revenue stream for school administrators

1. This is the total price if the toys are purchased at retails prices

Illustration: Components of a fully loaded kit sold to parents through/ by APS @ INR 4001



Impact

- Fine motor skills
- Hand eye coordination
- Cognitive development
- Problem solving
- Spatial understanding



Impact

- Fine motor skills
- Executive function
- Hand eye coordination
- Colour identification



Impact

- Fine motor skills
- Hand eye coordination
- Socio-emotional skills
- Planning & implementation



Impact

- Counting
- Number identification
- Counting on
- Addition
- Socio-emotional skills



Impact

- Fine motor skills
- Concentration
- Creativity
- Vocabulary



Impact

- Fine motor skills
- Hand eye coordination
- Pre-literacy skills
- Sequencing & Predicting



Impact

- Fine motor skills
- Writing practice
- Cognitive development



This is the total price if the toys are purchased at retails prices

Illustration: Components of a light version kit offered for free or sold @ INR 40¹

Sample Tangram **Picture of A4 sheet**

These are approximate retail prices and can vary
 Note – All above images were photographed by FSG staff

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Overview of FSG Inclusive Markets (IM)

Mission

To improve opportunities, agency, and choice for families with low-income by working with companies to serve families as customers (and not with non-profits to serve them as beneficiaries)

Vision

To demonstrate profitability of offering inclusive products, services, or practices (e.g., housing, education, employment) that benefit families with low-income

Approach

- Run multiyear programs to address barriers that prevent companies from offering inclusive products, services or practices
- Talk to thousands of families to understand their needs, aspirations, and challenges
- Talk to hundreds of CXOs and managers to understand their business, ecosystem, regulatory and operational challenges
- Co-create, pilot and rollout solutions with companies to address barriers and profitably scale inclusive products, services, or practices
- Publish and disseminate public goods (e.g., primary research, best practices, business model) to get more companies to offer the product, service or practice
- Address ecosystem barriers (e.g., policy suggestions) to make the market more conducive

Overview of PIPE



Replacing rote¹ with activity based learning² in affordable private schools³ could improve learning outcomes for ~50% of children

~50% of children in India are enrolled in affordable private schools

- 40% of children in rural India are in private schools⁴
- 86% of families with lowincomes in urban India send their children to affordable private schools (APSs)⁵
- 54% of children in South Asia are enrolled in private schools for pre-primary education⁶

Current learning outcomes are poor due to rote teaching

- 35% of Grade 10 students can read at Grade 4 level⁷
- 84% of Grade 1 students can't read at grade level⁸
- Most private preschools follow mainly rote teaching with no age appropriate activities9

Adopting activity based learning in early years can provide the right educational foundation

- Poor learning outcomes in the early years leads to poor learning and life outcomes later¹⁰
- Children learn best using activity based learning (ABL) in the early years (ages 3-8)11
- Intervening in the early years gives the highest return on investments¹²

- See example of rote teaching here
- Learning through structured play-based activities, games, and experiences
- Schools that typically charge fees under INR 1,500 (USD 23) per month, and offer classes from nursery to grade 10 or 12
- 4. ASER 'Early Years' Report (2019)
- 5. PIPE research based on 4400 interviews with families with low-incomes (2015)
- 6. UNICEF 'A world ready to learn' (2019)
- 7. Education Initiatives research based on an assessment of 50,000 students in Gujarat, Maharashtra and Rajasthan (2013-14)
- 8. ASER 'Early Years' Report (2019)
- 9. CECED, ASER, and UNICEF 'The India Early Childhood Education Impact Study (2017); PIPE research
- 10. S Lockhart, Play: An Important Tool for Cognitive Development (2010)
- 11. M. Hohmann, D.P. Weikart, 'Educating Young Children: Active Learning Practices for Preschool and Child Care Programs' (1999)
- 12. J Heckman and D. Masterov, The Productivity Argument for Investing in Young Children (2004)

Barriers to adoption of ABL are lack of demand and low willingness to serve APS market

APS administrators, teachers and parents are not demanding ABL

- Limited awareness of poor learning outcomes in children
- Limited awareness on the benefits of ABL
- Current rote memorization. technique meets parents' demands

Solution providers¹ don't see a business opportunity to sell in the **APS** market

- Unclear business model to acquire and sell to APSs
- Fragmented market
- Unclear proposition for APS customers
- Lack of quality standards/ robust tools to assess quality

PIPE's vision is to replace rote with ABL in all 300,000 APSs in India







Mission

ABL solution providers **sell profitably and at scale** to APSs in India

ABL solution providers make learning effective and enjoyable for children

ABL solution providers communicate the benefits of ABL to stakeholders¹

Goal by 2025

Scale supply: 3 ABL solution providers serving >500 APSs each

better learning outcomes across all skills²

Shape demand: Pervasive demand leads to 15% of APSs adopting ABL in one tier-1 city

Raise awareness: Share approach, best practices, tools, and aspirations of families with 100 organizations annually



- 1. Stakeholders are APS administrators, teachers and parents
- 2. Skills include numeracy, early language skills, executive function, motor skills and socio-emotional skills

A

Goal

3 ABL

each

solution

providers

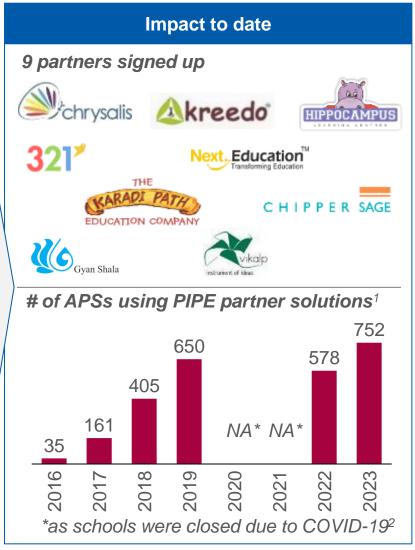
>500 APSs

Scale supply: PIPE partners are providing ABL to >150,000 children across 750+ APSs



Activities

- Identified, convinced and signed-up 8
 partners to the serve the APS market
- Developed a profitable business model for the APS market
- Identified barriers and developed 23
 best practices across 4 business
 functions (i.e. product, sales,
 implementation and management) to
 support partners to profitably scale in the
 APS market
- Supported PIPE partners to co-develop an effective organization structure and team to scale (e.g., building a strong 2nd line of management)
- Supported PIPE partners to embed managing by objectives through a set of annual and monthly dashboards and metrics which determine business health



1 –Based on data collected from partners I 2-Schools were physically shut due to COVID-19, and only remote learning products were offered by the partners to APSs during academic years 2020-21 and 2021-22 The PIPE team has been unable to verify children's extent of engagement with these remote learning products due to school closures and COVID travel restrictions

Improve quality: Children in PIPE APSs responding correctly to numeracy and literacy questions increased by 33%



Activities

• **Developed public goods** based on research with 4400 parents, 28 APS administrators, 40 teachers, 167 ABL solution providers to:

Goal

50% better

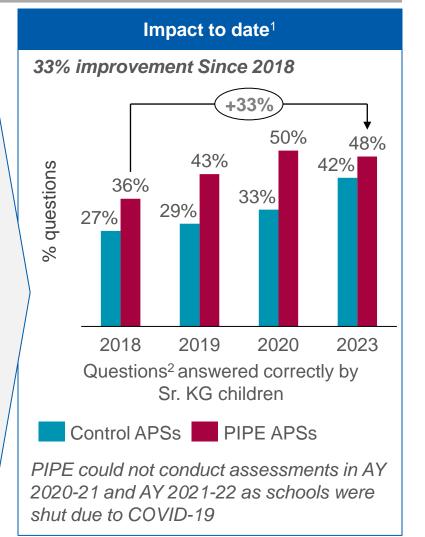
learning

skill

outcomes

across each

- Understand the reasons for poor learning outcomes
- Leverage motivations of stakeholders to improve quality
- Supported partners in adapting their product for the APSs market and in improving teacher training
- Developed 'STARS', a tool to assess education quality (including learning outcomes) in APS
- Annually assessed and published learning outcomes in PIPE APSs
- Supporting partners to develop remote learning strategies to ensure learning continues during the pandemic



1-Using the STARS tool. Sample sizes: 2018 (190 children in 38 PIPE APSs and 100 children in 20 control APSs), 2019 (636 children in 106 PIPE APSs and 168 children in 28 control APSs), 2020 (492 children in 116 PIPE APSs and 210 children in 35 control APSs), 2023 (378 children in 63 PIPE APSs and 204 children in 34 control APSs) I 2- Represent 4 questions that were assessed from 2018-2023 – a. Can you read the word 'PIN'? b. Can you identify the largest © FSG | 19

number from a group of numbers? c. Can you count and give 12 sticks out of 20? d. Can you name any 6 animals?.

Shape demand: Created and disseminated collateral to educate parents on the benefits of ABL



Activities

- Developed 'markers to test concepts' to shape parental demand
- Developed video and print collaterals to educate stakeholders on key skills that children should be learning by age

Goal

Pervasive

to 15% of

ABL in one

tier-1 city

demand leads

APSs adopting

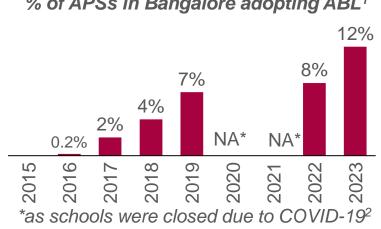
- Developed 8 videos to educate parents about their child's current poor learning outcomes, and help them engage in simple activities with their children at home
- Supported partners in organizing 'learning exhibitions' for parents, to showcase child learning outcomes due to ABL
- Developed 'Toys in a box', an engaging set of 6-8 developmentally appropriate affordable toys that engage children on key developmental outcomes

Impact to date

Disseminated parent engagement videos to 100K+ parents



% of APSs in Bangalore adopting ABL¹



^{1 –} Per PIPE's estimates, Bangalore has ~3,000 APSs Calculated based on the data reported by partners in July every year | 2 – Schools were physically shut due to COVID-19, and only remote learning products were offered by the partners to APSs during academic years 2020-21 and 2021-22

Raise awareness: Shared the importance of early education and the APS market with ~180 organizations



Activities

- 21 publications including ANYAS, IDELA Equity
- ~50 presentations at national and global conferences (e.g., Global Philanthropy Forum)
- Whitepapers highlighting program research (e.g. the PreschoolPromise)
- 9 best practices sharing sessions attended by ~20 organizations (e.g. MSDF investee's)
- 10+ Videos highlighting sales process, parent engagement etc.
- ~180 annual 1-1 update calls with people from foundations, NGOs and other organizations working in the education space to share PIPE's approach

Impact to date



 Companies have used PIPEs best practices and business model to better target the APS market



 Godrej developed a program to support ABL solution providers by providing grants to APSs to "trial" the solution



 AVPN set up 'Early Learning Collective' as they realized that ECE can have high impact



 Central Square Foundation added a vertical that focuses on ECE based on PIPE research



Aga Khan Education Service, India using videos developed by PIPE to communicate benefits of ABL to teachers and parents

Goal

best practices,

aspirations of

organizations

annually

families with

Share

100

approach,

tools, and

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Sample list of 20 toys for the fully loaded version (1/7)

S. No.	Toy	Target grades	Impact Areas	Illustration
1	Lacing shapes	NurseryJr. KG	 Fine motor and sensory skills Hand eye coordination Cognitive and language skills Identification and naming of shapes Executive functions Persistence Problem solving 	
2	Brain flakes	NurseryJr. KGSr. KG	 Fine motor and sensory skills Hand eye coordination Cognitive and language skills Identification and naming of shapes Executive functions Persistence Problem solving 	
3	Building blocks	NurseryJr. KGSr. KG	 Fine motor skills Executive functions Persistence Problem solving Hand eye coordination Cognitive and language skills Identification of colours 	

Sample list of 20 toys for the fully loaded version (2/7)

S. No.	Тоу	Target grades	Impact Areas	Illustration
41	Stacking toys	NurseryJr. KG	 Cognitive and language skills Identification of colors Sequencing by size Comparison by size Fine motor skills 	
52	Jigsaw puzzles	NurseryJr. KGSr. KG	 Fine motor skills Hand eye coordination Cognitive skills Color and spatial awareness Following steps Socio-emotional skills Overcoming challenges Self esteem Executive functions Problem solving 	
63	Wooden jigsaw puzzles	NurseryJr. KG	 Fine motor skills Hand eye coordination Cognitive skills Color and spatial awareness Following steps 	

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Sample list of 20 toys for the fully loaded version (3/7)

S. No.	Toy	Target grades	Impact Areas	Illustration
7	Beading kit	NurseryJr. KGSr. KG	 Fine motor skills Hand eye coordination Cognitive skills Color and spatial awareness Following steps Patterning (Pre-Math) Counting 	
8	Tangrams	NurseryJr. KGSr. KG	 Fine motor skills Hand eye coordination Cognitive skills Spatial understanding and positioning Shape and color identification Executive Function Problem solving Socio-emotional skills Self esteem 	NOT THE PARTY OF T
9	Wooden shape stacker and sorter	NurseryJr. KG	 Fine motor skills Hand eye coordination Cognitive skills Sorting by shape, color and size Executive Function Problem solving 	

Sample list of 20 toys for the fully loaded version (4/7)

S. No.	Toy	Target grades	Impact Areas	Illustration
10	Matching game	NurseryJr. KGSr. KG	 Cognitive and language skills Observation Visual Discrimination Vocabulary Executive Function Problem solving Concentration Short term memory 	RE-SCHOOL MATCH (N'LEARN) The First Committee of the residence of the r
11	What does not belong?	• Jr. KG • Sr. KG	 Cognitive and language skills Observation Visual discrimination Logical thinking Vocabulary Executive Function Focus and Concentration 	What does of Belong of the second of the sec
12	Story sequencing and building	NurseryJr. KG	 Cognitive and Language skills Observation Concentration Sequencing Pre-reading skills 	PRE-SCHOOL What's Next? Supering District D

Sample list of 20 toys for the fully loaded version (5/7)

S. No.	Тоу	Target grades	Impact Areas	Illustration
13 ¹	Board game: Snakes and ladders	Jr. KGSr. KG	 Socio-emotional skills Turn taking Cognitive and language skills Counting Number identification Counting on Addition 	36 33 34 33 34 34 34 34 34 34 34 34 34 34
14 ²	Board game: Ludo	Jr. KGSr. KG	 Socio-emotional skills Turn taking Cognitive and language skills Counting Number identification Counting on Addition 	
15 ³	Picture book	NurseryJr. KGSr. KG	 Fine motor skills Hand eye coordination Cognitive and language skills Pre-literacy skills Sequencing Predicting Imagination Conversation 	Cinderella Aliana Arriver Meriner

Sample list of 20 toys for the fully loaded version (6/7)

S. No.	Toy	Target grades	Impact Areas	Illustration
16 ¹	Colouring books and crayons	Jr. KGSr. KG	 Fine motor skills Cognitive and language skills Creativity Vocabulary Socio-emotional skills Self esteem Executive Function Concentration 	Coloring pages 26
17 ²	Play dough/ modelling clay	NurseryJr. KGSr. KG	 Fine motor skills Hand eye coordination Socio-emotional skills Self esteem Planning and implementation Cognitive and language skills Creativity 	
18 ³	Dice	NurseryJr. KGSr. KG	 Cognitive skills Counting Counting on Addition 	

Sample list of 20 toys for the fully loaded version (7/7)

S. No.	Toy	Target grades	Impact Areas	Illustration
19 ¹	Playing cards	Jr. KGSr. KG	 Cognitive and language skills Observation Visual Discrimination Counting Matching Number values Executive Function - Concentration 	4 9 K
202	Dominoes	NurseryJr.KGSr.KG	 Fine motor skills Cognitive and language skills Visual discrimination Counting Matching Executive function Concentration 	



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