March, 2024

Entrepreneurship MINDSET

Research Report of

'A Longitudinal Study investigating the impact of Entrepreneurial Mindset Curriculum (EMC) on the students of class 9th to 12th of the Delhi government schools.'

SCERT

स्वाध्यायान्मा प्रमदः

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Introduction

The Entrepreneurship Mindset Curriculum (EMC) goes beyond the conventional notion of entrepreneurship. It extends its reach beyond just starting and running businesses, aiming to instil a mindset with universal applications. This mindset nurtures qualities like recognizing opportunities, resilience in the face of failure, adaptability, and perseverance, enabling students to take control of their destinies, fostering innovation and self-reliance.

In a country where formal entrepreneurship education was typically limited to higher education, particularly in technical and management institutions, the introduction of EMC for students in grades 9-12 marks a significant shift. A longitudinal study is a crucial research approach to assess the long-term impact of educational initiatives, such as the Entrepreneurship Mindset Curriculum (EMC) introduced in Delhi Government Schools in 2019. This curriculum is developed to equip students in grades 9-12 with the skills and mindset necessary to thrive in the rapidly changing 21st-century world. In this era of technological advancement and globalisation, traditional academic knowledge alone falls short. The EMC's objective is to cultivate qualities like creativity, adaptability, resilience, and a willingness to take calculated risks.

While entrepreneurship as a credit and a course structure is available at global educational institutes in many under graduate and post graduate degrees, Delhi government's Entrepreneurship Mindset Curriculum is a first of its kind program which is exclusively designed for and executed with high school students. The program spanning over four years gives students real world experience through experiential pedagogy to not just develop entrepreneurial mindset but also take charge of their career decisions, thus, helping them become their own anchor. With this dynamic nature and novelty of the program, carrying out a research to measure the impact and effectiveness of the program in generating that impact becomes quintessential. The longitudinal study serves this purpose to establish more conviction for the program for the holistic development of the students, and to further suggest its applicability in other geographies as well as at higher levels of education.

By conducting a longitudinal study, educators and policymakers can gain insights into how the EMC shapes students' mindsets over time. This research allows for a comprehensive evaluation of the curriculum's effectiveness, ensuring that education adapts to the evolving needs of students in an ever-changing world. In summary, longitudinal studies are critical for assessing the long-term impact of educational programs like the EMC, ensuring that students are prepared for the challenges and opportunities of the future.

Objectives

The primary objectives of this longitudinal study are:

1. To investigate the evolution of Entrepreneurial mindset among a diverse group of students over the first year of a 4-year period of Entrepreneurship Mindset Curriculum (EMC).

2. To examine the Impact of Entrepreneurship Mindset Curriculum (EMC) on the perspectives of students regarding their career anchors.
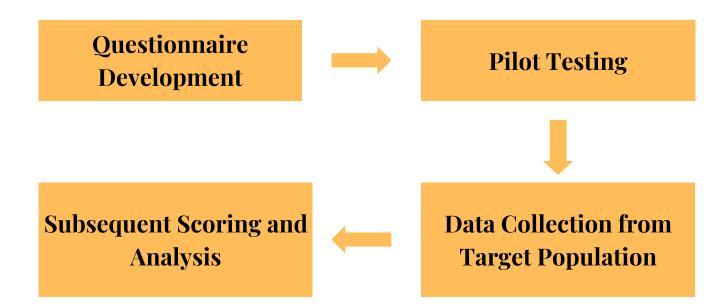
Limitations

This current analysis focuses on the four years of the Longitudinal Research Study which is being conducted to study the impact of the complete program of Entrepreneurship Mindset Curriculum (EMC). As the EMC program progresses, the study will evolve to facilitate a more comprehensive analysis.

Methodology

From the plethora of methodologies available for this study, the following two methods have been selected for assessment:

Survey Method (Psychometric Test):

This method involved administering a structured questionnaire designed to measure specific competencies or psychological attributes. **The process included questionnaire development, pilot testing, data collection from the target population, and subsequent scoring and analysis.** The number of questions in the test varied depending on the specific test chosen, and the competencies assessed could range from personality traits to cognitive abilities.

Questionnaire Development	→	Pilot Testing

Subsequent Scoring and Analysis	←	Data Collection from Target Population

Within the psychometric analysis, four pivotal competencies were identified, which play a crucial role in the development of entrepreneurial mindsets. These competencies include:

- Independent Decision Making,
- Willingness to Experiment,
- Self-Efficacy, and
- Grit

Each of these competencies will be evaluated through a series of 6 to 8 questions in the survey instruments.

The analysis will also examine any observed shifts in responses between the baseline and endline assessments. Additionally, the analysis will incorporate qualitative insights, draw conclusions from the data, provide recommendations, and propose future actions based on the findings.

Observation Method (4Cs Observation):

The observation method relied on the 4Cs Observation framework, which qualitatively assessed behaviours and competencies. The process included selecting and training observers, providing clear observation guidelines, conducting data collection through observations, and analysing the data qualitatively. The number and duration of observations depended on the study's design.

The 4Cs Observation Framework will primarily focus on assessing competencies associated with:
- Critical Thinking,
- Collaboration,
- Communication,
- Creativity.

This comprehensive analysis involves an in-depth exploration of the data collected. It will encompass a concise summary of noteworthy findings and a thorough breakdown of responses, categorized by factors such as district. Each competency will be evaluated through a series of 3 to 4 questions in the observation tool.

The psychometric instrument encompasses a comprehensive set of 60 inquiries. Furthermore, the observational instrument is tailored to a specific group task, thereby enabling the evaluation of students' proficiency in particular competencies within real-world scenarios. Both the psychometric test and observational data were acquired through the utilization of Alchemer, an online data collection tool.

Study Duration

This study is longitudinal, which means it tracks the same group of students for each of the 4 years, i.e, the entire duration of the Entrepreneurship Mindset Curriculum program as they progress from grade 9th to grade 12th.

Hypothesis

The study runs the following hypothesis:

1. **Null Hypothesis (H0):**
A. There is no significant change in the entrepreneurial mindset among students over the 4-year period of Entrepreneurship Mindset Curriculum (EMC).
B. There is no significant impact of Entrepreneurship Mindset Curriculum (EMC) on the perspectives of students regarding their career anchors.

2. **Alternate Hypothesis (H1):**
A. There is a significant change in the entrepreneurial mindset among students over the 4-year period of Entrepreneurship Mindset Curriculum (EMC).
B. There is a significant impact of Entrepreneurship Mindset Curriculum (EMC) on the perspectives of students regarding their career anchors.

Sampling & Data Collection

A purposive and random sampling method was used to select a sample of schools for both the tools used in the study.	
Schools	244
Districts	15
Types of schools	Government Boys Senior Secondary School, Government Girls Senior Secondary School, Rajkiya Pratibha Vikas Vidyalaya, Sarvodaya Kanya Vidyalaya,Sarvodya Bal Vidyalaya, andSarvodya (Co-ed) Vidyalaya
Target Sample (Psychometric Test)	25000 students from 244 schools
Target Sample (4Cs observation)	410 students from 74 schools

Note: Psychometric target sample included all grade 9 students of 244 schools. While the 4Cs observation target sample included 5-7 students of grade 9 from 74 out of 244 schools.

The **psychometric** instrument encompasses 60 inquiries assessing students' mindset in real life scenarios. Both the psychometric test and 4C's observation data were acquired through the utilization of Alchemer, an online data collection tool.

Timeline for the Study and Data Collection:

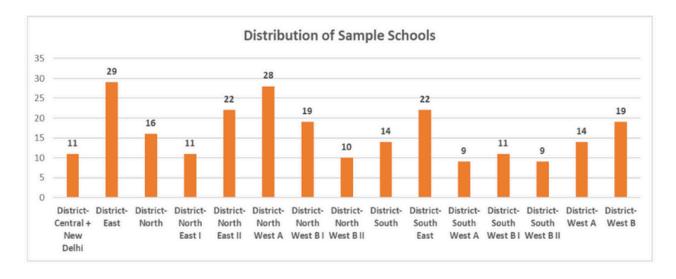|	IX	X	XI	XII
Pre-Test	April 2022	April 2023	April 2024	April 2025
Post Test	March 2023	March 2024	March 2025	March 2026

Note: The endline for grade 9 was considered to be same as the baseline for grade 10.
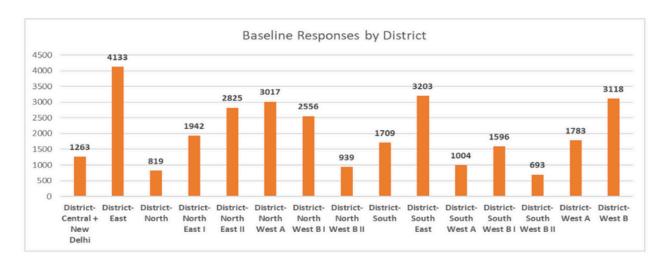
Overview of Baseline Responses

From the a sample of 250 schools across 15 districts of Delhi and targeted a minimum of 25000 student responses. The following graph shows the distribution of schools through the districts:

Distribution of Sample Schools

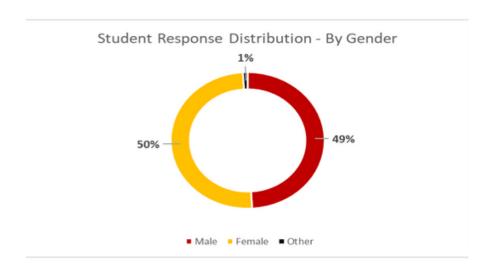| District	Schools
District-Central + New Delhi	11
District-East	29
District-North	16
District-North East I	11
District-North East II	22
District-North West A	28
District-North West B I	19
District-North West B II	10
District-South	14
District-South East	22
District-South West A	9
District-South West B I	11
District-South West B II	9
District-West A	14
District-West B	19

A total of 32,333 students from 244 schools responded to the baseline survey. We received more than 80 responses from 202 schools. The following graph shows the distribution of students across each district:

Baseline Responses by District

District	Responses
District-Central + New Delhi	1263
District-East	4133
District-North	819
District-North East I	1942
District-North East II	2825
District-North West A	3017
District-North West B I	2556
District-North West B II	939
District-South	1709
District-South East	3203
District-South West A	1004
District-South West B I	1596
District-South West B II	693
District-West A	1783
District-West B	3118

Post completion of the program, a similar endline form will be rolled out to measure shift in student mindset and competencies as an outcome of the curriculum.

On the completion of the baseline survey, collected responses were analyzed. It was found that more female students responded and completed the survey than the male students showcasing a difference in attitude towards survey completion among the students based on their gender, as shown below:

The gender demographics will further be assessed during the deeper analysis of the collected data.
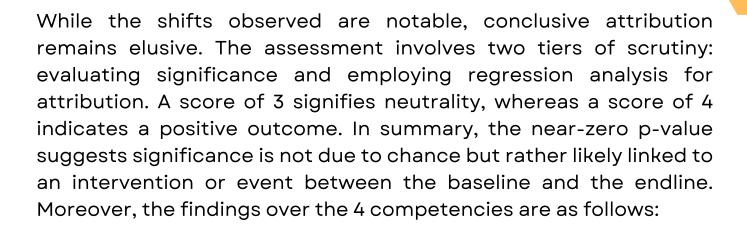
Findings & Analysis

Psychometric Test

Phase	BL	EL
# Total Responses	29,847	16,403
# Response (Female)	14,680	9307
# Responses (Male)	15.024	7079
# Responses (Others)	144	17
# Schools	244	237

Baseline records show more male entries, while endline records exhibit more female entries. Responses after cleaning involve removing duplicates, partials, incompletes, and any data filled in less than one minute, ensuring accuracy. The Baseline vs Endline responses are as following:

Districts	BL # Entries	EL # Entries	Reduction % in Responses
District- Central + New Delhi	1349	515	-61.8
District- East	3954	2190	-44.6
District- North	995	729	-26.7
District- North East I	1891	1197	-36.7
District- North East II	2719	1236	-54.5
District- North West A	3002	1377	-54.1
District- North West B I	2490	1331	-46.5
District- North West B II	1088	570	-47.6
District- South	1707	1007	-41.0
District- South East	3022	1169	-61.3
District- South West A	935	673	-28.0
District- South West B I	1472	960	-34.8
District- South West B II	665	404	-39.2
District- West A	1712	1281	-25.2
District- West B	2846	1764	-38.0
Grand Total	29847	16403	-13444

While the shifts observed are notable, conclusive attribution remains elusive. The assessment involves two tiers of scrutiny: evaluating significance and employing regression analysis for attribution. A score of 3 signifies neutrality, whereas a score of 4 indicates a positive outcome. In summary, the near-zero p-value suggests significance is not due to chance but rather likely linked to an intervention or event between the baseline and the endline. Moreover, the findings over the 4 competencies are as follows:

Independent Decision Making

Baseline Average Score : 3.554

Endline Average Score : 3.560

Shift in Average Score : 0.006

How to read this:

Negligible change in score from Baseline to Endline. On average students have selected the same option at Endline which they choose at Baseline

Overall Positive Shift % : 48%

Overall Negative Shift % : 48.4%

Overall No-Change % : 3.6%
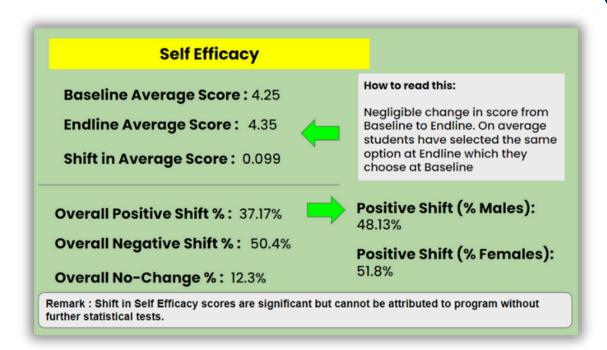
Positive Shift (% Males): 57.2%
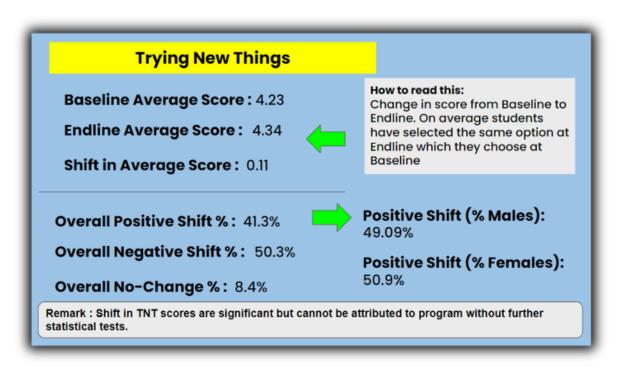
Positive Shift (% Females): 42.7%

Remark : Shift in IDM scores are non-significant and cannot be attributed to program without further statistical tests.

Insight: The Baseline average score for Independent Decision Making was 3.554. This registered an **average positive shift of 0.006** with the Endline average score standing at 3.560.

*Note: Even though the shift in the scores are significant it cannot be attributed to program without further statistical tests.
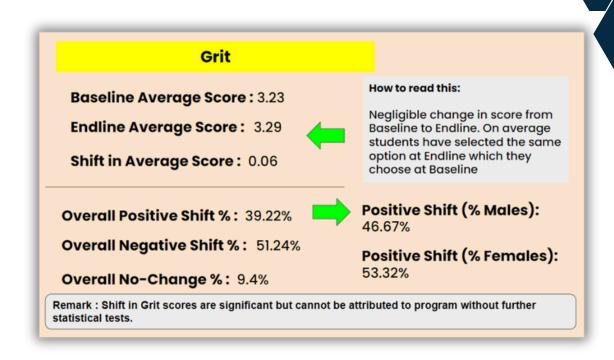
Self Efficacy

Baseline Average Score : 4.25

Endline Average Score : 4.35

Shift in Average Score : 0.099

How to read this:

Negligible change in score from Baseline to Endline. On average students have selected the same option at Endline which they choose at Baseline

Overall Positive Shift % : 37.17%

Overall Negative Shift % : 50.4%

Overall No-Change % : 12.3%

Positive Shift (% Males): 48.13%

Positive Shift (% Females): 51.8%

Remark : Shift in Self Efficacy scores are significant but cannot be attributed to program without further statistical tests.

Insight: The Baseline average score for Self Efficacy was 4.25. This registered an **average positive shift of 0.099** with the Endline average score standing at 4.35.

Trying New Things

Baseline Average Score : 4.23

Endline Average Score : 4.34

Shift in Average Score : 0.11

How to read this:
Change in score from Baseline to Endline. On average students have selected the same option at Endline which they choose at Baseline

Overall Positive Shift % : 41.3%

Overall Negative Shift % : 50.3%

Overall No-Change % : 8.4%

Positive Shift (% Males): 49.09%

Positive Shift (% Females): 50.9%

Remark : Shift in TNT scores are significant but cannot be attributed to program without further statistical tests.

Insight: The Baseline average score for Trying New Things was 4.23. This registered an **average positive shift of 0.11** with the Endline average score standing at 4.34.

*Note: Even though the shift in the scores are significant it cannot be attributed to program without further statistical tests.

Grit

Baseline Average Score : 3.23

Endline Average Score : 3.29

Shift in Average Score : 0.06

How to read this:

Negligible change in score from Baseline to Endline. On average students have selected the same option at Endline which they choose at Baseline

Overall Positive Shift % : 39.22%

Overall Negative Shift % : 51.24%

Overall No-Change % : 9.4%

Positive Shift (% Males): 46.67%

Positive Shift (% Females): 53.32%

Remark : Shift in Grit scores are significant but cannot be attributed to program without further statistical tests.

Insight: The Baseline average score for Grit was 3,23. This registered an **average positive shift of 0.06** with the Endline average score standing at 3.29.

Insights at a glance

- **Females** report a **higher positive shift** across 3 scales : **Grit, Self Efficacy, Trying New Things** as compared to males on average.
- **Males** report **higher positive shift** across 1 scale compared to females : **Independent Decision Making**.
- **Negligible change** in **overall** scores, further statistical tests required to prove attribution of scores to the program.
- Students reported highest overall score on **Self Efficacy and Trying New Things.**
- Highest Positive Shift observed cumulatively in **Independent Decision Making.**

*Note: Even though the shift in the scores are significant it cannot be attributed to program without further statistical tests.

Areas of growth have been identified in Grit and IDM (Independent Decision Making), with a progression observed as following:

SE>TNT>IDM>GRIT

Negative shifts are attributed to several factors: the absence of a benchmark for comparison, uncertainty regarding the utilization of certain tools, and psychometric shifts indicative of long-term changes, yielding credible results over an extended duration. It is important to note that negative shifts may stem from various causes, and we refrain from attributing them solely to the program.

Overall Feedback:

When asked the question "On a scale of 1 to 10 (where 1 is lowest and 10 is highest), please select the rating that most closely describes how you feel about the EMC program you participated in" the response recorded was:

80 % - Gave a score of 7 and above

62 % - Gave a score of 9 or 10

Out of the 80% students who gave a score of 7 and above, 62% from those gave an even higher score of 9 or 10.

Overall Feedback of Psychometric Test:

When asked the question "On a scale of 1 to 10 (where 1 is lowest and 10 is highest), please select the rating that most closely describes how you feel about the EMC program you participated in" the response recorded was:

80 % - Gave a score of 7 and above

62 % - Gave a score of 9 or 10

Out of the 80% students who gave a score of 7 and above, 62% from those gave an even higher score of 9 or 10.

The average overall score stands at **6.45 out of 10**, reflecting a **generally positive evaluation**. Specifically, the novelty score registers at 4.48 out of 5, while the application score ranks slightly lower at 4.32 out of 5. Participants report high levels of enjoyment with their EMC teacher, scoring 4.50 out of 5, and find EMC classes generally enjoyable, with a rating of 4.45 out of 5.

Here are some of the questions asked to the participants regarding the same and their average scores out of a maximum score of 5:

The program taught me **something new**	**4.48**
I know how to apply what I learned in this program	**4.32**
I enjoy learning from my EMC teacher	**4.50**
I found the **EMC classes and activities enjoyable**	**4.45**
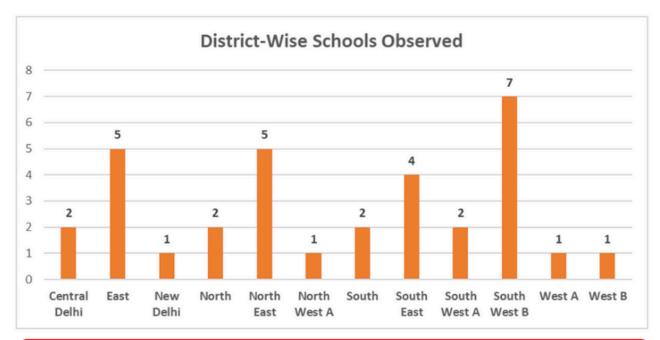
Assessment of 4Cs

A total of 182 students were observed. The overview is as following:

District-Wise Schools Observed

District	Count
Central Delhi	2
East	5
New Delhi	1
North	2
North East	5
North West A	1
South	2
South East	4
South West A	2
South West B	7
West A	1
West B	1

A total of 33 schools were observed in the endline that overlapped with the baseline

Student actions observed in the 4Cs assessment are as following:

List of positive actions:
Sharing an original idea
Rationale behind solution
Speaking up throughout
Listening to others
Asking clarification questions
Equal participation
Equal contribution
Collaborative decision making
Concise communication
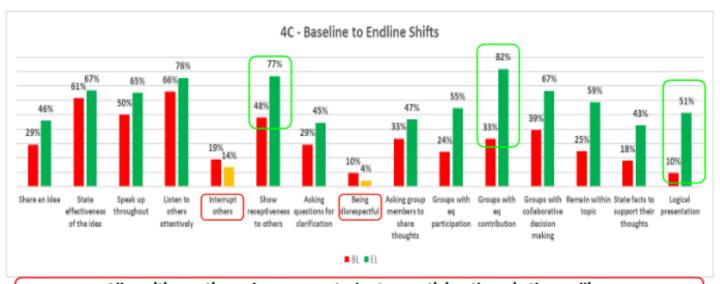
List of negative actions:
Interrupting others
Disrespectful towards others

It was found that the percentage of students showcasing positive actions has increased and the percentage of students showcasing negative actions has decreased. The findings of this assessment were:

4C - Baseline to Endline Shifts

All positive actions show _more_ students practising them in the endline.
We can also see _less_ students doing the negative actions (highlighted in red).

Top 4 actions where students have shown highest shift are:

1. Showing receptiveness to others - nodding to show understanding, taking notes for reference.
2. Equal contribution in groups - taking everyone's opinion, building discussion by considering everyone's input in the group.
3. Remaining within topic - no digression, concise and to-the-point communication.
4. Logical presentation - presentation has a logical sequence and communicates the key points effectively.

Conclusion

This study on the Entrepreneurship Mindset Curriculum (EMC) program has provided a profound understanding of its impact on students' 21st-century skills. Through comprehensive psychometric analysis, notable advancements have been observed, particularly in areas such as Grit and Independent Decision Making (IDM). These shifts, marked by a progression from Self-Efficacy to TNT to IDM to Grit, underscore the transformative nature of the program in nurturing proactive, problem-solving individuals prepared for the challenges of contemporary society.

However, our assessment also reveals instances of negative shifts, attributed to various factors including the absence of comparative benchmarks, uncertainties surrounding tool utilization, and psychometric variations indicative of long-term changes. It's imperative to recognize that such shifts may arise from diverse influences, and we refrain from solely attributing them to the EMC program. This acknowledgment underscores the complexity of evaluating educational initiatives and the need for nuanced analysis.

Furthermore, our evaluation employing the 4Cs framework underscores positive outcomes, indicating an increase in the percentage of students engaging in positive actions while witnessing a decline in negative actions. This highlights the program's efficacy in fostering desirable behaviors among students. Overall, our findings reaffirm the EMC program's significance in cultivating entrepreneurial traits, showcasing its essential role in modern education and its potential to shape the mindset of future generations.

EMC - Baseline Questionnaire

Self-Efficacy Formative Questionnaire

Statement

I can learn what is being taught in class this year. / इस वर्ष कक्षा में जो पढ़ाया जा रहा है, मैं उसे सीख सकता/सकती हूँ।

I can figure out anything if I try hard enough. / अगर मैं काफी कोशिश करूँ, तो मैं किसी भी चीज़ के बारे में पता लगा सकता/सकती हूँ।

If I practiced every day, I could develop just about any skill. / अगर मैं हर दिन अभ्यास करूँ, तो मैं किसी भी कौशल(स्किल) को विकसित कर सकता/सकती हूँ।

Once I've decided to accomplish something that's important to me, I keep trying to accomplish it, even if it is harder than I thought. / एक बार जब मैंने कुछ करने का फ़ैसला कर लिया जो मेरे लिए महत्वपूर्ण है, तो मैं उसे पूरा करने की कोशिश करता / करती हूँ, भले ही वह कितना भी कठिन क्यों न हो।

I am confident that I will achieve the goals that I set for myself. / मुझे विश्वास है कि मैं अपने निर्धारित लक्ष्यों को हासिल कर लूँगा / लूँगी।

When I'm struggling to accomplish something difficult, I focus on my progress instead of feeling discouraged. / जब मैं कुछ कठिन चीज़ को हासिल करने के लिए संघर्ष कर रहा होता / होती हूँ, तो मैं निराश होने के बजाय अपनी प्रगति पर ध्यान केंद्रित करता / करती हूँ।

I will succeed in whatever career path I choose. / मैं जो भी करियर चुनूँगा / चुनूँगी, मैं उसमें सफल होऊँगा / होऊँगी।

I will succeed in whatever course I choose in college /मैं कॉलेज में जो भी कोर्स चुनूँगा /चुनूँगी, मैं उसमें सफल होऊँगा / होऊँगी।

I believe hard work pays off. / मेरा मानना है कि कड़ी मेहनत रंग लाती है।

My ability grows with effort. / मेरी क्षमता प्रयास करने से बढ़ती है।

I believe that the brain can be developed like a muscle. / मेरा मानना है कि दिमाग को एक मांसपेशी की तरह विकसित किया जा सकता है।

I think that no matter who you are, you can significantly change your level of talent. / मुझे लगता है कि इससे कोई फर्क नहीं पड़ता कि आप कौन हैं, आप अपनी प्रतिभा के स्तर में महत्त्वपूर्ण बदलाव ला सकते हैं।

I can change my basic level of ability considerably. / मैं अपनी बुनियादी क्षमता को काफी हद तक बदल सकता/सकती हूँ।

Scale
1 = not like me at all / मेरे जैसा बिल्कुल नहीं
2=not much like me / मेरे जैसा नहीं
3=somewhat like me / कुछ हद तक मेरे जैसा
4= mostly like me / मेरे जैसा
5 = very much like me / बिल्कुल मेरे जैसा

Short Grit Scale

I often set a goal but later choose to pursue a different one. / अक्सर मै अपने लिए एक लक्ष्य निर्धारित करती हूँ पर बाद में किसी और लक्ष्य पर काम करने लग जाती/ जाता हूँ।

I have been obsessed with a certain idea or project for a short time but later lost interest. / मैं थोड़े समय के लिए एक निश्चित विचार या परियोजना (प्रोजेक्ट) पर केंद्रित रहता / रहती हूँ, लेकिन बाद में रुचि खो देता / देती हूँ।

I have difficulty maintaining my focus on projects that take more than a few months to complete / मुझे उन परियोजनाओं (प्रोजेक्ट्स) पर अपना ध्यान बनाए रखने में कठिनाई होती है जिन्हें पूरा करने में कुछ महीनो से ज़्यादा समय लगता है।

New ideas and projects sometimes distract me from previous ones / नए विचार और परियोजनाएँ (प्रोजेक्ट्स) मेरा ध्यान कभी -कभी पिछली परियोजनाओं से हटा देती हैं।

I finish whatever I begin. / मैं जो भी शुरू करता/ करती हूँ, उसे पूरा करता/करती हूँ।

Setbacks don't discourage me. / असफलताओं से मैं हतोत्साहित नहीं होता / होती।

I am diligent. / मैं मेहनती हूँ ।

I am a hard worker. / मैं कड़ी मेहनत करने वाला /वाली व्यक्ति हूँ ।

My interests change from year to year. / मेरी रुचियां साल-दर-साल बदलती रहती हैं।

I become interested in new pursuits every few months./ मुझे हर कुछ महीनों में नई खोज में दिलचस्पी हो जाती है।

I have achieved a goal that took years of work. / मैंने एक ऐसा कोई लक्ष्य हासिल किया है जिसको पूरा करने के लिए मैंने सालो तक उस पर काम किया था।

I have overcome setbacks to conquer an important challenge. / मैंने एक महत्त्वपूर्ण चुनौती पर विजय प्राप्त करने के लिए असफलताओं को पार किया है।

1 = not like me at all / मेरे जैसा बिल्कुल नहीं 2=not much like me / मेरे जैसा नहीं 3=somewhat like me / कुछ हद तक मेरे जैसा 4= mostly like me / मेरे जैसा 5 = very much like me / बिल्कुल मेरे जैसा

CASE Inventory
to measure
independent decision making
Short Grit Scale

If I have something to add to a class discussion I speak up. / क्लास में होने वाली चर्चा में अगर मुझे कुछ कहना होता है, तो मै बोलता /बोलती हूँ |

I think about the consequences of my decisions. / मैं अपने फ़ैसलों के अंजाम के बारे में विचार करता/करती हूँ।

I look at every situation from other people's perspectives before making my own judgments. / मैं कोई धारणा बनाने से पहले हर स्थिति को दूसरे लोगों के नजरिए से भी देखता/ देखती हूँ।

When I disagree with others I share my views. / जब मैं दूसरों से असहमत होता/होती हूँ तो मैं अपने विचार साझा करता/ करती हूँ।

I need family members to approve my decisions. / मुझे अपने फ़ैसलों के लिए परिवार की स्वीकृति की जरूरत होती है।

I think of all possible risks before acting on a situation. / मैं किसी स्थिति पर कार्य करने से पहले सभी संभावित जोखिमों के बारे में सोचता/ सोचती हूँ।

I like to evaluate my daily actions. / मुझे अपने दैनिक कार्यों का मूल्यांकन करना पसंद है।

I consider alternatives before making decisions. / मैं निर्णय लेने से पहले विकल्पों पर विचार करता/करती हूँ।

I stand up for what I think is right regardless of the situation. /मैं स्थिति की परवाह किए बिना जो मुझे सही लगता है, उसके लिए खड़ा होता/ होती हूँ।

I think about how my actions will affect others. / मैं सोचता/ सोचती हूँ कि मेरे कार्यों का दूसरों पर क्या प्रभाव पड़ेगा।

I think about how my actions will affect me in the long run. / मैं सोचता/ सोचती हूँ कि लंबे समय के बाद मेरे कार्यों का मुझ पर क्या प्रभाव पड़ेगा।

I like to evaluate my thoughts. / मुझे अपने विचारों का मूल्यांकन करना पसंद है।

I feel that my opinions are valuable enough to share. /मुझे लगता है कि मेरे विचार साझा करने के लिए काफ़ी मूल्यवान हैं।

I need my views to match those of my parents. / मुझे अपने विचारों को अपने माता-पिता के विचारों के साथ मैच (मेल) करने की ज़रूरत है।

I am good at identifying my own strengths. / मैं अपनी सामर्थ्य की पहचान करने में अच्छा/ अच्छी हूँ।

It is important to me that my friends approve of my decisions. / मेरे लिए यह महत्त्वपूर्ण है कि मेरे मित्र मेरे निर्णयों को स्वीकार करें।

There are consequences to my decisions. / मैं ये समझता /समझती हूँ कि मेरे फ़ैसलों का कोई एक अंजाम होगा ।

I can tell that my way of thinking has improved with age. / मैं कह सकता हूँ कि उम्र के साथ मेरे सोचने के तरीके में सुधार हुआ है।

At school I keep my opinions to myself. / स्कूल में मैं अपनी राय अपने तक ही रखता / रखती हूँ।

I think more about the future today than I did when I was younger. / जब मैं छोटा था तब भविष्य के बारे में जितना सोचता था, उससे कहीं अधिक मैं आज सोचता हूँ।

I am best at identifying my abilities / मैं अपनी क्षमताओं की पहचान करने में सर्वश्रेष्ठ हूँ।

My decision making ability has improved with age. / उम्र के साथ मेरी निर्णय लेने की क्षमता में सुधार हुआ है।

I need my views to match those of my friends. / मुझे अपने विचारों को दोस्तों के साथ मिलाने की ज़रूरत है।

I am good at evaluating my feelings. / मैं अपनी भावनाओं का मूल्यांकन करने में अच्छा / अच्छी हूँ।

I am better at decision making than my friends. / मैं अपने दोस्तों की तुलना में निर्णय लेने में बेहतर हूँ।

I care about what others think of me. / मुझे इस बात की परवाह है कि दूसरे मेरे बारे में क्या सोचते हैं।

I am the best judge of my talents. / मैं अपनी प्रतिभा का सबसे अच्छा जज हूँ।

1 = not like me at all / मेरे जैसा बिल्कुल नहीं 2=not much like me / मेरे जैसा नहीं 3=somewhat like me / कुछ हद तक मेरे जैसा 4= mostly like me / मेरे जैसा 5 = very much like me / बिल्कुल मेरे जैसा

SRIS

I am usually aware of my thoughts / मैं आमतौर पर अपने विचारों से अवगत हूँ।
I'm often confused about the way that I really feel about things / मैं अक्सर इस बात को लेकर भ्रमित रहता / रहती हूँ कि मैं वास्तव में चीज़ों के बारे में कैसा महसूस करता/करती हूँ।
I usually have a very clear idea about why I've behaved in a certain way / मेरे पास आमतौर पर एक बहुत स्पष्ट विचार है कि मैंने एक निश्चित तरीके से व्यवहार क्यों किया है।
I'm often aware that I'm having a feeling, but I often don't quite know what it is / मुझे अक्सर पता चलता है कि मैं महसूस कर रहा हूं, लेकिन मैं अक्सर यह नहीं जानता कि यह क्या है।
My behavior often puzzles me / मेरा व्यवहार अक्सर मुझे हैरान करता / करती है।
Thinking about my thoughts makes me more confused (R)
अपने विचारों के बारे में सोचना मुझे और अधिक भ्रमित करता है (R)
Often I find it difficult to make sense of the way I feel about things (R)
अक्सर मुझे यह समझने में कठिनाई होती है कि मैं चीजों के बारे में कैसा महसूस करता हूँ (R)
I usually know why I feel the way I do
मैं आमतौर पर जानता हूँ कि मैं जैसा महसूस करता हूँ, वैसा क्यों महसूस करता हूँ

Scale
1 = strongly dis-agree
2 = disagree
3 = disagree slightly
4 = agree slightly
5 = agree
6 = strongly agree

1 = पूरी तरह असहमत
2 = असहमत
3 = थोड़ा असहमत
4 = थोड़ा सहमत
5 = सहमत
6 = पूरी तरह असहमत

Trying New Things

I seek out situations where it is likely that I will have to think in depth about something. / मैं ऐसी स्थितियों की तलाश करता/करती हूँ जहाँ यह संभावना हो कि मुझे किसी चीज़ के बारे में गहराई से सोचना पड़े।

I enjoy learning about subjects that are unfamiliar to me. / मुझे उन विषयों के बारे में सीखना अच्छा लगता है जो मेरे लिए अपरिचित हैं।

I find it fascinating to learn new information / मुझे नई जानकारी सीखना आकर्षक लगता है।

The smallest doubt can stop me from seeking out new experiences. / एक छोटा सा संदेह मुझे नए अनुभवों की खोज करने से रोक सकता है।

I cannot handle the stress that comes from entering uncertain situations. / मैं उस तनाव को नहीं सँभाल सकता/सकती जो अनिश्चित परिस्थितियों में होने से आता है।

I find it hard to explore new places when I lack confidence in my abilities. / जब मुझे अपनी क्षमताओं पर पूरी तरह से विश्वास नहीं होता, तब मुझे नई जगहों के बारे में पता लगाना मुश्किल लगता है।

It is difficult to concentrate when there is a possibility that I will be taken by surprise. / मेरे लिए तब ध्यान केंद्रित करना मुश्किल होता है जब संभावना हो कि मैं किसी चीज़ से आश्चर्यचकित हो जाऊँ।

1 - Does not describe me at all / मेरा बिल्कुल भी वर्णन नहीं करता
2 - Barely describes me / बमुश्किल मेरा वर्णन करता है
3 - Somewhat describes me / कुछ हद तक मेरा वर्णन करता है
4 - Neutral / तटस्थ (न्यूट्रल)
5 - Generally describes me / कुछ कुछ मेरा वर्णन करता है
6- Mostly describes me / काफी हद तक मेरा वर्णन करता है
7 - Completely describes me / मेरा पूरी तरह से वर्णन करता है

Goal Questions

Is there a goal you have set for yourself?/ क्या आपने अपने लिए कोई लक्ष्य निर्धारित किया है?
What is this goal? /यह लक्ष्य क्या है?
Why is this goal something you value? /यह लक्ष्य आपके लिए मूल्यवान क्यों है?
What is the one action step you need to take to achieve this goal? इस लक्ष्य को प्राप्त करने के लिए आपको कौन सा एक क़दम उठाने की आवश्यकता है?

Yes / No

Demographic Questions

How many people are usually there in your household? /आपके घर में आमतौर पर कितने लोग होते हैं?

What is the highest level of education completed by your mother (or female caregiver)? /आपकी माँ (या महिला देखभालकर्ता) द्वारा पूर्ण की गई शिक्षा का उच्चतम स्तर क्या है?
Post-graduation / Graduation / 12th Standard / 10th Standard / 8th or below

What is the highest level of education completed by your father (or male caregiver)? /आपके पिता (या पुरुष देखभालकर्ता) द्वारा पूर्ण की गई शिक्षा का उच्चतम स्तर क्या है?
Post-graduation / Graduation / 12th Standard / 10th Standard / 8th or below

Do you have a personal mobile / smartphone?/ क्या आपके पास निजी मोबाइल/स्मार्टफोन है?
Yes / No

4Cs Observation Manual

Introduction

The EMC program is a hands-on entrepreneurial mindset program which gives our participants an opportunity to try to develop essential mindsets and skills through the experience of "doing" a real business. Some of these skills include the 21st century life skills of Communication, Collaboration, Critical Thinking and Creative Thinking.

This manual has been created to set out the methodology by which we seek to understand the development of the 21st century life skills of Communication, Collaboration, Critical Thinking and Creative Thinking, through the program.

21st Century Skills

An overview of the 21st Century skills that are learning outcomes in EMC, is set out below:

Creative Thinking

The skill enablers learners to generate multiple original and innovative ideas and alternatives, which are viewed as meaningful by others

Communication

The skill enables learners to present ideas and information with clarity, in a logical sequence and persuasively. It also includes skills for keeping a conversation going such as turn taking and listening attentively to others.

Critical Thinking

The skill enables learners to organise information from different sources by identifying patterns, recognize links between ideas, analyse arguments and evidence, to arrive at conclusions.

Collaboration

The skill enables learners to work effectively and respectfully with diverse teams, exercise flexibility, accomplish a shared goal, and assume a shared responsibility while valuing individual contributions of team members.

MEASURING 4Cs

The observation of the abovementioned skills in learners will be undertaken in the following manner:

(a) Learners' actions and statements (i.e., what learners do and say) will be **observed.**
(b) The actions and statements to be observed will be **during a task.**
(c) The task will be **a group task**, i.e., the task will need to be given to a group of 6-7 learners.
(d) Actions and statements will be observed both at the **group level,** as well as the **individual learner level.**
(e) Only one group in each class in each school will be observed (**sample**).
(f) The task will be conducted post a session/outside the class.
(g) The observation will need to be done at the **beginning of the program** (post either the first or second session) and **at the end of the program.**

As an observer, your role will include the following:

(a) **Setting up time** with the teacher and co-ordinating on when the observation should be done;
(b) **Selecting the students** who will be participating in the observation;
(c) Sharing the task and **conducting the observation**;
(d) **Recording observations** in the template below, during the observation; and
(e) **Recording the observations** online on the link provided.

The sections below detail who should be observed, what should be observed and how observations should be done.

WHO TO OBSERVE?

The observation will need to be done with only **one** group of 6-7 students in one class/section in every school that you are allotted. To decide which students should form a part of the group, please follow the steps below on the day on which the observation is scheduled:

(a) Observe the classroom in a session - this can be done on the same day of observation (prior to conducting the observation).
(b) Make a note of participants that are answering questions/asking questions/being participative in class.
(c) Make a note of students that are seeming distracted and are not following what is happening in the class.
(d) Select the 6-7 students by including 50% students who were being participative and 50% students who seemed distracted.
(e) In case of co-ed classrooms, ensure that the group has an equal number of girls and boys.

HOW TO OBSERVE

Space for Observation

Once the group has been created, identify a space/area free from distractions, where the task can be shared and the group can engage with the task.

Context Setting

Before sharing the task, take 5 minutes to set context for the students:

(a) Begin by informing the students that they will be participating in a group task and that you will be a silent observer.
(b) Emphasize that this is not a test or assessment of any kind and there are no grades/marks attached to this task. The students should feel comfortable and engage with the task in the same manner as they would have if the task were shared in the classroom.

(c) Share with the students that this task will have two parts – a period of 45 minutes when the group will discuss amongst themselves and a period of 15 minutes when the group will present what was discussed.

(d) Ask the learners if they have any questions and clarify their queries. Remind them to be themselves and feel comfortable :)

(e) DO NOT PARTICIPATE IN THE TASK OR HELP THE STUDENTS

Share the Task

(a) Share the following task with the group:

"You all notice that homes around you are not segregating their waste into dry waste (paper, plastics, etc.) and wet waste (fruit and vegetable peels, food items), as required by the municipality. This is causing problems in waste management by the municipality. Discuss amongst yourselves and present a plan, through which you, as a group, think that this problem can be worked on. **Also explain** *why you think so. You have 45 minutes to come up with this plan. At the end of this time I would like you to present your idea(s) and why you think it is/they are the best idea(s). The presentation can be done by one or more members of the group, and you all should decide how many and who should present "*

(b) Clarify any questions that the learners have. Repeat the task if needed.
(c) Inform the students that they now have 45 minutes to discuss and decide what they will present.

OBSERVATION CHECKLIST

Your (Observer) Name	
Name of the School	
School ID	
EMC Co-ordinator's Name	
Class and Section	
EMC Teacher's Name	

When the group is discussing on the task, **circle yes or no**, for the following, based on what you are seeing the **learners say and do**:

Name of the Student / Student ID	<Student 1 Name >	<Student 2 Name >	<Student 3 Name>	<Student 4 Name >	<Student 5 Name>	<Student 6 Name >	<Student 7 Name >	Group
WHEN STUDENTS ARE SHARING IDEAS								
The student shares at least **1 original /innovative idea**	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
Mention the idea shared by the student								

Below are the Links of the detailed Analysis master Link:

EMC - Baseline Overview

https://docs.google.com/presentation/d/1HoKgGKfjU4bZ3FlZSj8UZFgK0DPzFfR/edit?usp=sharing&ouid=114565827750943233656&rtpof=true&sd=true

EMC - Baseline Questionnaire

https://docs.google.com/presentation/d/1_co5LJa3gcUv33F11g01cv1MkSEUhVGV/edit?usp=sharing&ouid=114565827750943233656&rtpof=true&sd=true

For the 4C observation

https://drive.google.com/file/d/19QVJuw8c-EU1EpYTWOo4G8ZyTbtfhsxA/view?usp=sharing

EMC - 4C Observation Results

https://docs.google.com/presentation/d/1U1r2t1xTkgGO3B3gYzr_6z3P-zv1z7wR/edit?usp=sharing&ouid=114565827750943233656&rtpof=true&sd=true

EMC Psycometric Shift Analysis (22-25)

https://docs.google.com/presentation/d/12or0X1TUuOWuLPcXHksIQnV5zIDgundX/edit?usp=sharing&ouid=114565827750943233656&rtpof=true&sd=true

The student adequately identifies and shares **why they think their solution might work** (eg: if the student says that they could send it through pamphlets in newspapers, they should justify that this would work because a lot of households subscribe to newspapers)	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
DURING THE ENTIRE DISCUSSION								
The student speaks up **throughout**	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
When others are speaking, the student is **listening attentively** (nodding in agreement, making eye contact, etc.)	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
When others are speaking, the student **interrupts them**	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
When others are speaking, the student **shows receptiveness** to what others are saying (builds off what they are saying - uses statements like "I agree with what X is saying. We could also...", or in case of disagreement, explains himself/herself - uses statements like "I do not agree because...")	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.

The student **asks questions to seek clarification** on what others are saying (eg: "are you saying that....?", "do you mean that.....?", "could you explain.....?")	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
The student is **not respectful** (speaking aggressively and not in a calm and composed manner) when responding to what others are saying	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
The student asks others in the group to share their opinions/thoughts or speak-up	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
Group discussion **sees equal participation** by all students	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Yes / No
Discussion in the group develops by considering **what all students are sharing** (Difference with the one above is that while everyone could be sharing, in a non-collaborative work group, the conversations proceed in the direction of what 1-2 students are sharing).	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Yes / No
WHEN DECIDING WHO WILL PRESENT								
The group (and not 1-2 students) decides who will present	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Yes / No
DURING THE PRESENTATION *Please mark this against the presenting student's name. If more than one student is presenting, please mark this separately for each of the presenting students*								
All of what the student is saying **points towards the finalised idea**	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
The student **talk about facts/evidence in support of what she/he is sharing** to	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.
clarify why the idea is being suggested and why it would work								
The student's presentation has a **logical sequence**	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	N.A.

THANK YOU!