Impact of the "Fly for the Future" Program

WeRobotics' Experience Using the "Most Significant Change" Evaluation Technique

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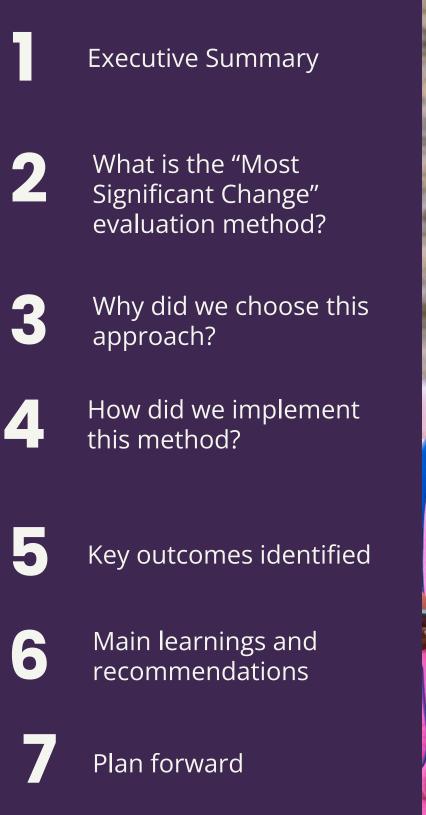**Cover:** School children in rural school in Kenya and a drone flying over, photo by Kenya Flying Labs

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Executive Summary

The report explores how WeRobotics utilized the Most Significant Change (MSC) evaluation technique to assess the outcomes of its "Fly for the Future" program. Implemented in collaboration with seven Flying Labs, the program aimed to inspire over 2,500 youths to pursue STEM education through drone training, mini youth-led projects, and STEM fairs. While traditional data collection methods like baseline and endline surveys were initially used to monitor and evaluate the program, their implementation was hindered by logistical challenges, COVID-19 delays, and the diversity of the participant contexts. Consequently, the MSC story-based evaluation approach was adopted to overcome these limitations by capturing nuanced, participant-driven narratives of the program's impact.
We also believe that by implementing this transformative method, we can share what is behind each number – a powerful story of change, recounted by the participants themselves, whose voices often are unheard, and which is crucial in changing mindsets and systems.

Our key findings

1. **Increased Employment Opportunities**: About 30% of participants reported career advancements, with some gaining jobs or using drone skills for income-generating activities.
2. **Enhanced Confidence and Self-Belief**: Two-thirds of participants shared stories of personal growth, citing new-found self-confidence and empowerment.
3. **Improved Soft Skills**: The majority of participants reported developments in teamwork, communication, and problem-solving abilities.
4. **Mindset Shifts**: Participants highlighted broader perspectives on using technology to address societal challenges, fostering a sense of purpose as innovators.

Implementation Insights

- **Methodology**: Stories were collected via interviews and self-reporting, employing a "maximum variation sampling" strategy to reflect the diverse backgrounds of participants. A deliberation workshop was organized to analyze the stories and open dialogue among Flying Labs members.
- **Challenges**: Language barriers, technological issues, and participant hesitancy during interviews were mitigated through follow-ups and contextual adjustments.

Learnings and Recommendations

- Flexibility in evaluation methods ensures adaptability to local contexts.
- Training local partners in conducting MSC interviews and ensuring they are fluent in participants' languages fosters clearer communication.
- Personalized engagement with participants enhances storytelling depth.

Future Plans

We aim to expand the MSC approach to other programs, refine evaluation tools, and support Flying Labs in applying this technique for sustainable impact measurement. By integrating MSC, WeRobotics highlights the transformative potential of drones and technology, shaping the futures of young innovators worldwide.

What is the "Most Significant Change" (MSC) evaluation method?

In 1994, Rick Davies faced the task of assessing the impact of an aid project on 16,500 people in western Bangladesh. Due to the significant diversity of viewpoints among stakeholders on the ideal expected results of the project, the conventional approach of agreeing on a set of indicators was considered impractical. In response to this challenge, Davies designed the "Most Significant Change" evaluation method. Departing from the traditional monitoring and evaluation system, which mainly relies on predefined quantitative metrics, the Most Significant Change evaluation method focuses on identifying unexpected outcomes and significant changes resulting from development programs by uncovering underlying assumptions and worldviews of stakeholders. It does so by collecting significant change stories from program participants and by creating dialogue among relevant stakeholders. The stories capture how and when these changes are happening and why they are important. MSC is a participatory technique because collecting and analyzing the data (stories) involves program stakeholders at different levels.

Similar to the challenge faced by Rick Davies when he initially developed this method, the complexity of evaluating the results of a three-year-long youth program implemented in seven different countries led us to explore and implement the MSC technique. This report shares our experience using this evaluation method, the key outcomes, lessons learned, and our plan moving forward.

Why did we choose this approach?

In late 2023, we completed "Fly for the Future", a three-year-long youth program in collaboration with local instructors from seven Flying Labs. The "Fly for the Future" program aimed to reach youths in vulnerable areas and motivate them to pursue higher education and careers in STEM fields by conducting drone training sessions, running mini-projects, and holding STEM fairs – all led and organized by Flying Labs instructors. Through this program, the participating Flying Labs trained over 2,500 youth through 288 training and youth-led project sessions.

As part of the M&E framework, we conceived a Theory of Change at the beginning of the program with predetermined indicators to measure outcomes. The main data collection method determined was using baseline and endline questionnaires. Baseline data was to be collected from all program participants at the beginning of the program in 2021, and an endline questionnaire was planned to be completed two years after the initial youth engagements for impact evaluation. However, we encountered several challenges throughout the cycle of the program when implementing this method:

- Due to COVID-19 and political instability in some countries, Flying Labs experienced major delays with their program implementation. As a result, it was mainly in Year 2 (2022) and Year 3 (2023) that they could carry out one-off training sessions. This meant that doing the endline questionnaire was no longer relevant.
- Furthermore, Flying Labs instructors shared that getting the students to fill out the questionnaire was time-consuming and impractical. This was because in some cases, students couldn't understand the questions well and required translation or additional explanation. They also had to take turns filling them out via a shared device (tablet or smartphone). In addition, during some of the training, there was no Internet connection, which required Flying Labs to collect the data offline. As a result, the instructors had to manually enter it into our database afterward.
- Flying Labs had different priorities and expertise concerning their youth programs. For instance, some Flying Labs engaged mainly younger target groups, from 10 to 15 years old. In comparison, others focused on providing professional experience for students aged above 18 years old through youth-led projects and internship opportunities. This meant that our questionnaire approach, with the same questions for all participants, was not well adapted to the diverse target groups and contexts where the program was implemented.

As such, while we continued to collect the basic data of all program participants for monitoring purposes via attendance records, videos, and photos, we began to explore more innovative and flexible ways of measuring our program's impact. We identified the Most Significant Change (MSC) as an evaluation approach suitable to our program. It allowed us to capture any kind of changes occurring in the participants' lives beyond our predetermined outcomes, and this aligned with the diversity of contexts and backgrounds of the participants. It also created a dialogue among Flying Labs instructors on the kind of outcomes that they value and consider significant.

How did we implement the MSC evaluation method?

1

Designing phase

As a first step in designing the implementation of this methodology, we developed the MSC resources, including the MSC collection template and introductory guidelines document for Flying Labs. It was followed by a call to introduce the MSC approach to Flying Labs, one-on-one discussions, and plan with Flying Labs on how and when to collect the MSC stories

Sampling strategy: We opted for the "maximum variation sampling" strategy. This purposeful sampling strategy aims to capture the central outcomes emerging across diverse program participants and contexts. Any common patterns that emerge from such great variation can demonstrate the program's real impact beyond contextual differences. This was due to the following reasons:

1. Varying local contexts, languages, and cultures
2. Different focuses in terms of age groups across Flying Labs
3. Different youth program curriculums such as training sessions, internship programs, and mini youth-led projects.

Timeline: We planned to collect all Most Significant Change stories from October to December 2023. However, some Flying Labs experienced delays in scheduling the interviews due to school calendars, students' availability, and work schedules. Therefore, we adjusted our plan to fit the contexts of individual Flying Labs and completed our collection in January 2024. An online workshop to deliberate on the stories was organized in late January 2024, followed by an in-depth analysis of the MSC stories for reporting.

2

Implementation phase

Data collection methods: We deployed three main methods for MSC story collection given the different capacities and availabilities of Flying Labs:

- In-person interviews completed by Flying Labs instructors
- Online interviews over Zoom by WeRobotics in collaboration with Flying Labs
- Self-reporting by students themselves via a Google form shared by Flying Labs.

34 MSC stories (20 male and 14 female) were collected. The " storytellers " age range was from 12 to 27 years old, with 6 students aged 12–14, 3 students aged 17–18, and 25 students aged 19 and above. In-person and online interviews lasted for 10–20 minutes each. Online interviews were organized on Zoom, recorded, and then transcribed. Some of the self-reported stories were in French.

Several challenges were faced during the data collection process. During the online interviews, the storytellers were unfamiliar with WeRobotics' M&E lead, and therefore some students were too shy to express themselves while others faced a language barrier. This limited the interaction between the storyteller and interviewer. A few self-reported stories lacked sufficient detail. In addition, Internet connection was sometimes an issue during the online interviews, which made the process lengthy.

Nevertheless, we addressed these challenges in various ways. For instance, when a student self-reported a short story, an online interview was conducted to gain more details. Flying Labs also did follow-ups after the in-person interviews when needed. In this way, we collected various content-rich MSC stories.

3

Deliberation phase

One of the main goals of the MSC technique is to open dialogue among program stakeholders by discussing significant changes. In this regard, we organized an online workshop involving all participating Flying Labs instructors to deliberate on the MSC stories collected.

The process involved working in smaller groups to discuss and deliberate on several randomly assigned MSC stories, identifying key domains of changes (areas where changes are observed, such as academic life), and selecting one most significant story among them. Flying Labs instructors were intrigued to observe the similarities of changes expressed by youths across different countries. In some cases, when an instructor came across a story from one of their students (the storyteller), the instructors provided background information about them to other Flying Labs to enrich the discussion. The key aspect of these exchanges was asking what kind of change would be considered "significant" to Flying Labs and youths.

A key challenge with this process was the time required to read through and discuss every story collected, especially since there were 34 stories to deliberate on. At the end of the workshop, we narrowed it down to 10 "Most Significant Change" stories that Flying Labs voted for as the "strongest" stories among the 34 stories collected. As a follow-up, we asked Flying Labs instructors to vote for their "favorite" story among the 10 via a Google form. The story shared by a 23-year-old male participant from Morocco "Making a positive contribution to the world as a young innovator" has been voted as the "Most Significant" change story by most Flying Labs.

Key outcomes identified

An in-depth analysis of the MSC stories was completed using the software Nvivo. Stories were analyzed for emerging patterns, principal themes, and keywords. Beyond our predetermined impact and outcome indicators, we have identified the following additional impacts our program is having in youths' lives and perspectives.

1

Increased employment opportunities

Eleven program participants interviewed (around 30% of all interviewees) reported professional development at various levels through their MSC stories. For instance, Martin Aborgeh from Ghana shared that he was able to apply to STEM-related job opportunities after the training. A few other participants got hired by local companies to pilot a drone. As a result, they gained additional income. Furthermore, they also had an opportunity to conduct academic research and implement various projects using their drone knowledge and skills.

"After my training, as I got a little bit of knowledge about drones and learned how to fly them, I got called to different events and was hired to use drones to record their events. It has helped me a lot to save up. Now I think I can afford to go to college because I managed to save up quite a bit and it was all thanks to the drone training I attended. So it has helped me a lot. Now I can't wait to start college."
Storyteller #22, 21 years old, female, Zimbabwe

"One of the most significant changes I have experienced as a result of my engagement with Flying Labs is the development of my confidence and self-belief. Before Flying Labs, I was a shy and introverted person. I was afraid to speak up in class or share my ideas with others. But Flying Labs taught me that my voice matters and that I have something valuable to contribute."
Storyteller #7, 20 years old, male, Kenya

2

Enhanced self-confidence and self-belief

Out of the 34 stories, in 21 stories, students shared how the youth program has helped them to increase their self-confidence in one way or another. Through gaining new skills and knowledge, youths shared that they applied to job positions that they hadn't considered before, and they felt more empowered and confident that they were able to solve challenges in their communities.

3

Improved soft skills

One-third of the students interviewed expressed how the youth program has helped them develop their teamwork, decision-making, critical thinking, problem-solving, and communication skills. They also indicated that they have been sharing their knowledge and skills with their friends and community members for free. This demonstrates the ripple effect of our program.

"I work in a team. Every team member has a different role so we have to effectively communicate within our team for our drone operations. I am the flight operator and I also take care of the logbook, and battery maintenance. It is nice to be part of a team. I had never worked in a team before."
Storyteller #27, 21 years old, female, India

4

Mindset shift

Beyond the improved technical knowledge, soft skills, and better access to employment opportunities, a broader mindset shift has been observed among the students interviewed. They shared that the training experience has widened their future horizons and perspectives regarding their role as youth in tackling challenges in their communities using new technologies. When asked why these changes are important to them, the ability to contribute to solving local problems and creating positive impacts in their communities was revealed to be of major importance to the youths interviewed. Watch the impact story shared by one of the program participants from Zimbabwe Flying Labs here.

"This change is of paramount importance to me as it has broadened my vision of the role I can play as a young innovator in solving global problems. The possibility of combining drone technology with artificial intelligence for environmental preservation initiatives has given me a significant sense of purpose and reinforced my belief that technological innovation can be a powerful driver of social and environmental progress."
Storyteller #13, 23 years old, male, Morocco

Main learnings and recommendations

- **Allow for flexibility**

Flexibility was one of our key learnings in implementing our M&E framework for this three-year-long multi-country program. The same applies to our experience with the MSC story-based evaluation. Depending on the Flying Labs' capacity and availability, we needed to adopt different methods to collect MSC stories. Furthermore, instead of staying rigid in measuring the pre-determined outcomes that "we" set up, MSC stories allowed us to learn about significant outcomes and impacts occurring in students' lives from their perspectives.

- **Have a local language speaker trained in MSC**

While most of our interviews were conducted in English, in some cases, participants couldn't speak well in English. In these cases, local instructors had to do a translation and we needed to double-check whether the participant understood our question. Therefore, having a native speaker trained in conducting MSC story interviews is crucial, especially if we want to reach out to those in vulnerable situations as people can express themselves more freely in their local languages.

- **Get creative with your questions**

The MSC approach encourages a few open-ended questions from program participants such as "What is the most significant change you have experienced so far?". However, we found out that asking additional questions to help the "storyteller" to go in-depth and elaborate their stories further was helpful. In this process, having a local language speaker who is familiar with both the program and the "storyteller" was a key. In addition, depending on the background of the participants, some questions were reformulated adapting to their contexts.

- **Get to know your "storyteller"**

As the most significant change stories are personal, we learned that if the interviewer already knows the participants before the MSC interview, they felt more comfortable sharing their stories in detail. If this was not the case, then we spent time first getting to know the participants by casual conversation to make them feel more at ease.

- **Familiarize yourself with the stories in advance**

Regarding the deliberation process of the stories, it is highly recommended that relevant stakeholders get familiar with the stories in advance of the workshop as reading stories and discussing them is a lengthy process.Flying Labs instructors on the kind of outcomes that they value and consider significant.

Plan forward

Since our initial experience of implementing the MSC story-based technique for the "Fly for the Future" program earlier this year, we have started using it for our other various programs such as "Turning Data Into Action". Furthermore, we are also supporting Flying Labs to carry out this technique to monitor and evaluate their project impacts in the future by creating further tools and resources.

Diana Banda, a Zimbabwe Flying Labs instructor who implemented the MSC technique in person expressed:

"I think personally, it also helped me to reflect on what we did right and where are the areas that we need to improve and change. Especially this most significant change exercise. It's a very reflective exercise... Conducting the Most Significant Change interviews was very daunting, but it was the most genuine, authentic feedback... And it got the students to think about how it affected them. So for me, that tool, going forward, it's something that I would like to implement in more of our projects, especially, from stakeholders, like teachers, and parents."

We believe that continuing to collect Most Significant Change stories from Flying Labs as well as their program stakeholders will bring us invaluable insights about the changes that emerging technologies such as drones and drone data are bringing into people's lives. Furthermore, it will help us better understand the varying expectations and values driving the Tech4Good industry and foster dialogue among different actors.
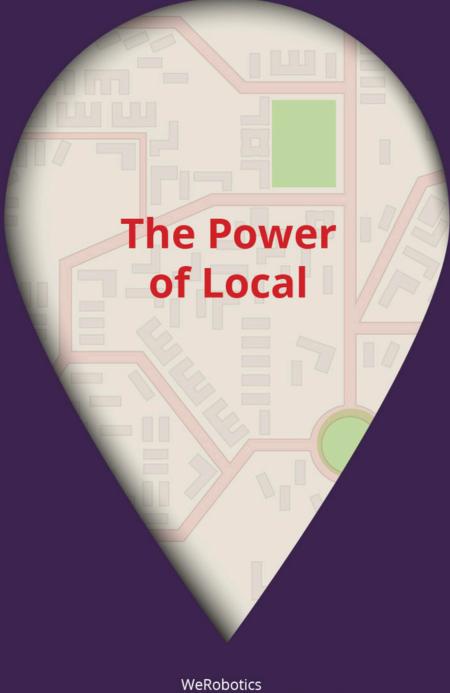
The Power of Local