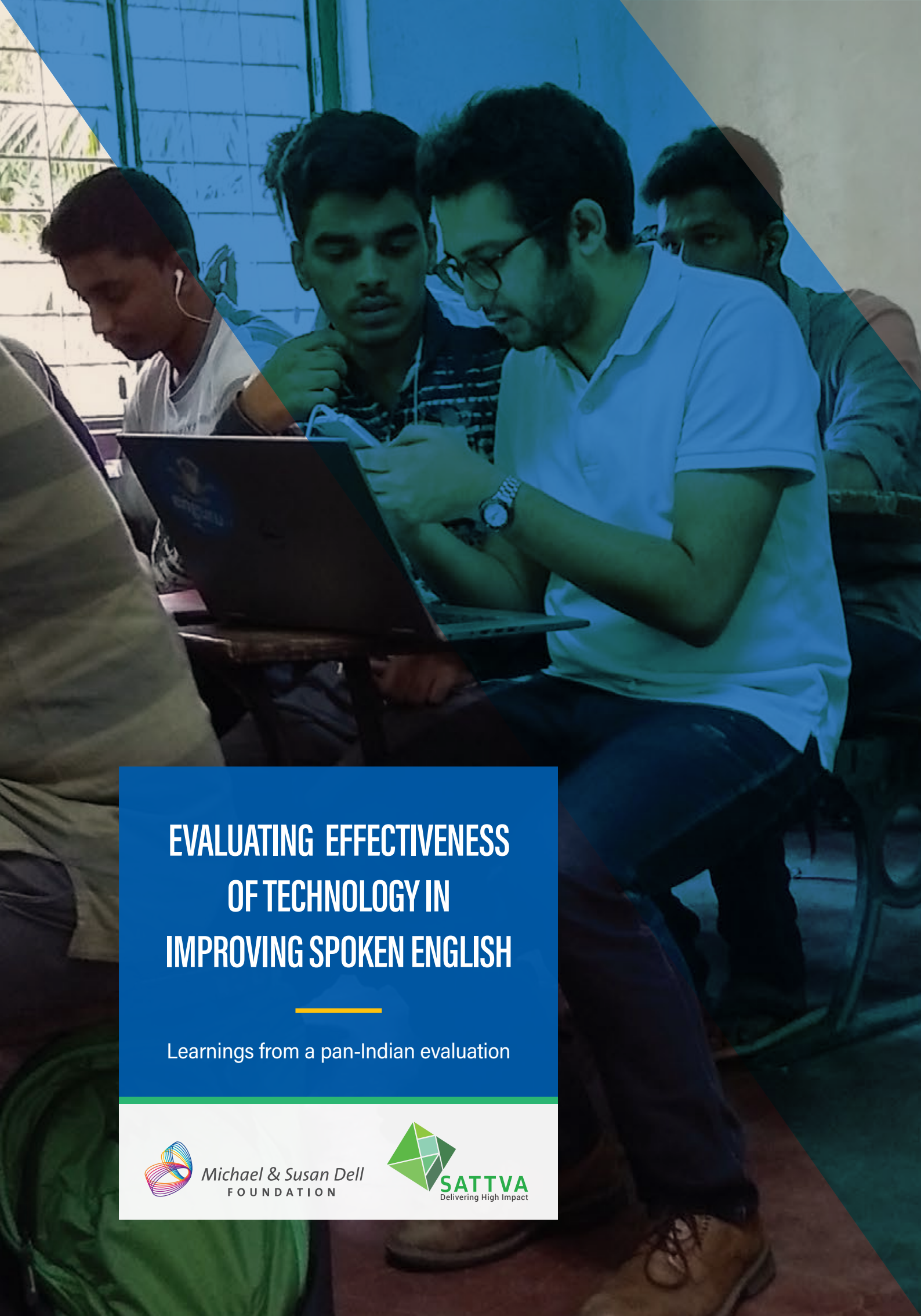

EVALUATING EFFECTIVENESS OF TECHNOLOGY IN IMPROVING SPOKEN ENGLISH

Learnings from a pan-Indian evaluation

Michael & Susan Dell FOUNDATION

SATTVA
Delivering High Impact

CREDITS AND ACKNOWLEDGEMENTS

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Lead consultants:
Sulagna Datta, Jai Warrier, Taruni Thiagarajan, Ojas Malpani, Prachi Agrawal

Project advisors:
Rathish Balakrishnan, Rahil Rangwala

External advisors:
Madan Padaki, Neeti Sharma

Design and typesetting:
Bhakthi Dakshinamurthy | bhakthi.dakshinamurthy@gmail.com

Photo credits:
Sattva, iStock, Jai Warrier

Contact:
knowledge@sattva.co.in

We are grateful to the partners of this study: Leap Skills, Medha, Unnati, Hello English, King's Learning, STEP, ChatChit, SkillFone and Aspiring Minds. We are also thankful to the 50+ colleges and schools who agreed to be part of this evaluation.

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FOREWORD

ASHISH DHAWAN
Founder & Chairman, Central Square Foundation

I congratulate the team at Michael & Susan Dell Foundation and Sattva for this report as the efficacy of EdTech products has been a key area of focus for us at the Central Square Foundation. Most start-ups in the EdTech space in India are focused on test preparation, as it is the only segment where you can link money with a tangible outcome. In India, tangibility is where the revenue models are, thus most of the test prep players get more traction and funding.

This report is a good starting point that points towards a directional trend of positive learning outcomes through tech. While there are always going to be externalities in a large scale low income setting such as device availability, infrastructure, no parental guidance/ support; a 50% improvers rate is an encouraging trend. With events like the Corona pandemic, it's becoming increasingly clear that the future is online. Learning must go on, and EdTech is a key lever for it.

Specifically on Spoken English, in the last decade, the importance of English has improved with an increase in the number of jobs that require fluency in spoken English. In a 2012 survey by the Economist Intelligence Unit[1], 70% of the executives said that their workforce will need to master English to realise corporate expansion plans, and a quarter said that more than 50% of their total workforce would need English ability. Yet, only 4% men and 2% women in wage employment in India report speaking fluently in English[2]. Furthermore, CSF's diagnostic study that included qualitative interviews of more than 400 secondary school students in Delhi government schools highlighted that a majority of students expressed a desire to improve English communication skills.

The high-potential mechanism for meeting this demand for English is through tech-based interventions. The Internet and Mobile Association of India (IAMAI) reports that about 16% of daily mobile users in urban India, are school-going children[3]. This show that a mobile based solution has a scope of reaching large number of youth across the country.

I also think philanthropy can play a key role in this sector. It can enable an active for-profit provider to enter the low income target segment. Building awareness about the product and benefits, building a case study, and paving the way for market entry are some ways in which philanthropy can lend its resources. Another way philanthropy could intervene in this market is by seeding a high-quality organisation that could take Spoken English solution to the target segment. Lastly, philanthropy could help facilitate entry for a global provider to enter the Indian market. In this case, philanthropic money could be spent on aiding operations for the global provider to enter the low income target segment in India.

Again, I congratulate both Michael & Susan Dell Foundation and Sattva for the report. It is an invaluable addition to the knowledge ecosystem on designing tech-based solutions to spoken English in variety of contexts.

1. Economist Intelligence Unit (2012). Competing across borders: How cultural and communication barriers affect business 2. Barriers to Skilling: Evidence from English Training in India; Tarun Jain, Indian School of Business 3. http://bestmediainfo.com/wp-content/uploads/2017/03/Internet-in-India-2016.pdf

INTRODUCTION TO THIS REPORT

GEETA GOEL
Country Director, Michael & Susan Dell Foundation, India

In my work at the Michael & Susan Dell Foundation, I have the opportunity to meet with people from many sectors and hear directly from them about their experiences. Our work spans education, jobs and livelihoods, and financial inclusion throughout India. And while the sectors and the people are different, what we tend to hear on our field visits is typically the same.

"Look, my son can rattle off 10 sentences in English. He goes to an English-medium school."

"My daughter will become an officer; she knows how to speak English."

"I want to marry someone who knows how to speak English so she can groom my children to speak in English."

It's pretty remarkable, and yet understandable all at once. The ability to speak English has become a status symbol in our society and is seen as a path to a better life, and a key to higher income jobs. I attribute this to the legacy of the British Raj, where English-speaking Indians found favor with the British government English being our official language as per the Constitution for the first 15 years after the Constitution was adopted (and later extended). Also, most of independent India's early investments in science, technology, and research have been English-based content and institutions. Finally, globalisation trends, including India excelling in IT services and a significant fueling of exports of software in the 1980's to the United States and other English-speaking countries, has also contributed to this trend. The ability to speak English is aspirational, and in many cases, is key to breaking the cycle of poverty for families.

This seems more true today than ever before – both because of the conscious focus on inclusive growth and the changing nature of jobs. Research indicates that a 10% increase in social mobility can boost economic growth by 5%[1], and the World Economic Forum (WEF) points to the massive task of re-skilling one billion people by 2030.

We also know that the jobs that are likely to create the most lucrative opportunities are not just in the fields of data and artificial intelligence, but also project management, people and culture, and sales and marketing[2]. Several of these require strong interpersonal communication skills, and even for roles that are not anchored around communication and collaboration, most of the training materials and courses are available only in English. Simply put, there is a critical need to focus on re-skilling and ensure we adopt an inclusive lens to reap the maximum benefits of economic growth.

With the Michael & Susan Dell Foundation's vision of accelerating human opportunity at scale for low-income urban communities, our focus on jobs and livelihoods is an obvious key programmatic priority. Influencing key levers that can improve income prospects for the people we serve is a core part of our mandate. In that context, it is important that there are effective, affordable and scalable English-language learning tools anchored around employability for low income, aspirational Indian youth.

1. https://www.weforum.org/reports/global-social-mobility-index-2020-why-economies-benefit-from-fixing-inequality 2. https://www.weforum.org/projects/reskilling-revolution-platform

Data and measurement are part of the DNA and the fabric of the Dell Foundation and baked into everything we do. We never want to be chasing the bright shiny object; rather, it's essential that our funding is catalyzing change for the people we serve.

For education projects and interventions, we have invested resources in the creation of standardised, simplified learning assessment tools in the K-12 space. In partnership with the top three K-12 assessment vendors in India, Educational Initiatives, Gray Matters India and CSSL, we have been able to get comparable scales and benchmark data to guide our investment decisions. It helped us select and support the more effective interventions, either in our large-scale work with state governments, or in our impact investment portfolio of EdTech companies.

And this is the reason we chose to work with Sattva on a two-year, large-scale pilot assessment – to have data-backed choices and approaches on technology-led English-language learning for employability. It also enables others to do their jobs more effectively: helping governments create a toolkit or framework, foundations or CSRs, or even Human Resources departments make the right choices, given their scale and cost considerations, and to customise their approaches to the key objectives they are trying to achieve, and to the starting level of their customers/beneficiaries. This study anchors around technology-led tools given the focus on large-scale, replicable and effective solutions.

This report is a good starting point on the assessment of English-language learning tools for employability, and I would encourage organisations to leverage this resource, share their feedback and data, and make this a growing repository of best practices available as a public good.

This is only the beginning and we hope that these measurement tools will continue to inspire businesses, governments, and academia to work together to open doors of opportunity to current and future talent to be skill-ready for the jobs they deserve.

> **With the Michael & Susan Dell Foundation's vision of accelerating human opportunity at scale for low income urban communities, our focus on jobs and livelihoods is an obvious key programmatic priority. It is important that there are effective, affordable and scalable English-language learning tools anchored around employability for low income, aspirational Indian youth.**

WHY THIS REPORT ON EDTECH BASED ENGLISH FOR EMPLOYABILITY?

In India, one in every two people is a youth; which means they are aged 25 and below.[1] However, the demographic dividend provided by a young workforce has not been leveraged.

India has struggled with defining the role and importance of skill development in national growth. According to the India Economic Survey 2017 by the Organisation of Economic Cooperation & Development (OECD), public spending on education in India is 3.8% of the GDP, lower than countries such as Brazil and Malaysia .The education system and syllabus haven't kept up with the fast-changing business needs, especially those that are interlinked to soft skills, advanced technology adoption, and even the flexibility to re-skill for emerging opportunities.[2]

This points towards the urgent and ever growing need to make more Indians job-ready, focusing on young graduates to augment their employability. However, the gap between employability standards of the market and the current youth is stark. A recent study revealed that only 15% of graduates can speak English with a level in fluency and pronunciation, respectively, that renders speech meaningful. Improving spoken English has a direct impact on the employability and livelihood of youth, which is one of the core focus areas of the Michael & Susan Dell Foundation.

Current models of teaching English are not scalable since the traditional instructor-classroom setup is out of step with the current requirements and high-quality trainers are hard to find and difficult to retain. Technology can hence play a strong role in creating a scalable model of improving Spoken English Skills [SES].

The Michael & Susan Dell Foundation and Sattva Consulting developed a few solution interventions to test on-ground to evaluate the impact of technology leveraged courses and models on improving SES and the role thereof in employment.

This pilot and the related findings are a first-of-its-kind study in India on the improvement of SES through technology-led intervention for students aged 15-22. The usage and efficacy of mobile-based language learning is in a nascent stage in India with no published reports in the space.

As per Tracxn research, which is India's leading data aggregation and analytics platform - there are ~4500 EdTech products in India today, and ~17,000 products globally. A market combing of the available EdTech products in the English space were done. A long-list of 26 applications was created, which were the only ones catering to language learning for the target age group.

1. https://www.lowyinstitute.org/the-interpreter/indias-demographic-timebomb
2. https://www.forbes.com/sites/prakashmallya/2018/05/06/india-is-creating-millions-of-high-skilled-jobs-but-its-education-system-isnt-keeping-up/#27a4ae8b480f

The study was carried out among different cohorts of youth over two years who were provided technology based solutions for improving SES. The study used a combination of quantitative and qualitative data collection to understand the impact of the technology solutions on the students. The aim was to evaluate the effectiveness of technology-based solutions towards improving Spoken English Skills (SES) through quantifiable outcomes. Following are the key questions that the study seeked to answer.

1. **Do technology-based solutions help improve the Spoken English Skills (SES) of youth between the age of 18 and 22?**
2. **What specific capabilities and features of technology applications have the highest impact on improvement in skill outcomes of the youth?**
3. **Do improved SES result in increased chances of getting aspirational jobs?**

WHO CAN USE THIS REPORT AND HOW?

Practitioners of Education technology-based teaching methods

Organisations working on improving learning outcomes in schools

Organisations working on upskilling for employability

This report can be used for guidelines pertaining to technology products and operational best practices while implementing technology interventions at scale

Education Technology product teams

This report provides usable information on key metrics for dashboards to be able to monitor programmes effectively

Policymakers/funders of Education Technology programmes

This report can be used for key inputs on models that could work at scale

8 INSIGHTS

ON EDTECH LEVERAGED UPSKILLING AND LEARNING

1

EdTech leveraged models helped students improve their Spoken English Skills.

Students in the treatment group showed 2.1X improvement on an average over the control group*

*students not exposed to the EdTech module

2

Blended models with some classroom facilitation worked best for beginners and saw far lower drop-outs than pure online models.

- **Blended models saw 34% drop-outs versus 56% for pure online models**
- **Beginners* saw 24% higher improvement through blended models over pure online models**

*typically students from Polytechnics and ITIs

3

Starting levels of students [Base-line scores] were dependent on external factors but improvement in English proficiency was not.

External factors include parents' education levels, parents' income, medium of schooling etc.

4

Beginners showed 6x improvement over students who started with higher base-lines through this EdTech module.

Students across all levels show improvement, however average improvement for Beginners is higher

5

Students who signed up on their own, far outperformed students who were mandated to join the course.

Voluntary cohorts saw 36% higher improvement and 15% lower drop-outs than mandatory cohorts.

6

From a cost perspective, pure online models had a higher ROI for all types of students over blended models.

- There is trade-off between operating at scale versus focusing on depth of intervention.
- Pure online models have a low cost of delivery for all students over blended models.

7

Students with higher end-line scores commanded higher salaries than those with lower end-line scores.

- Aspiring Minds has defined a score of 42 out of 100 as minimum English proficiency for obtaining customer facing job roles.
- Students who had end-line scores >42 commanded 23% higher salaries than those who scored below.

8

3 out of 5 applications tested in this intervention failed due to no customisation for the urban poor population.

Features of EdTech applications cannot be one-size-fits-all. They have to be customised for the low income context.

ABOUT THE INTERVENTION

ABOUT THE INTERVENTION

This on-ground intervention was conducted between April 2017 and August 2019 covering ~12,000 students, 9 states in India across two academic years. 12,000 students across colleges/ ITI/ polytechnics were trained, along with 2,000 students from schools (government, government-aided, low income private schools.

For the college population, the sample set included 18-22 year old students from the urban poor segment, in their pre-final or final year of study, in their respective courses.

For the school cohort, the students were between 15-18 years old across grades 9-11.

Applications

YEAR 1

5

Hello English, Enguru, ChatChit, Lifeboard, STEP

YEAR 2

2

Hello English, Enguru

On-ground mobilisation and training partners

YEAR 1

4

Leap Skills, ISTAR, FFE, Unnati

YEAR 2

4

Leap Skills, Medha, Enguru, Hello English

Students

YEAR 1

6000

College students

YEAR 2

4200

College students

2046

School students

Models

YEAR 1

2

Online Unproctored

No offline intervention, 40 hours online

Blended 40

40 hours offline, 40 hours online

YEAR 2

4

Online Unproctored

No offline intervention, 40 hours online

Blended 40

40 hours offline, 40 hours online

Online Proctored

Pure online, with offline pushes for app usage (only in schools)

Blended 18

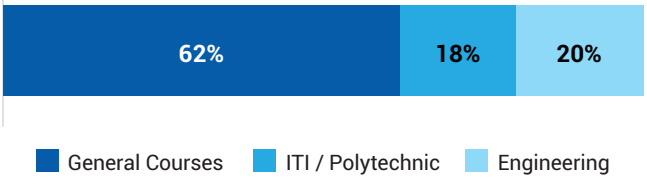
18 hours offline, 40 hours online

The OP model was not implemented in colleges since less than 10% of chosen colleges had the flexibility to allow 40 hours of proctored content in college labs. For school students using school facilities and infrastructure, the OUP model was not implemented.

About the target segment

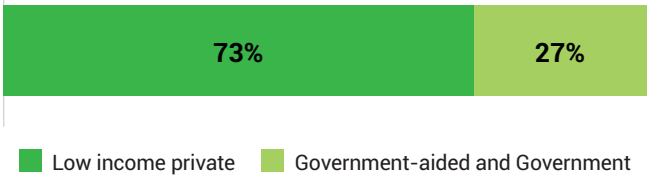
Institutions

COLLEGE TYPE



3 types of colleges were targeted. 62% of the college cohort came from General courses (B.A/B.Com/B.Sc)

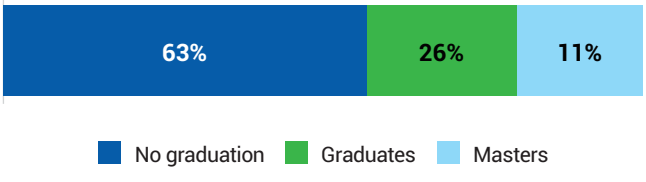
SCHOOL TYPE



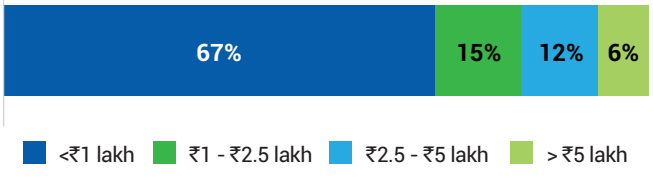
3 types of schools were targeted. Low income private, government-aided and government.

Demographics

PARENT'S EDUCATION LEVEL

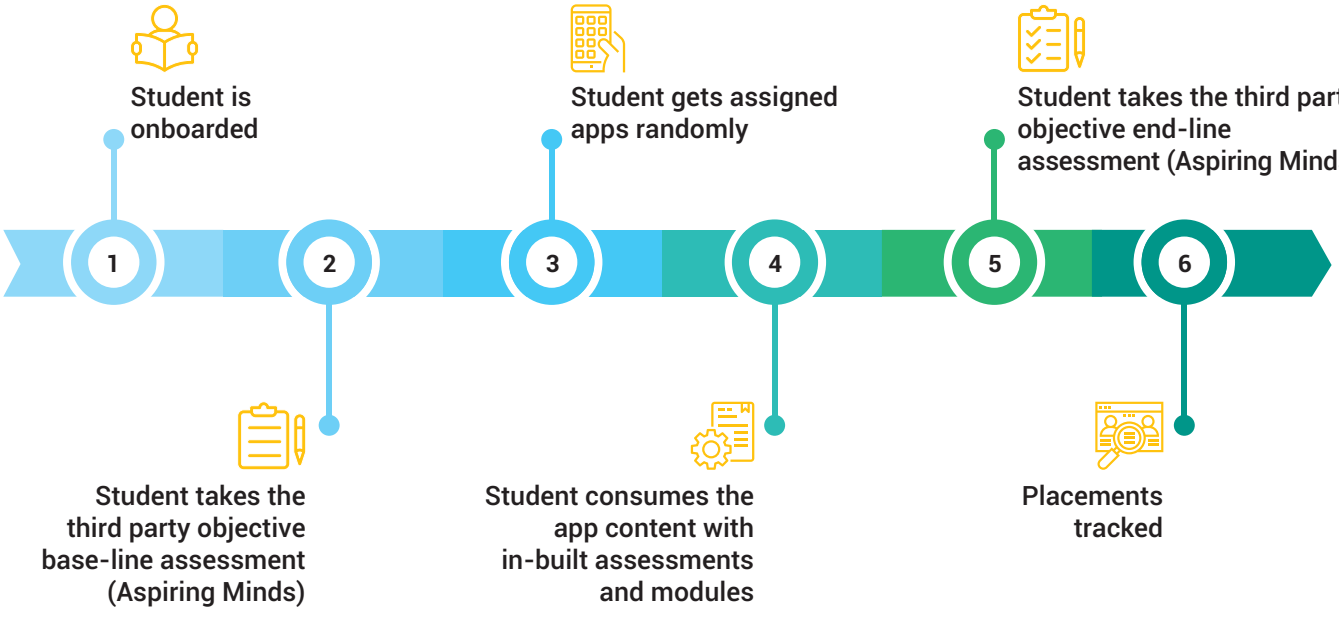


HOUSEHOLD INCOME



63% of the cohort were first generation college goers and came from low income urban poor background

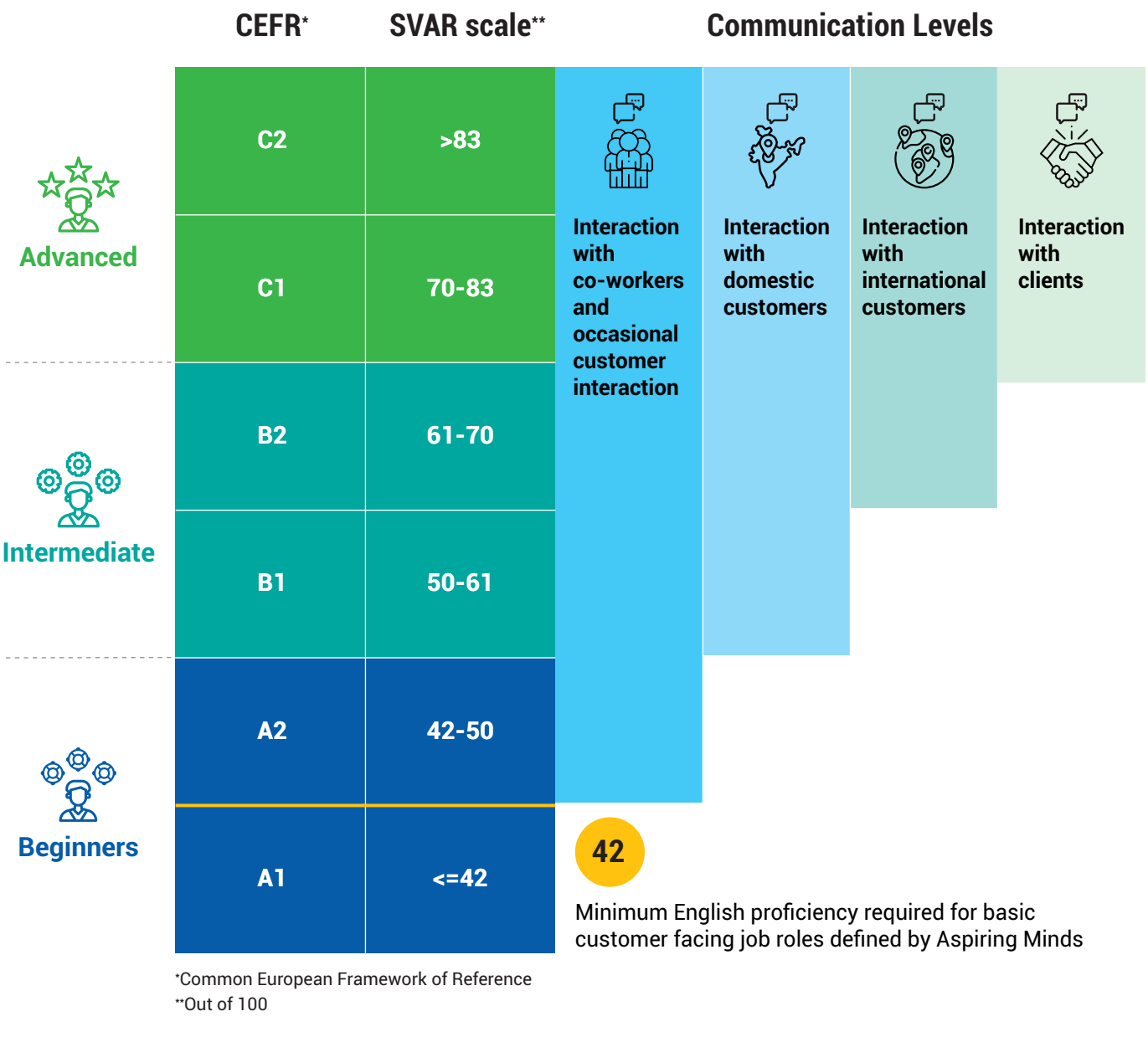
Steps of the on-ground intervention



Assessment Scale

For the purpose of the study, the Aspiring Minds SVAR tool was used. It is a test administered on a mobile app, and measures spoken English ability. SVAR was chosen from 6 assessment service providers based on scale, economic considerations and relevance to the pilot.

The SVAR assessment is based on 6 parameters of SES leading to a cumulative overall score of 100.



*Common European Framework of Reference
**Out of 100

Models of intervention

Research on short duration effective intervention in language skills found that technology interventions improved language skills after 40 hours worth of content consumption (approximately 12 weeks of 20-30 minutes of daily consumption).

The content of the apps were designed to support students in achieving the target level of English proficiency with a 42 CEFR score required to see improved performance in interviews resulting in:

(a) **increased probability of being selected**

(b) **improved quality of job options**

The apps accurately estimate the students' proficiency through base-line assessments providing content that is appropriate for students at different levels. A large number of students who signed up were in the target base-line proficiency range of 25-33. This pilot included an action research project with the objective of evaluating the effectiveness of 4 models - **online unproctored, online proctored, blended 18 and blended 40** (details on page 7) - in improving college students' proficiency in speaking English and improving placement outcomes versus a control group. In addition, the evaluation assessed if high school students could be taught earlier through the apps in order to achieve similar English proficiency outcomes.

The following hypotheses were tested:
A 3-month dedicated app based spoken English course leads to improved English levels (from 33 to 42 on an average)

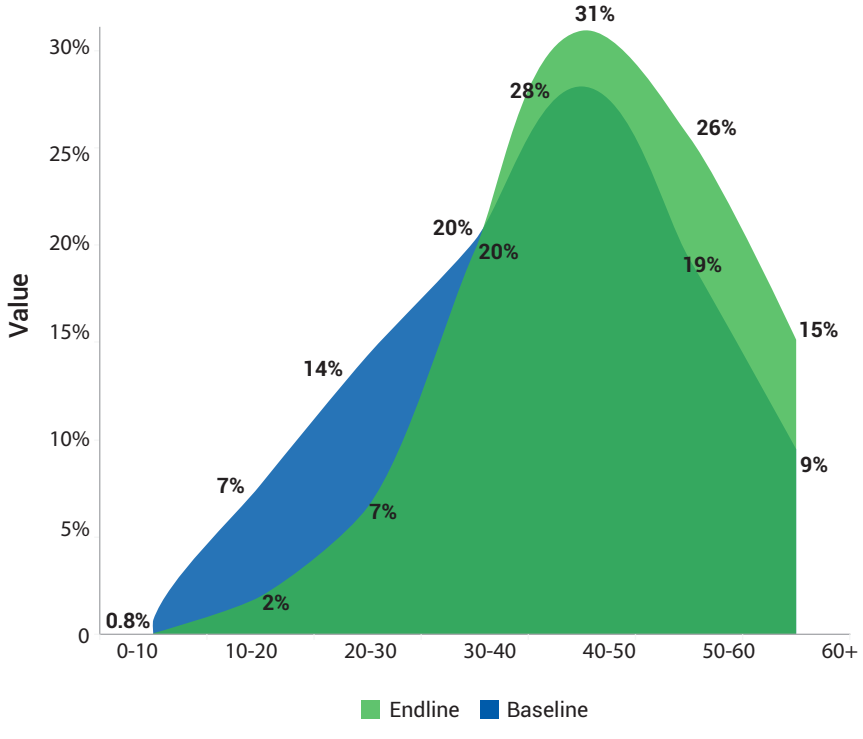
1. **Technology interventions lead to improvement in Spoken English Skills [SES]. Improved SES lead to better employment outcomes because SES is a critical employability skill**
2. **More content consumed on the applications lead to higher improvement in SES in pure online models**
3. **Students who are a part of a blended model will have more confidence as more face time with the teacher solves discipline and communication issues and also helps with peer-to-peer learning**

Outcome Indicators

- **Improvement in English proficiency**
- **Percentage of college and school students reaching the target level of 42**
- **Placement rates, type of job secured through placement and salary**
- **Completion rates of the programme**

KEY INSIGHTS

1. EdTech leveraged models helped students improve their Spoken English Skills.



Rightward shift in end-line scores denotes improvement in SES

Overall, across all models, 49% students have seen an improvement in Spoken English Skills. Out of this, 51% have improved by more than 1 CEFR level.

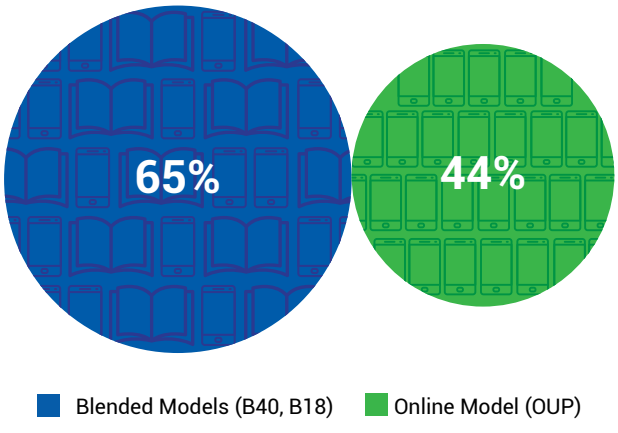
To elaborate the insight further, the study has shown an evident shift in students who have achieved higher spoken English proficiency post the programme completion.

There has been improvement observed, albeit to varying degrees in comparison with the control group cohort. On further comparison, it was observed that the Blended 40 hour (B40) as a model shows the highest percentage of improvers in the treatment group while the control group has shown the least amount of improvement in the same.

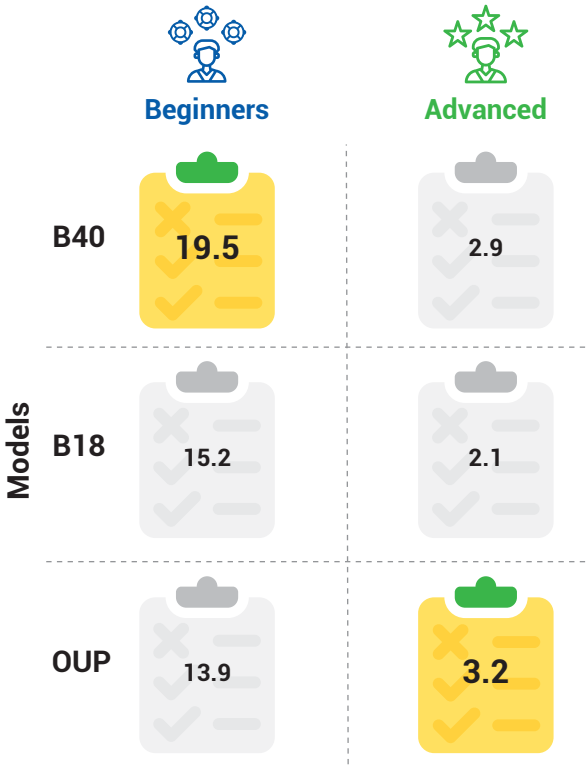
In the Blended 40 hour model, 57% improvers show improvement, followed closely by Online Unproctored model (OUP) and Blended 18 hour model (B18), at 48% and 45% respectively. This signifies that it is a combination of online curriculum with a component of face-to-face interaction that shows the greatest impact on learners. From the table above, it is evident that each model is a trade-off between the proportion of improvers, average improvement thereof and the % of drop-outs. OUP is able to drive higher average improvement than B18, but has a large proportion of drop-outs. Qualitative studies with a sample of 1000 students indicates that OUP students self-select the most motivated students to complete the course.

Model	Average Improvement	Median Improvement	Improvers %	Dropouts %
OUP	4.9	0.0	48%	56%
B18	4.8	0.0	45%	30%
B40	**7.6**	**2.8**	**57%**	**38%**
Control	2.6	0.0	38%	

2. Blended models with some classroom facilitation worked best for beginners and saw far lower drop-outs than pure online models.



Completion %



Average Improvement Scores

Course completion was defined as students who took the base-line test, activated their application, and then did the end-line test.

Completion rates were seen to be the highest for blended models owing to the presence of an instructor/ facilitator. Throughout the programme, all qualitative data pointed towards the fact that students felt more motivated to go through their modules if the instructor set targets for them.

The online un-proctored model (OUP) for colleges has no human touch point. It's a self selection model with only the most motivated students consuming content at their own pace and completing the course. Attrition is the highest in the model. Globally, in uncontrolled online learning models such as Massive Open Online Courses, completion rates range from 12% - 54%*.

Qualitative interviews with students who dropped out revealed the following reasons:

1. Loss of motivation due to accumulation of unanswered questions
2. Heavy work-load from ongoing college course-work
3. Activation rates were also higher for Blended models

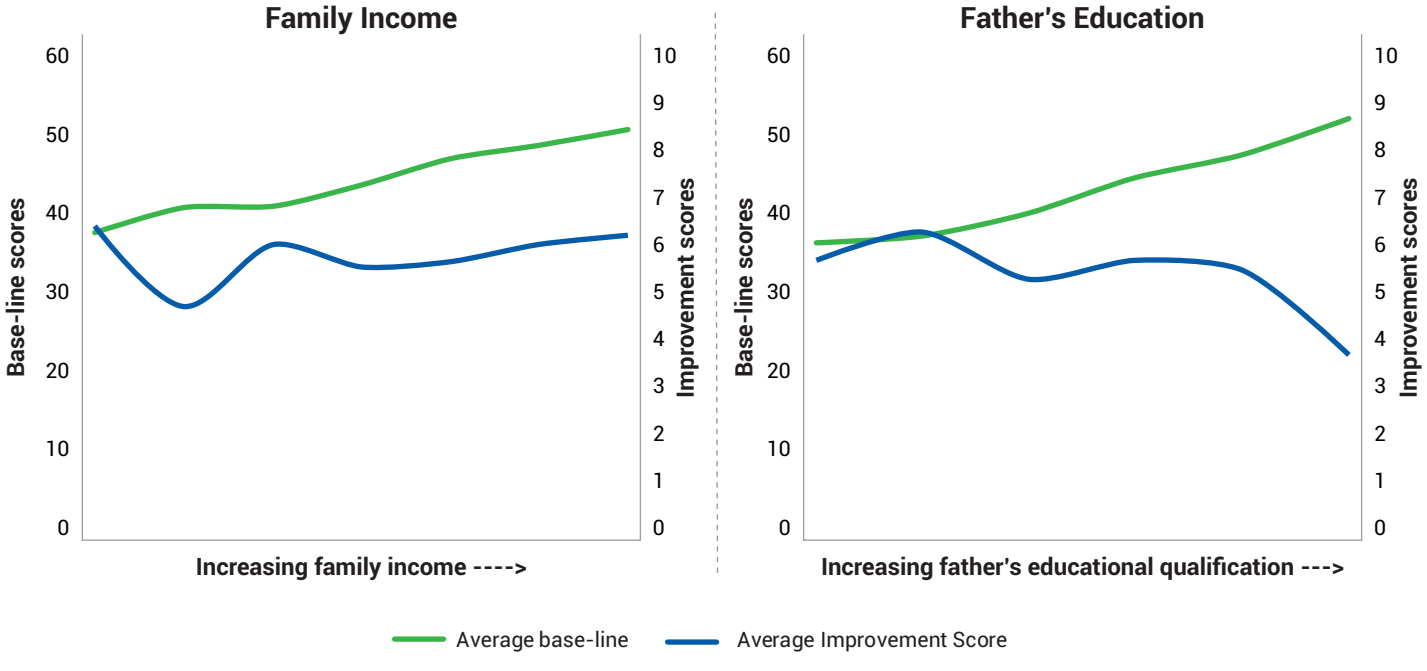
Model	B40	B18	OUP
Activation rates	80%	85%	73%

Beginners are seen to do the best in the B40 model, with distribution moving to OUP at higher-level base-lines. **Qualitative interviews supported this trend through the following two key insights:**

1. Beginner-level students preferred an instructor-led model to pure online models to resolve queries instantly.
2. Advanced-level students preferred the pure online models owing to its flexibility. Only the most motivated students completed the programme, as evidenced by the high drop-out %.

*https://www.insidehighered.com/digital-learning/article/2019/01/16/study-offers-data-show-moocs-didnt-achieve-their-goals

3. Starting levels of students [Base-line scores] were dependent on external factors but improvement in English proficiency was not.



There is no correlation between a student's background and their learning pattern.

Family income levels	Average content consumed (%)
< ₹25,000	71
₹25,000-₹50,000	73
₹50,000-₹75,000	68
₹75,000 - ₹1,00,000	80
₹1,00,000 - ₹2,50,000	63
₹2,50,000 - ₹5,00,000	76
>₹5,00,000	43

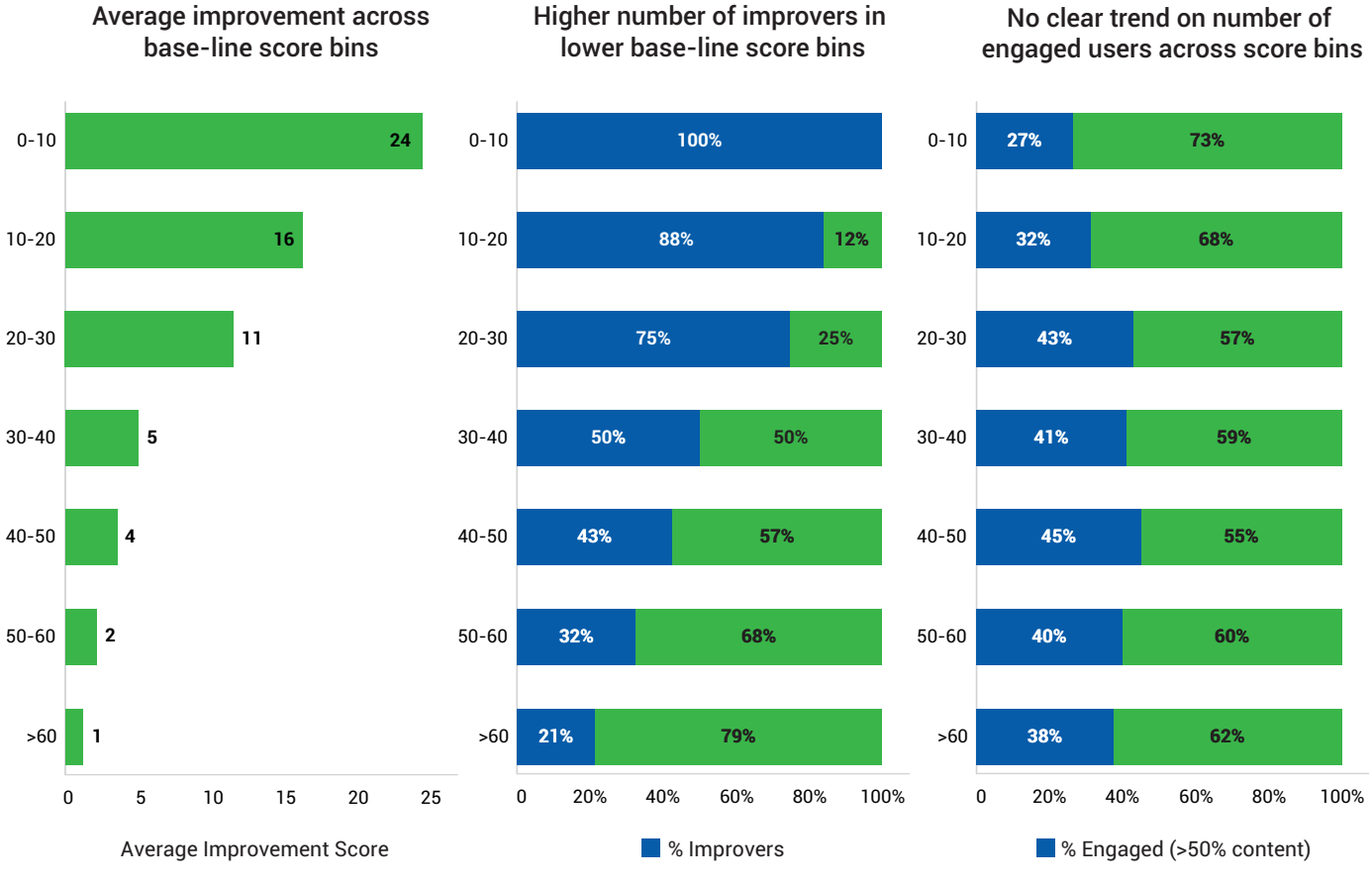
Father's education levels	Average content consumed (%)
No Education	57
Primary School	76
High School	64
Graduate	72
Post Graduate (Masters)	76
PHD (Doctorate)	41

Average content consumed (%) across Income and Education levels

Base-line scores are seen to be strongly correlated to factors such as annual house-hold income, parents' education levels, etc. However, consumption of content on the applications and improvement levels show no trend.

This is encouraging since the background of a student does not influence their learning patterns. Improvement is a combination of factors such as classes attended, motivation levels and learnability.

4. Beginners showed 6x improvement over students who started with higher base-lines through this EdTech module.



All college students who appeared for the end-line were divided into three archetypes, based on the base-line levels of the students:

1. Beginners [0-20]
2. Intermediate [20-40]
3. Advanced [40 and above]

While all base-line levels improve through the programmes, Beginners have the highest proportion of improvers and show high absolute improvement.

While conducting the study, it was important that we identify a reasonable threshold that can be considered to determine the definition of engagement. The threshold here was kept at 50% of Spoken English content, during the course of intervention.

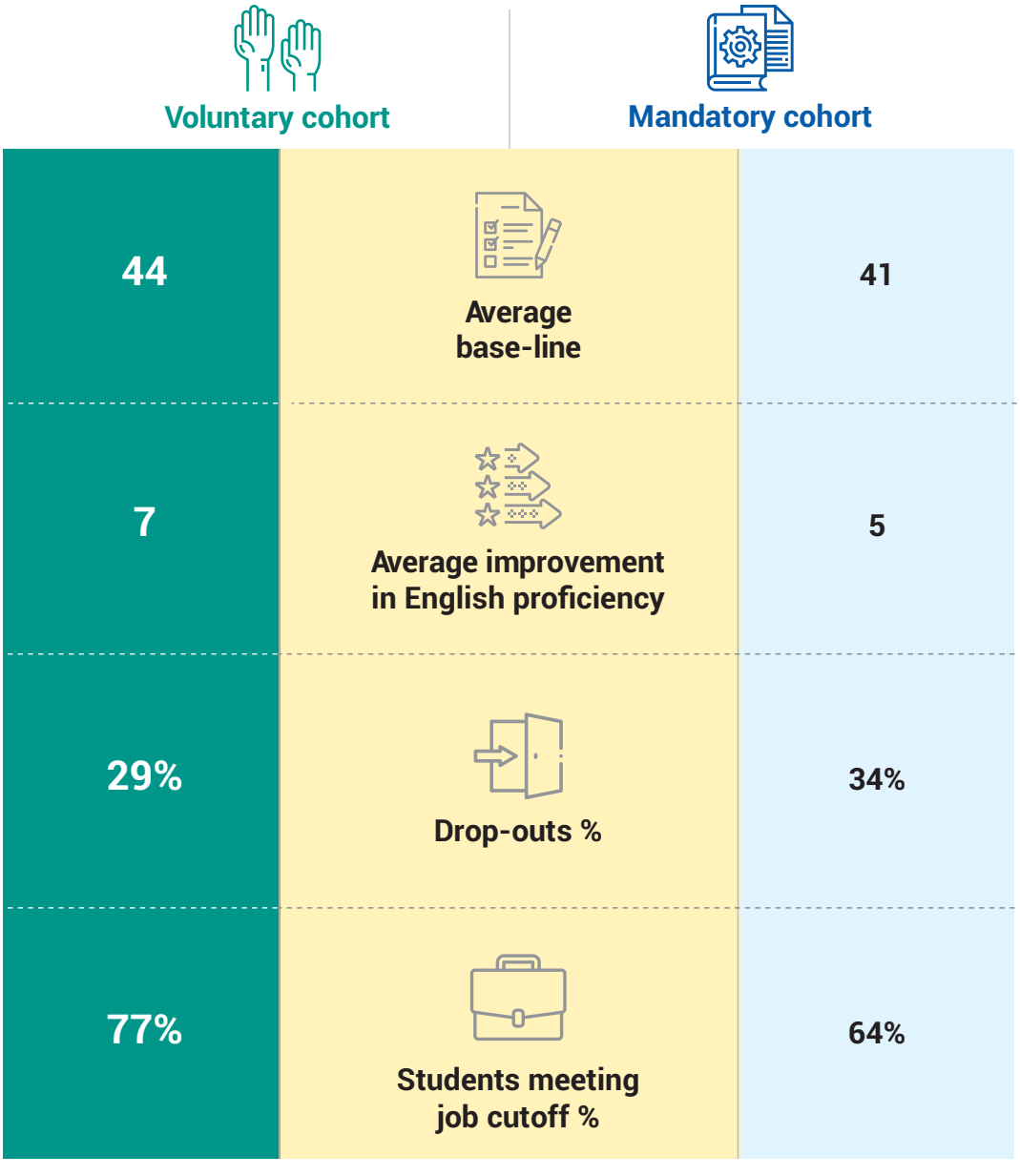
Key trends that emerged are:

1. With lower base-line bins displaying higher average improvement, it has been observed that the percentage of improvement gradually decreases while moving towards the higher base-line bins.

2. The proportion of improvers decreases as base-lines increase.

3. No clear identifiable trend is found with respect to the relation between the absolute engagement and improvement across base-line levels. This points towards the overall model or pedagogy causing improvement versus only the modules on the application.

5. Students who signed up on their own far outperformed students who were mandated to join the course.

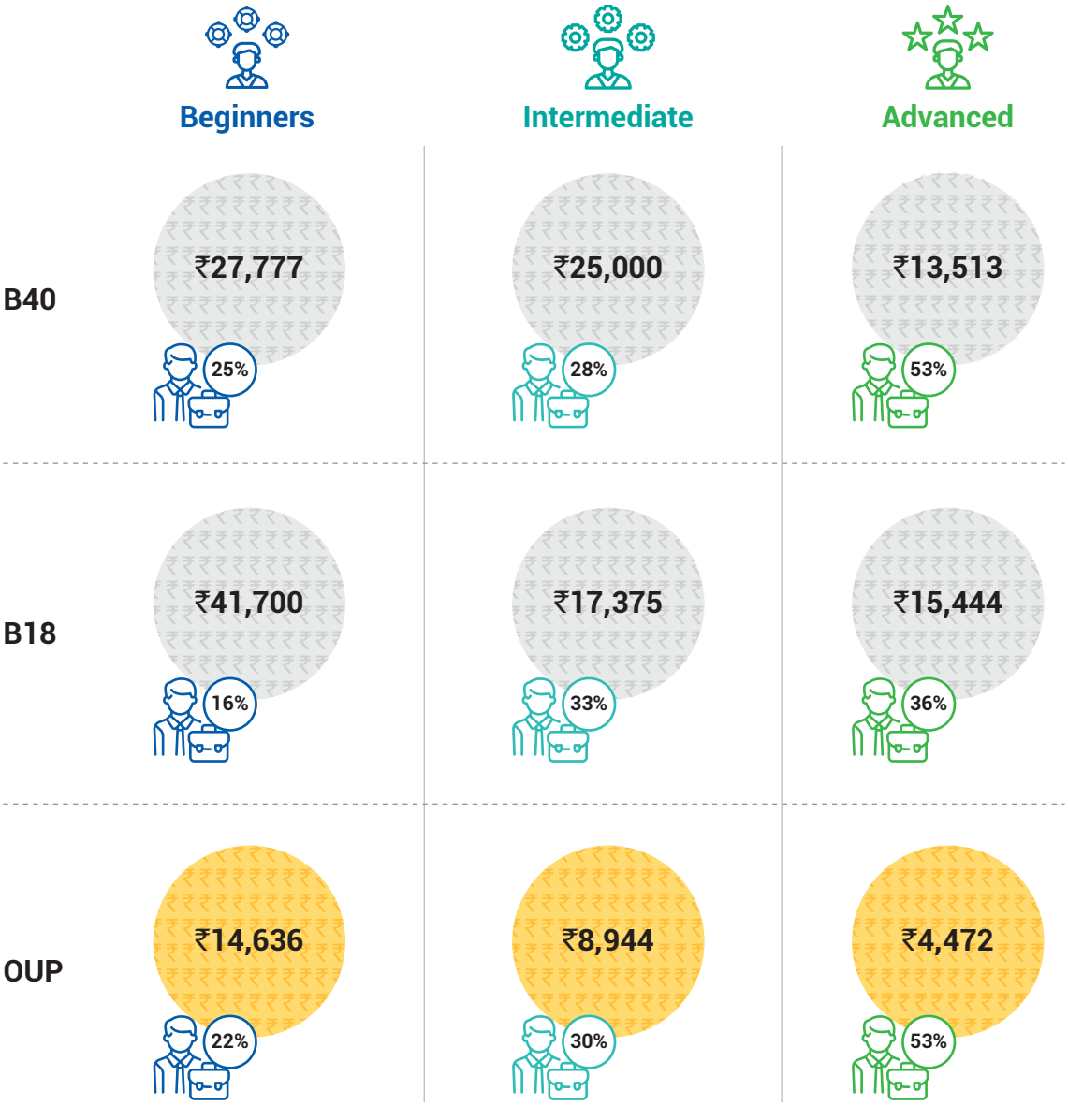


There were two key methods of signing up students for the course: students who signed up on their own [Voluntary] and students who were mandated by their institutes to complete the course [Mandatory].

Voluntary cohorts have higher average base-lines to begin with, higher improvements, higher proportion of improvers and lower dropouts. We can easily pinpoint to factors like willingness and influence without authority to have played a significant role here.This trend was replicated across models, and showed statistical significance.

This is counterintuitive to the overall trend of students at higher base-lines showing lower average improvements. This trend is most pronounced for the B40 model, where the voluntary cohort has ~2X average improvement, ~4X median improvement and ~0.5X % drop-outs.

6. From a cost perspective, pure online models had a higher ROI for all types of students over blended models.



% of students clearing job-cutoffs

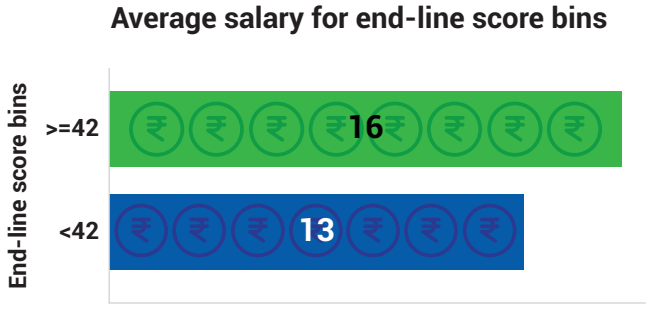
From the visual it is evident that, factoring in the loaded cost of delivery of each model, and the success metric of enabling students to clear job-cut offs – **the pure online model has the highest ROI for all types of students**, even taking into account its high drop-out rates.

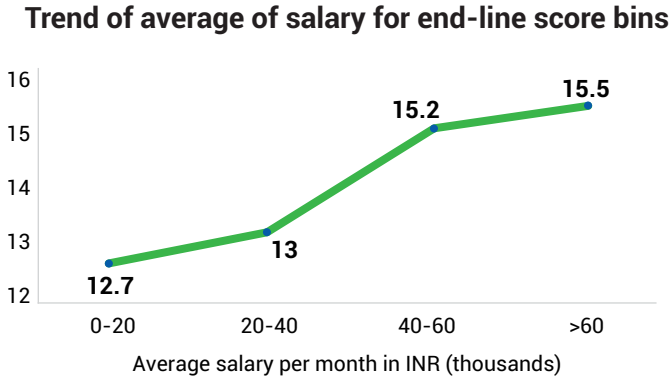
The B40 model helps more students clear job-cutoffs for beginner level students and has lower drop-outs. However, due to its high cost, it's ROI is significantly lower than the OUP model.

Construction of the ROI number:

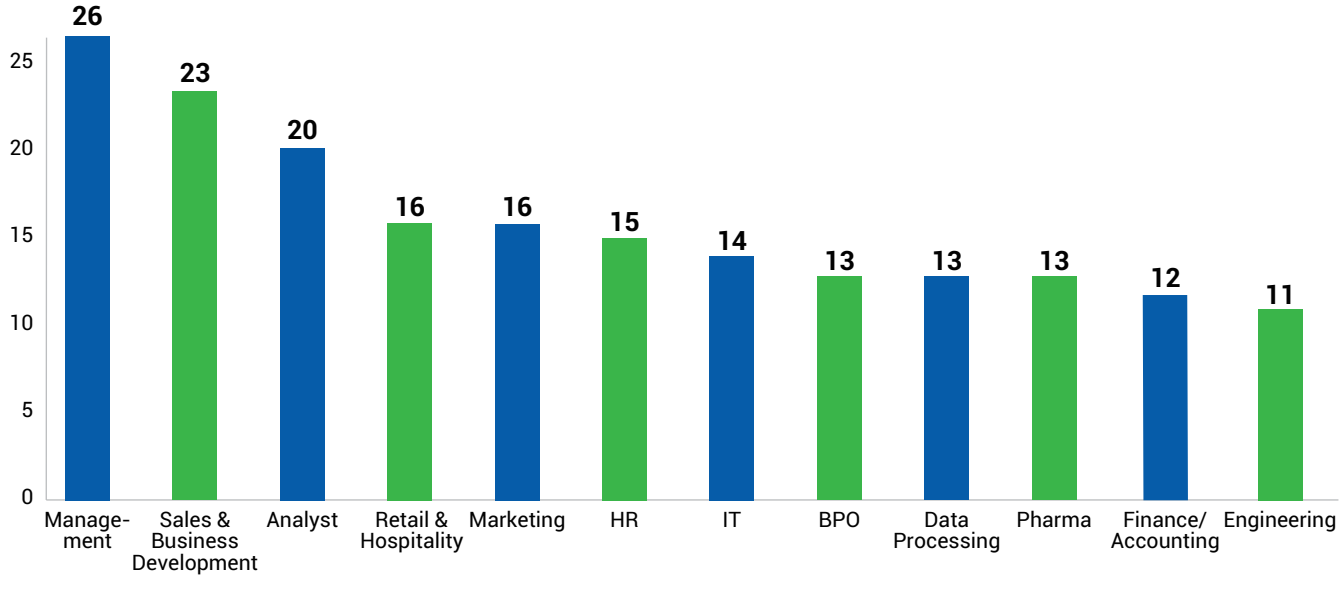
The loaded cost of delivery of each model was arrived at by adding the cost of app licences, instructor cost (if applicable), incentives and other costs such as curriculum design etc. The success metrics of the course was taken as percentages of students clearing job-cutoffs. The ROI number was calculated as the overall cost of delivery divided by the number of students clearing job-cutoffs.

7. Students with higher end-line scores commanded higher salaries than those with lower end-line scores.





*Salary information available for 303 out of 344 students placed



Average salary per month by sector in INR (thousands)

Overall, there is a directional trend between English proficiency and salaries commanded. Students scoring more than 42 [minimum threshold for basic customer facing job roles defined by Aspiring Minds, covered in detail on page 7] in the end-line secured a higher average salary than their peers. This trend has been replicated across different college types. Statistically, a linear regression model suggests that the end-line bucket >=42 is significant in deriving the salary of the students.

From conversations with employers and placement heads of colleges – **it was perceived that 'Spoken English Skills' is considered to be important during placements, interviews and other job processes – putting a more conversant in English candidate in the bracket of "potentially smart candidates" for an organisation.**

Interviews with 45 employers and an analysis of ~550 job roles secured by students revealed that 73% of job roles needed English as a 'must-have', 20% job roles said English was a 'good to have' and 7% job roles did not need English. The latter category were job roles secured by students from ITIs, Polytechnics and Engineering institutes - which were purely technical and didn't involve customer interaction.

FEATURES OF EDTECH APPLICATIONS CANNOT BE ONE-SIZE-FITS-ALL

They have to be customised for the low income context. 3 out of 5 applications failed due to lack of customisation for the urban poor population.

The number of EdTech products in the market that are actually built keeping the bottom of the pyramid in mind is shockingly low.

- From a Sattva research, out of 566 school products catering to Hindi and Mathematics, only 19% had either already partnered with or shown interest in working with government schools. Which means a staggering 81% of products were meant for the private school context.

- When products are built keeping private schools in mind, their data and infrastructure requirements are higher, and more often than not, their content is at levels not comprehensible by students in government schools. Implementation teams have the onerous task of spending time to customise these products for the BoP context.

Applications	Time per week (in minutes)
App 1	73
App 2	35
App 3	3
App 4	5
App 5	15

* data has been anonymised

In Year 1, out of the 5 applications above, only Enguru and Hello English were suitable for the low income context. The others were heavy on videos and required strong internet, assumed high base-line levels and didn't function offline even partially. This translated to low usage per week as shown in the table above.

THE EDUCATION TECHNOLOGY TOOLKIT FOR PRACTITIONERS, FUNDERS AND POLICYMAKERS

FOR ANY INDIVIDUAL OR ORGANISATION USING EDTECH PRODUCTS, WHAT ARE THE KEY METRICS TO TRACK?

Most EdTech products have default dashboards that capture some of these metrics. But these are customisable to include implementer preferences.

1

Activation/ Sign-up %

This is the first barrier to the success of any EdTech product. This is essentially the process by which a student registers on the product with a unique ID. Any product to be implemented at scale needs an easy process to sign-in and re-login later.

2

Time per week in minutes

This is an indicator of the level of engagement with a product. In our pilot, the best performing applications typically had engagements to the tune of 40-60 minutes per week – translating to about 10-12 minutes per weekday.

3

Time per 1% content

This is an indicator of the type of modules an EdTech product is made up of. If the average time per 1% content is long, it means that students take more time to get through each module. This has been seen to be inversely proportional to end-line rates. Products with higher time per 1% completion see lower end-line rates. For e.g. 16.3 minutes means that on average, students using a particular app spend 16.3 minutes every week using the app.

WHAT ARE THE FEATURES OF EDTECH APPLICATIONS/PRODUCTS THAT ARE CRITICAL FOR SUCCESS?

1. Parameters applicable to EdTech interventions

Application Parameters	Hello English	Enguru	App 3	App 4	App 5
Content for all the levers: A1 to C2					
Provides actionable feedback on student's performance					
Interface available in multiple languages*					
Well-defined framework for assessments					
Maintains leaderboard to track students doing well in a batch					
Clearly defined help section and instructions for easy navigation					
Helpline number for doubts when manual intervention is required					
Supplementary material for practice					

*to cater to students at the national level

Very desirable features Somewhat desirable features Areas of improvement

Hello English and Enguru emerged to be the most successful applications at the end of the two-year pilot.

Content comprehensiveness:
The application should have content for all students – Basic and Advanced to work at scale

Actionable student feedback:
The application should provide feedback based on the performance recorded in the application

Assessments:
Comprehensive assessment framework should be available to analyse progress of each student

Number of languages in the app interface:
Since the project will was at a pan-India level, number of languages was beneficial to cater to a larger community of the students. In qualitative interviews, students voted this the second best feature after leaderboards. Hello English has an interface with 18 Indian languages

Leaderboards:
Similar to rankings in a classroom model, this feature gives a fair understanding of how the student fares in a larger pool of candidates gearing up for jobs. This was voted as the most motivating feature by students.

Section guides for users:
Guidelines to attempt each level/lesson/activity should be present to help the students in the course

Helpline:
Availability of helpline to help the students when manual intervention is needed

Supplementary material for practice and brush-up:
Practice/supplementary sections to help practice the concepts learnt should be available on the application

2. Parameters applicable to the EdTech product (app)

Application Parameters	Hello English	Enguru	App 3	App 4	App 5
Available offline					
Size	30 MB	17 MB	20 MB	5 MB	43 MB
Gamified					
User interface - Easy to use and interactive					
User Experience - Bug-free, hassle-free experience					
Optional motivational levers - Calls/ SMS					
Provision of end-course certification					

Very desirable features Somewhat desirable features Areas of improvement

App running in offline mode:
Since, majority of the students are data conscious, the applications should be able to function offline

Size of the app:
Students are conscious about larger sized apps and tend to delete these quickly

Gamification:
Gamified models ensure that the interest of the students is sustained in absence of direct contact with the teachers that calls for attention in an instructor-led classroom

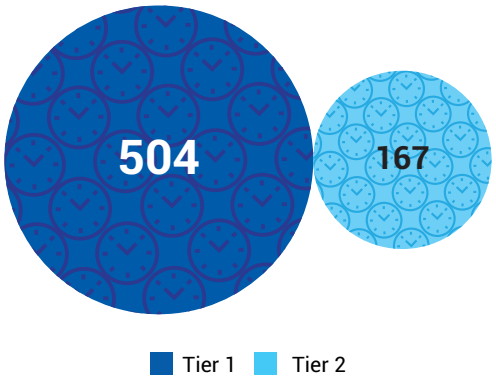
User Interface/ User Experience:
The apps should be easy to handle and interesting to keep the user engaged

Motivational levers to follow up with students:
Motivational levers such as calls, messages/ emails, push notifications help in pushing the students to engage more often

WHAT ARE THE FACTORS TO KEEP IN MIND WHILE IMPLEMENTING EDUCATION TECHNOLOGY PROGRAMMES?

IN COLLEGES:

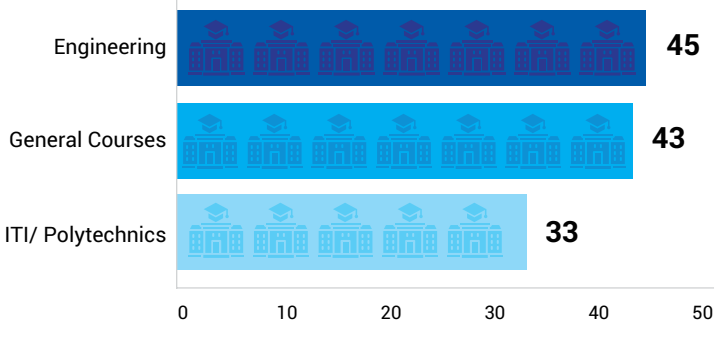
1. Consumption and application engagement patterns vary in different cities in India; hence the programme design needs to be customised.



Average time spent on the app (in minutes)

Tier I cities such as Delhi, Chennai and Bangalore saw almost 3X application engagement over Tier II cities such as Kanpur and Patna. While designing programmes for different cities, it is important to account for this and include additional support elements for Tier II cities such as push messaging and more hand-holding from trainers/ facilitators.

2. Different models work for different types of institutes. An appropriate model of delivery should be chosen after ascertaining starting levels of students.



Average baselines for Engineering, General courses and ITI/Polytechnics (out of 100)

ITIs and Polytechnic students start with a lower average base-line compared to students from general and engineering courses. Typically, blended models worked best for students from ITIs and Polytechnics and online models worked best for Engineering students. As seen on Page 13, students with higher base-lines benefited more from pure online courses owing to its flexibility.

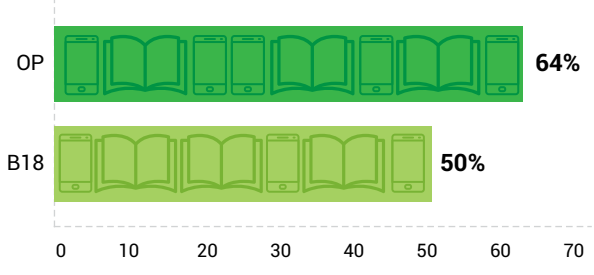
3. Factors such as semester of intervention and college support are critical in ensuring success.

- Colleges with **intervention in the penultimate semester** saw 17% more activation, and 31% more completion than those in the last semester. This was due to students having to complete their course-work, projects and other training necessary for graduation.

- Colleges that **supported the intervention actively through measures** such as reminders, carving out time to implement this, etc. saw 21% higher course completion on an average than passive colleges.

IN SCHOOLS:

1. Fully in-school programmes saw more success than those involving technology usage at home. For the low income school context, models with components of usage should be avoided to ensure higher engagement.



Activation rates for OP and B18

The B18 model that involved using the application at home, saw far lower activation than the fully in-school model because of factors such as lack of devices at home, and lack of parental guidance and awareness.

For all government, government-aided and private schools; at home activation for blended models was between 0-30% for ~2000 students.

2. Different schools have students with varying starting points. The intervention model needs to take these differences into account.

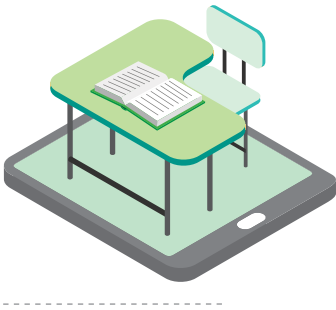
Average base-line scores (out of 100)

Typically, government-aided and low-income private schools are at similar levels and have higher starting points than government school students.

3. Infrastructure continues to be a key challenge in schools. There is an opportunity for low cost device and infrastructure providers in schools to build the EdTech ecosystem.

For both OP and B18, usage of technology in class-rooms was not smooth because of a ~4:1 student to device ratio, connectivity issues, and time-tables being taken over by other subject teachers.

For models that were successful, the mobilisation partner sourced tabs to the classrooms.



WHAT DOES IT MEAN FOR US GOING FORWARD?

RATHISH BALAKRISHNAN
Co-founder and Managing Partner, Sattva Consulting

There has been a growing evidence on the role of technology in enabling learning and best practices in leveraging technology to improve quality of learning. While there has been a lot of focus on test preparation and technology in classrooms, there has not been as much focus on the impact of technology in improving spoken English. We do hope our study furthers the dialogue on the impact of technology on learning and addresses the gap in evidence specifically around Spoken English Skills.

The findings of our study provide conclusive evidence on the positive impact of technology in improving Spoken English Skills of students. More importantly, the study also shows that while the background of the students, such as the salary and education of the parents, has an impact on the base-line scores of the students, it doesn't have any bearing on the end-line of the students. This is an important evidence to highlight the role that technology can play in ensuring an equitable model of improving English at scale.

Sattva's experience with EdTech solutions highlight that the critical challenges in unlocking the value of technology is finding the right implementation models on the ground. And consolidated learnings over the last two years have helped us identify the right blend of online and offline learning that work with specific types of students. We have been able to identify specific features in mobile applications that influence adoption and effectiveness among students. Our experiences with incentives have helped us understand what works with specific target audiences. We do hope these specific recommendations are relevant and actionable for practitioners.

The results of this study gains greater relevance in the light of the recent COVID-19 pandemic. Given the economic impact of the crisis, there will be a stronger need for students to improve their chances of employability and their readiness to the market. At the same time, the continued risk of the pandemic and the emerging reality of social distancing would mean the role of technology in education will continue to grow. Hence, we hope our insights provide relevant answers when such technology solutions gain increased attention and adoption among colleges, skill development institutions and other social impact programmes.

What is our hope for this report? We hope practitioners take these recommendations in helping implement and improve their programmes. We hope that the evidence from this study builds confidence among donors to fund more technology interventions to improve Spoken English Skills. Most importantly, we see this study and this report as an ongoing engagement in driving impact – So, if you do have comments, questions and learnings from your experiences with technology in spoken English, we would love to hear from you.

Do send in your feedback and thoughts by emailing **research.advisory@sattva.co.in**

ABOUT MICHAEL & SUSAN DELL FOUNDATION

The Michael & Susan Dell Foundation is dedicated to transforming the lives of children living in urban poverty through improved education, health, and family economic stability. Since our start, nearly 20 years ago, we have committed more than $1.7 billion to support families across the United States, India and South Africa.

In India, the foundation is focused on enabling children and youth in aspirational India to reach their goals through quality education and employment opportunities. This focus is driven by investments in education, jobs and livelihood, and financial inclusion. With over $200 million in investments over the past 14 years, the foundation has impacted the lives of over 12 million children and families in the country.

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ABOUT SATTVA

Sattva is a social impact strategy consulting and implementation firm. Sattva works closely at the intersection of business and impact, with multiple stakeholders including non-profits, social enterprises, corporations and the social investing ecosystem.

Sattva works on the ground in India, Africa and South Asia and engages with leading organisations across the globe through services in strategic advisory, realising operational outcomes, CSR, knowledge, assessments, and co-creation of sustainable models. Sattva works to realise inclusive development goals across themes in emerging markets including education, skill development and livelihoods, healthcare and sanitation, digital and financial inclusion, energy access and environment, among others. Sattva has offices in Bangalore, Mumbai and Delhi.

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