



# SOCIAL DREAMING

FROM INQUIRY TO INSIGHT

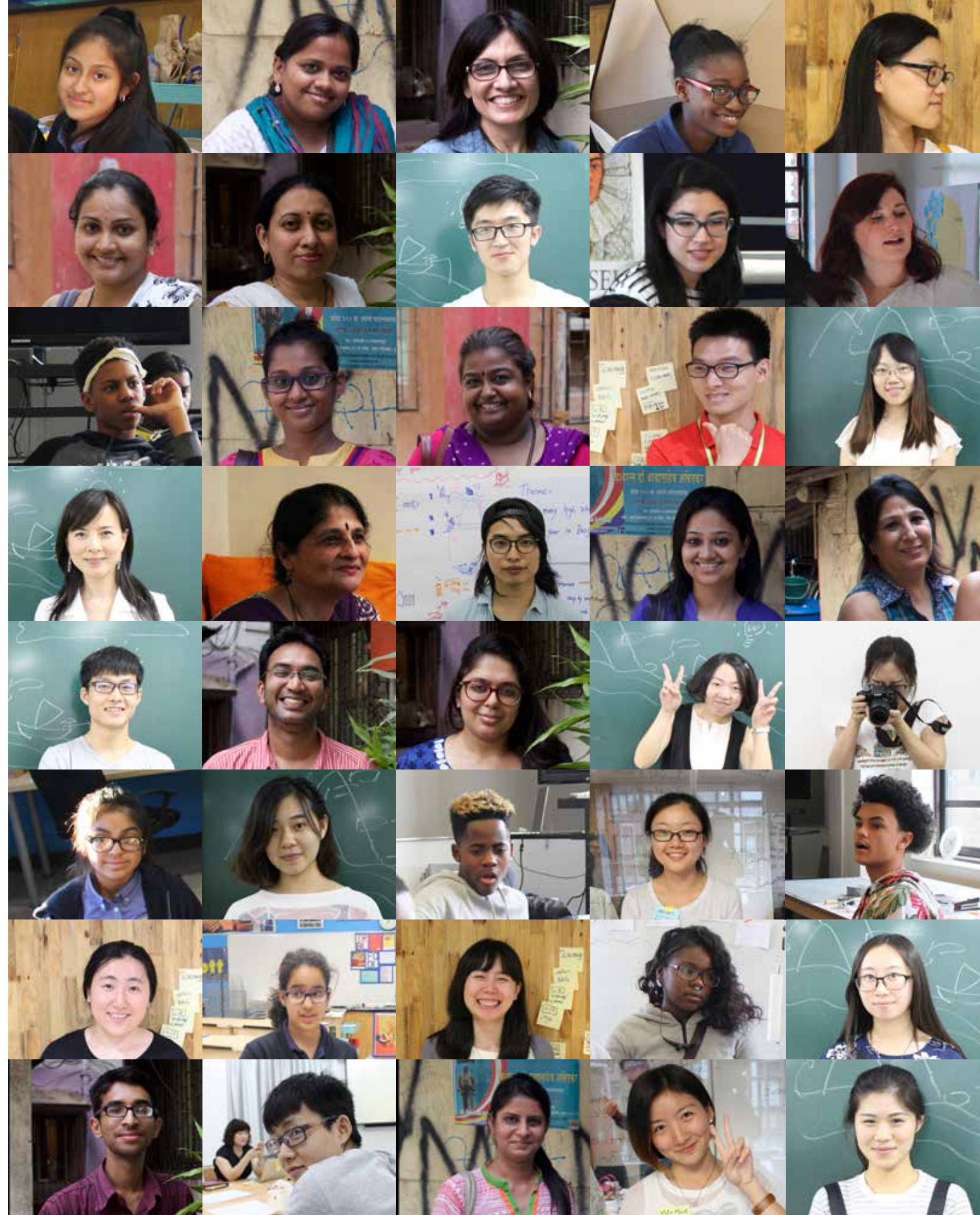
Ricardo Dutra Gonçalves

Ricardo Dutra Gonçalves  
Thesis book presented to the  
MFA Transdisciplinary Design Program

School of Design Strategies  
Parsons School of Design –  
The New School

[www.flipitforward.org](http://www.flipitforward.org)  
[www.ricardo-dutra.com](http://www.ricardo-dutra.com)

New York, 2016



*“It’s hard to say what today’s dreams are; it seems they have been downgraded to hopes – hope that we will not allow ourselves to become extinct, hope that we can feed the starving, hope that there will be room for us on this tiny planet. There are no more visions. We don’t know how to fix our planet and ensure our survival. We are just hopeful (...). Alternatives are what we need. We need to dream new dreams for the 21st century as those of the 20th century fade. But what role can design play?”*

**Dunne & Raby**, *Speculative Everything*

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## ACKNOWLEDGMENTS

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Incredibly grateful,

Ricardo Dutra.

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## ABSTRACT

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This study presents how co-participatory design, design futuring and social-emotional learning can support students, teachers and school leadership investigate their sense of agency and possibility – in which students are empowered to create the futures they want to be a part of. This project was created around the concept of social dreaming and the question of how we might democratize learning from teacher-centered to student-led and create time for sense-making within classrooms. It was developed through the insights collected from seven workshops in three countries (India, China, and the U.S.) and a series of prototypes with middle schools in New York City, during the year 2015/16. It uses model-making and systems thinking to translate insights into design principles, and then, prototypes. It ultimately positions the role of design in supporting the creation of systems of learning that are based on the emerging future, through which, learners have the opportunity of exploring and understanding how they can become a part of the story of the future rather than holding onto and embodying the story of the past.

**KEYWORDS:** social dreaming, co-participatory design, design futuring, social-emotional learning, generative tools, K-12 education.

I am a designer with a background in social innovation. I am from Brazil and spent most of my life working on projects in developing countries such as Brazil, India, Nepal and Malaysia. Hence, I look at my design practice through the lens of social entrepreneurship – which is driven by passion and the belief that we engage with the world from a place of agency – which hence requires a point of view.

That, to some extent, contrasts to the mindset of *removing oneself* out of context while doing design research and ultimately, building an artifact. As a designer and social entrepreneur, I see my engagement provokes change which I am responsible for. Hence, creating change is a non-negotiable in my practice – which implies that there's an element of vision in every statement, and that every moment is embedded with intention.

That is why blending in-depth inquiry and research, with implementation of a project is so critical to me. In my view, they are a part of a spectrum of creation of change. The question is what change is that? With speculative design, I added a layer to my understanding of agency as I learned the value of discussing implications.

I am also an engineer by education. I am a lover of models, systems and variables. I naturally organize my thinking from a place of model making, which allows me to make sense of the world. These models, however, are not to be stated as final takes on social reality, but rather as stepping stones for moving forward.

In my practice, I understand systems to have leverage points and also areas of intersection (or situated junctions<sup>1</sup>) – and in my work, I try to intervene in variables while watching their effect on the system.

I wish to locate my design practice in the learning space – particularly in education. I believe the way we learn is a powerful leverage of our social systems. And at the core of that experience, is one's ability to give meaning and sense to the world. I wish to locate the construction of meaning at the core of real world learning and, hence, design experiences, artifacts and interactions that can potentially add positive value to people's capacity to construct reality.

For more details on ongoing projects and collaborations:  
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Fig.1: graduate students at the Transdisciplinary Design Studio, at Parsons The New School for Design, New York

*“As creators of models, prototypes and propositions, designers occupy a dialectic space between the world that is and the world that could be.”*

**Victor Margolin**, *The Idea of Design*

<sup>1</sup>Teixeira, C. (2015). Engagement Model



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## INTRODUCTION

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Having learned in systems that are focused on a downloading format of learning, teachers, parents and youthworkers develop skills to fire fight challenges that occur in a complex society. This is their first breakthrough in moving from rigid systems of learning to adaptive learning. However, in the current context, teachers have a limited understanding of how to teach students to think through their learning process. In addition, learning from the emerging future is not even present as a concept.

Thus, much of the daily practice with youth is founded on being grounded in the present in a constant fire fighting mode to work through complex societal challenges or to organize them towards guided collective action. If we look through the lens of education, we observe that the world's pace of change is so fast to the point that what we learn today might not be as useful in a few years.

If the world as we know it through our eyes will soon vanish, how might we create an education system that sees the emerging world through the child's eye?

With such a fast pace of transformation and given that information is today mostly accessible and widespread, the question becomes whether learning should be static or fluid. Rather than memorizing information, students are now called to make sense of what they grasp from the world, as it emerges.

### *Content*

This book starts with the social context, in which I am placing the need for the research in the light of social, economic and technological transformations. It, then, leads to a snapshot of the design research – which was made in three different countries: the USA, India and China.

The decision of conducting the research in different places came more out of serendipity than of intentional planning. However, it is an intention that my practice remains a global one – hence, the diversity of contexts (and my continuous look-out for its similarities) is a part of my desire to look at larger global systems. In the snapshot section, I also highlight the key learnings from each research context, which were then integrated into the larger thesis work.

In the precedent analysis, I position this research in comparison to other widely known work done in the field of design-education, such as IDEO's tool kit for educators, the design-based learning approach and Aalto University's model of co-participatory design in schools.

In the educational change section, I contrast the principles of change supported in this thesis project to some of the research done in education reform, particularly Michael Fullan's work on educational change. This leads to the theory of change proposed by my thesis, in which I navigate the journey from short-term inputs of the project to long-term outcomes.

The social dreaming is the pedagogical framework, and one of the immediate outputs of this thesis. The section explains in detail the three principles guiding this approach: 1. future-making, 2. construction of meaning, and 3. social agency.

The design section outlines the four examples of generative (exploratory) learning tools that were designed and prototyped using the principles of social dreaming. It also outlines the concept of co-participatory design that becomes the way of engaging further in co-creating new learning tools with schools in the future.

I finalize this thesis book by reflecting on the key learnings so far, as well as how they are reflected on my design practice and some of the opportunities that are emerging as next steps.

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## SOCIAL DREAMING

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def.: opening up possibilities for what society has been about and what it can become in order to envision and create new social realities.<sup>1</sup>



Fig.2: students & teachers re-frame questions about learning in workshop in Beijing, China (June, 2015)

*“As old structures around us collapse, social dreaming is the key skill that young people will need to imagine and build a new society”*

**Sonali Ojha**, educator and Ashoka Fellow

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<sup>1</sup> Dunne & Raby, Speculative Everything

## 01. SOCIAL CONTEXT

This research responds to three major socio-economic trends. The first is that 65% of the students today will be employed in jobs that do not yet exist<sup>1</sup>. How do we prepare young people to meet a future which has not yet been described by society? In this context, students have to have the capacity to navigate the unknown, and to sense the intangible. From this frame, the need for many soft skills emerges.

The second trend is in regards to information overload. Young people are being educated with access to information and technology that historically no society prior to them has ever had. It is free, open sourced and available. U.S. youth spends almost eight hours a day on media<sup>2</sup>. In response to these transformations, how might social cultures and norms also shift?

There's a deficit in the learning space here. The deficit is that information requires people to be able to deduce patterns and make sense out of it<sup>1</sup>. That is the process of using both left and right brains. What does it mean to understand data and information?

The real skill, therefore, that it demands is that the person has to be able to manipulate so much information, which is the skill of meaning-making<sup>2</sup>. One has to give and construct meaning out of it. Increasingly more, the world is moving towards that.

The World Economic Forum points out that due to technology automation, we are trending towards a society in which 25% of the workforce will be unemployed at any given time. What social roles might young people take up?

Today when a child enters school at the age of five the world is very different from the one he/she will encounter at the age of 15. However, how much of the education system is really preparing the student to act in a world that is getting built?

What if students were taught from a new point of inquiry? Today, students are learning about what Einstein discovered but not what it was like to think like him. In order to respond to these transformations, this thesis project investigates how students might develop ways of learning how to learn and act in and with the world.



Fig.3: high performing students learn 'space station' design at Beijing's top middle school, China (June, 2015)

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- 1. FUTURE OF WORK:** 65% of students will be employed in jobs that do not yet exist (The Future Project, 2015)
  - 2. INFORMATION OVERLOAD:** US youth spends more than 7.5 hours/day on media (Kaiser Foundation, 2010)
  - 3. FUTURE OF TECHNOLOGY:** 25% of the workforce will be out of work at any given moment due to technological automation (World Economic Forum, 2015)

<sup>1</sup> The Future Project, 2015  
<sup>2</sup> Kaiser Foundation, 2010

<sup>1</sup> Freire, P. (2012). Pedagogy of the Oppressed  
<sup>2</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness



## 02. SOCIAL DREAMING

Social dreaming is the pedagogical approach that emerged out of this thesis project. It recognizes that if the future is uncertain, then uncertainty becomes the very possibility to imagine it!. This approach is at the intersection of three fields of work:

- social emotional research: particularly Sonali Ojha's body of work on meaning-making and social-emotional learning; Otto Scharmer's Theory U on how systems and self-awareness are the foundation of creating emerging futures; and Christopher Bollas' notion of how physical objects are evocative of feelings and emotional states of the mind.
- educational change: mainly the research of Michael Fullan on the critical factors for educational reform; John Hattie

on the importance of making learning visible for teachers and students; and Paulo Freire on social agency through meaning-making.

- design: including Lisa Sanders' work on developing generative tools; Dunne & Raby's speculations on the future; Dorst's detailed notion of the framing process – creating inquiries for discovery; and Carlos Teixeira's research on engagement models informed my thinking on how knowledge can be spread, shared and created within networks.

### SOCIAL-EMOTIONAL RESEARCH

- *theory u*, otto scharmer
- *the evocative object world*, bollas
- youth development, sonali ojha

### SOCIAL DREAMING

### DESIGN

- *convivial toolbox*, elizabeth sanders
- *spec. everything*, dunne & raby
- *frame innovation*, kees dorst
- *engagement model*, carlos teixeira

### EDUCATIONAL CHANGE

- *the new meaning of educational change*, fullan
- *visible learning for teachers*, hattie
- *pedagogy of the oppressed*, paulo freire



*"This has been creatively difficult."*

High-school student, The Future Project

Fig.4: students participate in prototyping workshop in New York, February 2016

<sup>1</sup> Franke, B. (2015). Design as Inquiry (RCA, London)

The social dreaming approach aims to be co-created and continuously updated as we engage with educators, students and researchers. The principles presented in this thesis book are supposed to be the starting point. They emerged out of our design research workshops, from the field work of Dreamcatchers Foundation and from literature (as cited in the previous page). It is built upon five core insights/principles:

1. The emerging future is the starting point for meaningful change<sup>1</sup>;
2. Meaning-making is the social-emotional process behind learning;<sup>2</sup>
3. Social agency should include iterations of action and critical reflection<sup>3</sup>.

4. Different students learn in different ways;<sup>1</sup>

5. For engaging with accelerated social change, teachers will be required to re-frame their roles.<sup>2</sup>

Leveraging considerable education research particularly on points 4. and 5. – I decided to focus and develop further upon the topics 1, 2 and 3. I believe they represent the core contribution of this thesis project to the field of design-education. In the next pages, I explore them in more detail.

<sup>1</sup> Scharmer, O. (2009). Theory U  
<sup>2</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness  
<sup>3</sup> Teixeira, C. (2015). Engagement Model

<sup>1</sup> Gardner, H. (2006). Theory of Multiple Intelligences  
<sup>2</sup> Freire, P. (2012). Pedagogy of the Oppressed



Meaning-making is the social-emotional process behind learning

future-making is the starting point for the learning experience

Social agency should include iterations of action and critical reflection

Fig.5: teacher clusters trends in education at research workshop in Mumbai, India (May, 2015)

## 2.1 FUTURE -MAKING

*The emerging future is the starting point for meaningful change*

Inspired by the work of MIT professor Otto Scharmer – the framing of future-making in education lies in the idea of the emerging future, which I am calling “the next”. The next is the starting point. From thinking in this place, everything else emanates.

Social agency is not about a linear journey from “here” to “there”. It is about students being able to recognize that the world has historically operated at a certain level and that for progressing, they have to have a systemic view of it.

The aim of building for the next is to find the traction point that is the magnet that can pull things into the future. It is a magnetic force that has some kind of suction value. It is a recognition that the time for silo starting points is over and there’s a need to expand.

If people experience change differently, there needs to be an understanding coming from diverse points of views and levels. To start change, one needs to bring in people who are accelerating change in society. What is the point of understanding change only from one’s lens?

One may adapt to change like a tortoise but actually there’s a raging tiger that is running along – becoming the definer of the momentum. In that context, the tortoise will have to transform into something else, learn new skills and readapt in some way.

For instance, if classroom technology products accelerate everyone’s capacity for information gathering, then, this nature of referencing needs to be taken into account while understanding change.

In regards to the school system, we are currently at this place that is being defined by the narrative of the teachers alone within the process of change – who mostly grew up in a completely different narrative and frame of reference and who are also not versatile in the current frames of reference.<sup>1</sup>

These teachers are the ones we are asking to adapt to change. The question is how much catch up that can actually happen and whether it is possible for them to do an evolutionary leap into the now?

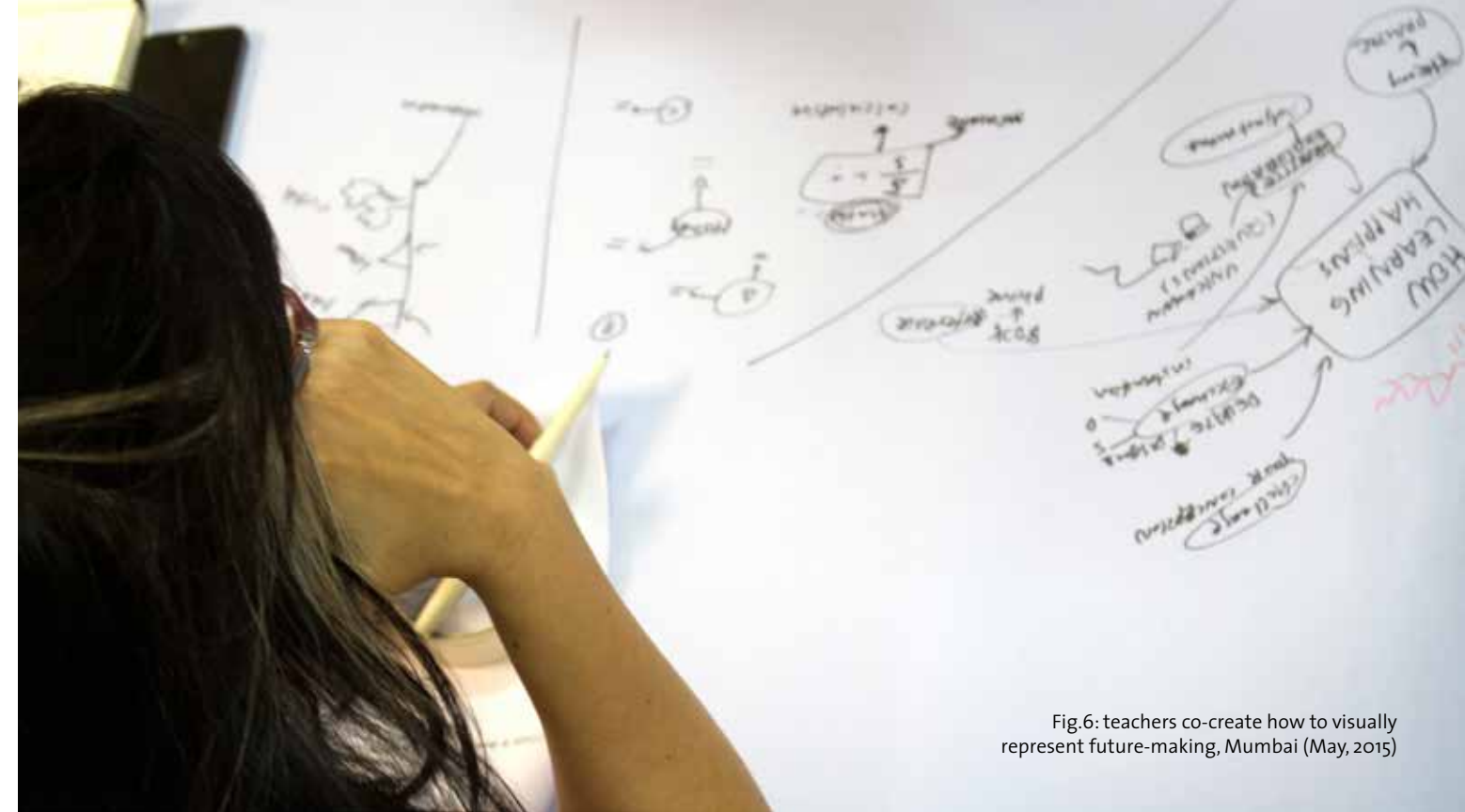


Fig.6: teachers co-create how to visually represent future-making, Mumbai (May, 2015)

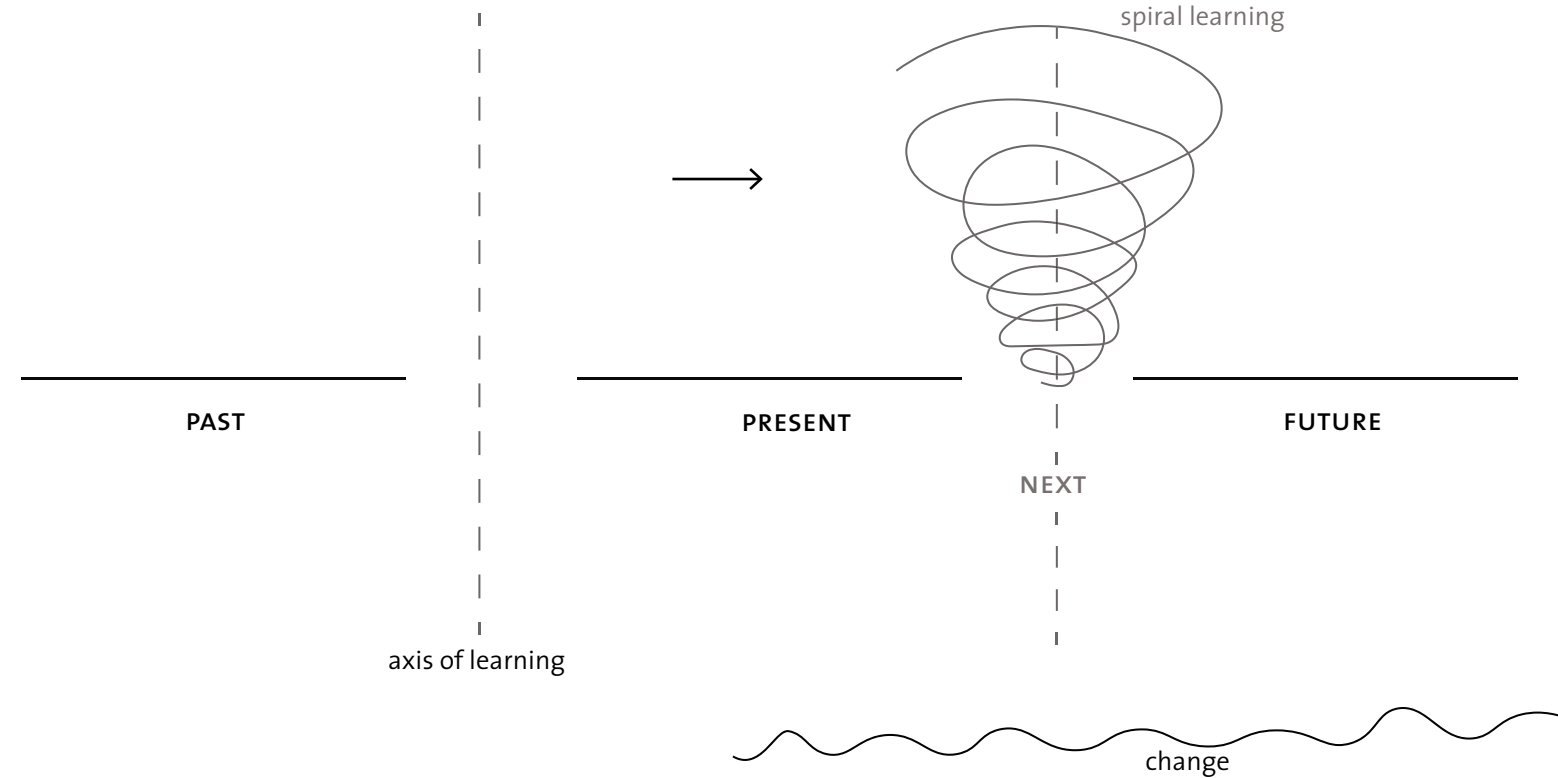


Fig.7: the first visual draft of future-making co-created by teachers proposed that learning was like a spiral emerging from the future

<sup>1</sup>Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness

The future-making approach used in this thesis is inquiry-based. I am defining inquiry as any process that has the aim of augmenting knowledge – closely associated with logic. It includes generating hypotheses, deducing patterns and testing predictions.

In my thesis, a core hypothesis is that a student cannot comprehend how to inquire forward without understanding the past. And that a student can only look at the past with a sense of action, if he/she gets a sense of the future.

Just like going to the eye doctor means "testing out different lenses" so one can see the world with a better vision, inquiring across time becomes the critical "lenses" through which the student starts to stretch and integrate the skills of building new social realities.

We start the future-making approach by placing inquiry<sup>1</sup> as the lens through which students could use to see the ways they learn – including:

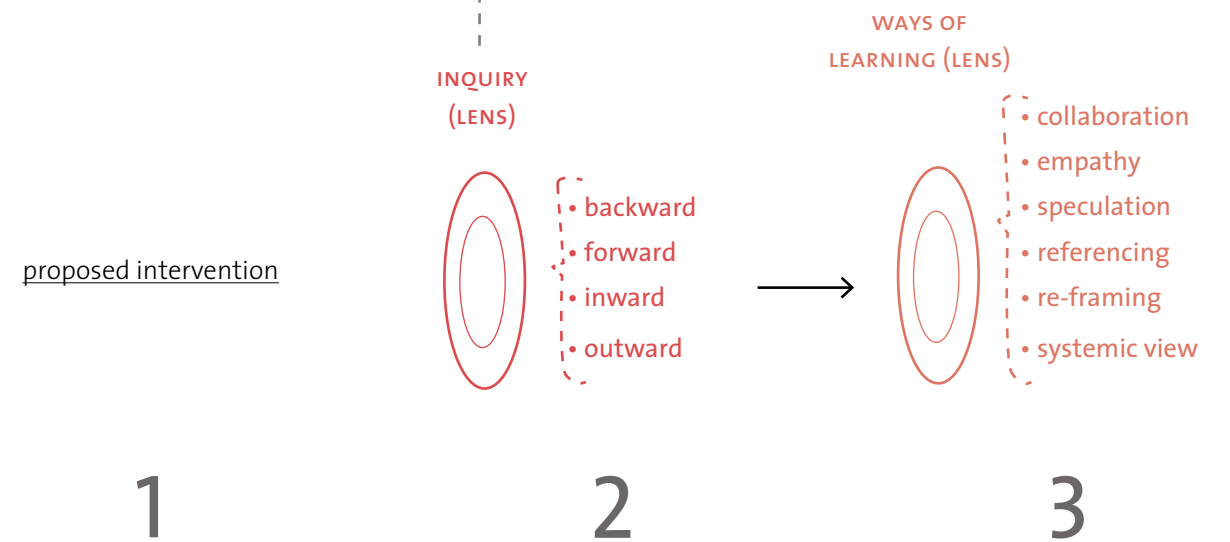
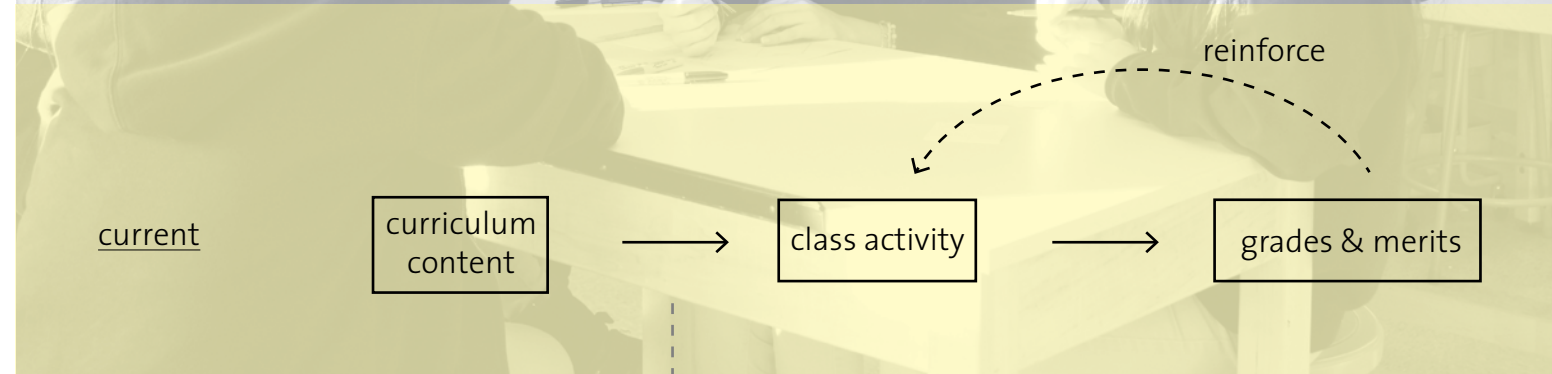
1. inquiring backward (into the past);
2. inquiring forward (into the future);
3. inquiring inward (into the present and oneself) and;
4. inquiring outward (into the next).

This approach could be used in multiple ways. It is particularly a mindset<sup>2</sup>, a way of thinking and framing the world. It is, hence, not expected to be taught as a curriculum lesson but rather as a way of engaging (through thinking, seeing and doing<sup>3</sup>) with the standard curricular content.

In the prototypes I ran with schools, teachers and students have used future-making to investigate a question they were already working on.

The following page shows the example of Achievement First – where the students from the after school coding club for girls want to inquire into the future of coding and its implications in terms of job opportunities.

<sup>1</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness  
<sup>2</sup> Hattie, J. (2012). Visible Learning for Teachers  
<sup>3</sup> Dorst, K. (2015). Frame Innovation



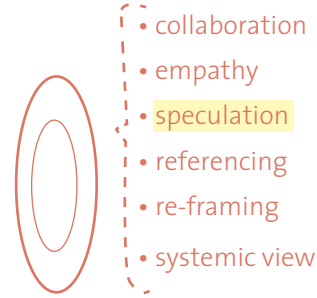
1 Students start with a core question or area of exploration they wish to investigate/learn. Ex. what may be the new coding jobs of the future?

2 Students choose a lens of inquiry for exploration. Ex. backward inquiry – looking at the past, what has played similar roles as the ones coding plays today? What have been the consequences of those technologies, interactions, etc?

3 Students decide what lenses they will use for ways of learning. Ex.: Will they do the exploration as a group (collaboration)? If so, how to organize it? Will they speculate – for instance – what jobs would not be available today if coding hadn't been developed? Or empathy – what coding truly means for other students in the school?



WAYS OF  
LEARNING (LENS)



A critical lens for the process of future-making is the one of *speculation*. The speculative approach allows oneself to move from a problem-solving mindset into a dreaming, imagining and co-creative space. From the social-emotional point of view, one suddenly starts to move from the transactable to the visionary within oneself.<sup>1</sup>

Once one does that and asks the how of it – then, a generative life can be built. Can we, in some way, do something that can enable those who work with young people – such as teachers – to be able to understand this?

When one starts seeing this possibility in a young person, then one’s fundamental relationship with her/him also changes. In this process, design-thinking helps connecting life as an act of creation – and hence, it reduces dramatically the nature of fear and the understanding that there’s no fundamental thing called failure.

Being speculative also comes from a profound level of being able to navigate through intuition within oneself in comparison to only taking external cues.

By placing speculation in a learning space, our hypothesis is that teachers can start to see the gifts that kids embody. So, their narratives around who the children are and how they make sense in the world also start to shift.

Just because a student does not learn in one format does not mean that he/she is not capable of learning. Many times, students have very profound visual and spatial intelligence – but there’s not much space in our learning system for that.

As a result, they don’t understand that those skills could be avenues from which things could be born in their lives. The act of being speculative about the future allows one to develop the capability of giving permission, which involves the abilities of claiming and reclaiming.

Speculation is not only about the future – it can also be about alternative pasts and presents. For instance looking at history: in regards to a particular country’s independence we may build 4 alternative options – which means we could have gone down any of those four paths. Today, we have the beneficiaries of one narrative. What could be the other three? Therefore, what could have happened today?

That is about being able to open up the children’s possibilities in looking at history, politics and social constructs in which they are growing up. These are counterfactual histories – which have not happened but as we try to process them, maybe we come to different realizations about who we are and what is valuable to us.

We may find missed opportunities or it might help us understand where we may wish to go next. We can’t go back and change them, but we can reflect on the other possibilities as we are making political, personal or technological decisions today.

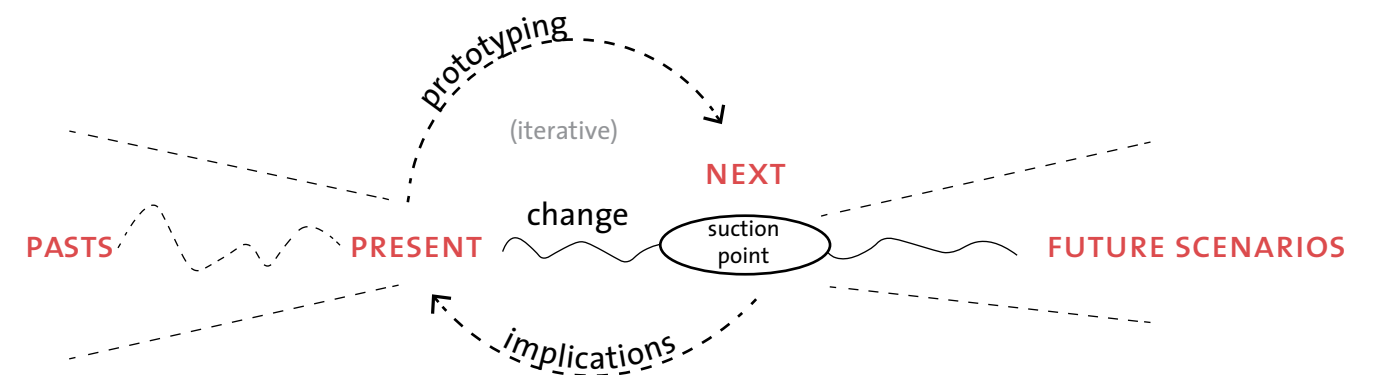


Fig.8: current visual iteration of the social dreaming framework – including speculations of the future(s) and the past(s)

<sup>1</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness

For this thesis, I am leveraging the knowledge available in the design field about speculation – but I am also interested in the social-emotional implications from the student’s point of view in learning how to speculate.

Hence, I believe the contribution of this thesis is connecting the skill of speculation in regards to what it represents socially and emotionally for the student (as highlighted in the previous pages). This is being done on top of the three following principles of speculative work (as defined in literature<sup>1</sup>):

**1. Building vision spaces:** building a common understanding of where we are going – which is not about making predictions or placing a bet on the future. Instead, we position vision spaces as a set of guideposts that can be used to frame behaviors and decisions in our actions today. It is like having these guideposts out in the distance in our mind’s eye and start to lead towards them by taking certain actions.

**2. Building futures, not a future:** it is more helpful to deal with “futures” than to deal with a single future, which means getting students to plan – for instance – 4 different futures and each of them being different or possibly exclusively different. In this scenario planning, we are not dedicating ourselves to any particular future. But enjoying thinking through them. It is not about getting them right, but working with them to get them to the best they can be. If people are involved in this process, they find out that in a nature of diversity they will know how to manipulate, transact and engage – in ways that are not destructive but proactive and in favor of their well-being. It will not be the cause of more fragmentation but of a tremendous level of ability to work with it.

**3. Discovering new guideposts:** the starting point for our creativity usually springs from our particular ways of looking at the world – based on who we are and where we come from. But in speculations, we can go beyond what we have to begin with. A lot of times when we speak of the future, we have a lot of visions that have been given to us by a narrow band of viewpoints. It is important to start separating away from those. Otherwise it’s going to be just replicating what we already see and know. By putting these futures aside in a conversation, we can start to engage in a dialogue about going into new spaces.



Fig.9: high performing girls join Katie’s coding club at Achievement First Bushwick Middle School

#### BROOKLYN FEBRUARY 2016

Katie has been teaching science and languages for five years at Achievement First (a charter network of 30 schools serving students in low income communities). As an entrepreneurial and forward-thinking teacher, she leveraged the after school period to create a coding club only for girls. “Most of technology is coded by men, if we are speaking of equality we need to have girls who code inserting their voice in the industry”, says Katie.

When I met the girls for the first time, Katie had briefed me they were among the top performing students of the school. My first impressions were of them being highly aware of their social context, given their age (9 - 10 years old).

They shared their views on race, social inequality and their trust that at school they will gain the skills to close the achievement gap that has historically existed in their families.

I also noticed the girls had built a hopeful version of their future, one in which knowing how to code would give them a job and although they were aware of the social and racial issues they face today, their version of the future had none of those tension elements.

Even though this future is possible, it is also true it’s not the only possibility. During our after school session, we prompted them with a data released by the World Economic Forum saying that 25% of the next workforce generation will be out of job at any given time – due mainly to automation.

Katie and I noticed the girls had become slightly confused with an information that seemed challenging to the future of coding they were holding dear to themselves. Raising the question of whether alternative futures are possible is at the heart of speculation in design. Within learning spaces, it also important to ground the speculation in the student’s sense of identity. At the social-emotional level, what does it mean to have the capacity to speculate the futures I may co-create and inhabit?

At some point, Rachel – one of the students – said “the future I want to be a part of is one that may not be as good as I had imagined, but this is why I want to be in that future, so I can act and change it”. Rachel re-framed the meaning of coding from being stated by someone else (as a job she might pursue) to one that she creates (through agency).

<sup>1</sup> Candy, S. (2015). Designing Our Own Futures

## 2.2 CONSTRUCTION OF MEANING

*Meaning-making is the social-emotional process behind learning*

One of the earliest insights of this research came from a series of workshops and interviews in Mumbai during the summer of 2015. As we gathered a group of 10 teachers from R.N. Podar School (one of the leading schools in student achievement in India) in the tiny office of Dreamcatchers Foundation, teachers drilled down to a core point: learning needs to have a personal meaning and relevance for it to succeed.

Meaning-making is the social emotional aspect behind learning. How one ascribes value is a completely emotional piece: “I ascribe value to this because it is my voice, my tool of articulation, my instrument through which I present that which is being experienced, created within me. Therefore this is valuable.”

However, making meaning only of the present experiences (by giving patterns to the now) at the most results in integration. However in terms of “future possibilities”, it has no value of carrying the student or teacher anywhere.

The theory of change proposed in this research is that if schools can create learning experiences based on meaning-making, students would enhance their perception and possibility of ascribing meaning to things, leading them to develop a sense of what is personally valuable. Hence, affecting the way they engage and act in and with the world.

This thesis proposes that the whole world is a series of experiences that require students to give meaning to them, ascribing meaning to their living reality<sup>1</sup>. We, for this reason, position meaning-making at the heart of real-world learning.

Design historically has been about external purposes and outcomes. What about the internal world? Just like architecture presents a series of principles to organize space, if one was to organize the inner world in a similar way how would he/she do it?

To create spaces of silence, architects have used certain principles. In a similar way, how can one create that space for him/herself? The moment one starts to play in it, it becomes his/her dynamic reality. Therefore, not absorbing facts from someone else’s stated reality.



Fig.10: students discuss the function of objects versus their meaning, Beijing (June, 2015)

### BEIJING MAY 2015

Soon after we landed in China in the summer of 2015, we had our first meeting with our local partner, the Beijing Institute of Technology. When we entered the industrial design room, we spotted a table covered in objects designed by the last graduate batch of students.

They were well squared and well rounded, with simple design that prompted a sense of efficiency. During our conversation, we were sharing about our findings and discoveries in India (where we had just been) as a warm-up to reflect on what the Chinese experience could be like. We spoke of the insight that successful education requires students and teachers to make meaning out of what they learn, a process we started naming meaning-making.

Constrained by language issues, we entered a conversation of what meaning is. Linjing, one of the designers at the institute suggested a Chinese word for meaning. Then, Qi (the professor) said that word actually meant “function” and wondered, “what then is the function of a human being?”

At that moment, it seemed clear that the group could understand what function was but they were having a harder time to grasp the idea of what meaning could be. As we started exploring the differences of meaning and function with examples, the designers shared that Chinese schools are not used to inquiring and celebrating the dreams of students.

What they shared at that moment, and also what we were able to see in the next days while visiting local schools, was about a system that celebrates the function of education and not its meaning.

<sup>1</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness

<sup>1</sup> Freire, P. (2012). Pedagogy of the Oppressed

The meaning-making model is a part of the social dreaming pedagogical approach – designed for this thesis project. The version presented here is the last iteration of what was co-designed with teachers and educators.

The model represents the student's *sense-making* of the learning in three dimensions: past, present and emerging future. The single learning experiences are touchpoints where students have a chance to learn a curriculum concept - such as the course lesson, a field trip, a game, a book, a challenge, etc.

Meaning-making is the immediate result of the sense-making process<sup>1</sup>. This means students need to make sense of their lived experience in order to create meaning out of them in ways that propel them to act upon the world.

This insight is also discussed in Christopher Bollas' research when he says that "as the store clusters the object-like in different units, so does our mind – with the salient exception that we add personal meaning to each and every one of the things we see. But we do not just see them. We experience them".<sup>1</sup>

As the student accumulates many single learning experiences, he/she develops the need to integrate them<sup>2</sup>. Integration, hence, is a result of their sense-making process across time – exploring the school curriculum in a wholistic manner: understanding its legacy (past), its current applications and its potential for the future.

The concept of integration is also present in Paulo Freire's work when he says "if students are not able to transform their lived experiences into knowledge and to use the already acquired knowledge as a process to unveil new knowledge, they will never be able to participate rigorously in a dialogue as a process of learning and knowing".<sup>1</sup>

In the next page, I provide an example of what the meaning-making process could look like in the classroom.

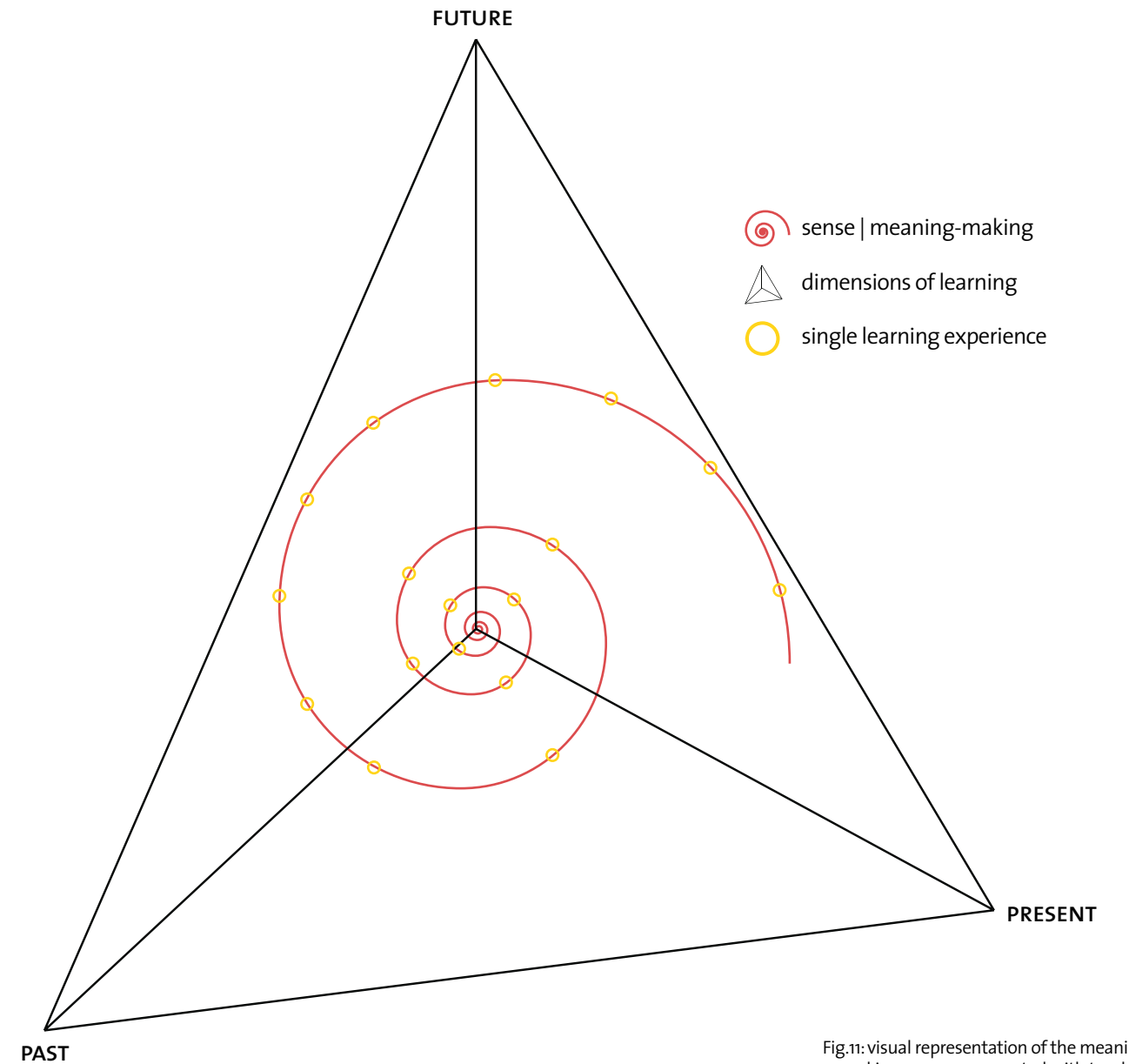


Fig.11: visual representation of the meaning-making process, co-created with teachers

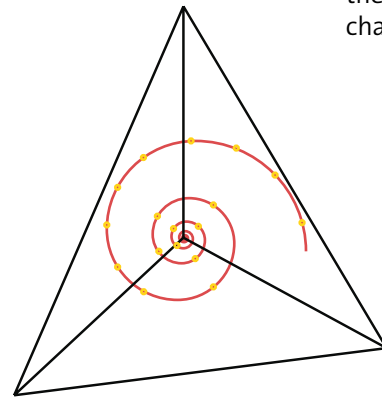
<sup>1</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness

<sup>1</sup> Bollas, C. (2008). The Evocative Object World  
<sup>2</sup> Bollas, C. (2008). The Evocative Object World

<sup>1</sup> Freire, P. (2012). Pedagogy of the Oppressed

1

**○ single learning experience:** during a science class, Rachel (student) experiences different interactions with the content. For instance, Katie (the teacher) is telling all students about atoms and chemical interactions. Besides listening to Katie, Rachel is also learning from her classmates, from reading the book as well as from experimenting with a few chemical substances Katie brought to class. All of these are single learning experiences.



3

**🌀 sense | meaning-making:** students create meaning as a result of inquiring into the curriculum topic in more explorative ways. At some point, Rachel might make a connection that learning about atoms could also be learning about discoveries – and that she might herself encounter things that were unknown to her (and maybe to others). Discovery as a way of learning becomes one of Rachel’s tools for creating a future she wants.

2

**📐 dimensions of learning:** learning about atoms should not be restricted to simply memorizing the content. Students need to explore the topic in a holistic way, through inquiry. What the has discovery of atoms allowed people to do in the past? What are the outcomes of discovering something no one knows about? Is there something I myself have discovered? What if in the future someone questions atomic theory or discovers something that changes the previously held beliefs?



Fig.12: Rachel (student) creates deeper meaning out of a learning activity by making sense of it across time

*“Four times four is sixteen. The capital of Brazil is Brasilia’. The student records, memorizes, and repeats these phrases without perceiving what four times four really means, or realizing the true significance of ‘capital’ in the affirmation ‘the capital of Brazil is Brasilia’, that means what Brasilia means for Brazil and what Brazil means for the world”*

**Paulo Freire, Pedagogy of the Oppressed**

## 2.3 SOCIAL AGENCY

*Including iterations of action and critical reflection*

In the current context of education, grading and assessment plays a major role of comparing people. However, is the student or teacher someone with agency who is able to construct reality? Are they able to engage with reality and give it new form, with expression and direction? This level of knowing and acting in the world comes from a very different place.

In this thesis project, social change is not about the traditional idea of ‘helping people in need in the world’ – but it’s rather about people accepting and understanding that society has hit an inflection point (in terms of economic growth – linked to production, consumption and social inequality) where for the next decade or more, the pattern of change will be extremely amplified and rapid.

The natural outcome of that speedy change is that social cultures and norms will also shift. To be able to tackle those new emerging social norms and contexts, students and teachers have to have the ability and skills to manipulate them.

The ability to thrive in that context requires one to be a player in the social space – being able to have a fulfilled life as well as understanding how one belongs in the world<sup>1</sup>. It also involves knowing how to manipulate the system, so as to be able to give meaning to the social context.

This is the social agency that we refer to within the approach of social dreaming proposed in this thesis. And it involves two core principles:

1. Action in the present should be rooted in the concept of the next (what is the emerging future mindset from which I am operating?);

2. Social action should be iterative – that means students are aware that their action has a consequence; hence, they are able to negotiate implications and contradictions<sup>1</sup> that come from taking part in creating the social context. It is about inserting critical reflection in the process of social agency.

The model proposed in the next pages tries to grasp some of the visual elements of how this social agency might unfold – leveraging particularly the work of Professor Carlos Teixeira, at Parsons The New School for Design.

It is not supposed to be a closed model in itself – but by having it, we begin to discuss with students, teachers and school leaders what are the building blocks of social agency – and use those insights to inform some of the design choices taken in this project.

<sup>1</sup> Ojha, S. (2009). *Mirrors of Infinity, Reflections of Completeness*

<sup>1</sup> Freire, P. (2012). *Pedagogy of the Oppressed*



Fig.13: students create a dream flower so their classmates could hide their dreams, Beijing (May, 2015)

### BEIJING MAY 2015

Together with a few Chinese designers and teachers, we visited the High School Affiliated to the Renmin University in Beijing. This is supposedly one of the best public schools in China. It was striking to me that all classrooms had a Chinese Dream poster on their walls – on which students could read what was the government’s dream for their education and what vision of future their learning was moving them towards.

Later on, as we hosted an ideation workshop with students, the posters became a topic of discussion. What does it mean to dream in China? If dreams are government-owned, where is the sense of personal agency?

In a top-down system, students voiced that they themselves are unaware of what their own dreams are and – at another level – what social dreams they want to collectively construct.

If current schools are places to prepare students for standardized tests – students are hardly asked what their dreams might be. Given this is the case, students said that prompting themselves to act is a tremendous leap from their current state.

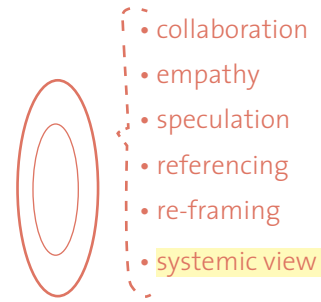
Instead, they said “in China, we need to start from the beginning – which may not be to act upon the dreams but rather to have them in the first place and be able to speak about them”.

Considering that it is common for Chinese students to be shy and struggle with self-expression, a group of students developed the design concept of the *Hidden Dreams Flower*.

A student said – “in this classroom, students all have a shared garden full of Hidden Dream Flowers. Whenever a student has an initial glimpse of a personal or social dream, he or she can hide it in the garden. No one will know whose dreams they are – but this is the beginning for learning how to cultivate”.

<sup>1</sup> Freire, P. (2012). *Pedagogy of the Oppressed*

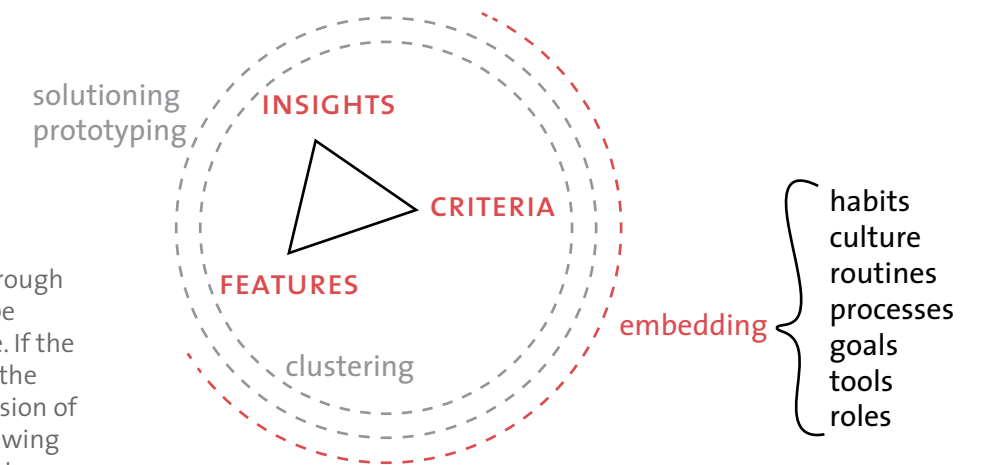
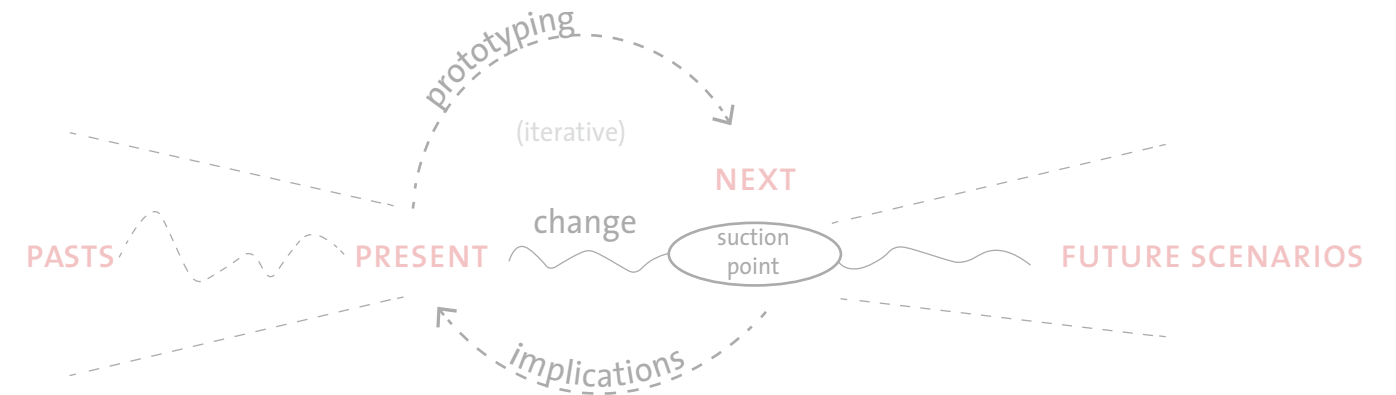
WAYS OF LEARNING (LENS)



A critical lens for the process of social agency is that the student develops a *systemic view*. The problems we are confronting today are far more complex, and dynamic (changing very often) – and require systematic intervention.<sup>1</sup> It's not something that can be done at one single time. The biggest challenge of all this is that it requires a productive way of integrating knowledge – not for an analytical purpose, but for a generative one.

The daily routine (habits, culture, space, processes, curriculum, tools, expected outcomes) of the school system today needs to be re-thought in ways that different outcomes could be expected. These routines could be implemented in the chemistry class or history class – what if there's a class that integrates the knowledge of all different disciplines? In this context, knowledge needs to be available for the movement to develop (potentially as open-source). The infrastructure needs to become affordable and easy to access. An example of growth in that space is the makers' movement, which is leveraging an emerging culture and habits through open-sourced, networked models. The transaction cost is very cheap for the Makers' Movement.

These are the elements of a generative space. For instance, routines could be long-term projects, intensive periods – basically, a mix of systematic approach with disruptions. The type of course, space, curriculum created will reflect the identity of these routines. It is like setting a playground. It is about creating infrastructures and environments. It is habits from the individual point of view and routines at the organizational level.



insights/criteria/features through thinking/seeing/doing can be derived from any time frame. If the next provides suction value, the futures/pasts provide expansion of thinking/seeing/doing – allowing new insights/criteria and features to be brought into the present. The mechanism to cope with change is architected by the process of clustering/solutioning/embedding<sup>1</sup>

<sup>1</sup>Teixeira, C (2015). Engagement Models

<sup>1</sup>Teixeira, C (2015). Engagement Models

*"The teacher cannot think for her students, nor can she impose her thought on them. Authentic thinking, thinking that is concerned about reality, does not take place in ivory tower in isolation, but only in communication. If it is true that thought has meaning only when generated by action upon the world, the subordination of students to teachers becomes impossible"*

**Paulo Freire, Pedagogy of the Oppressed**



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### 03. RESEARCH SNAPSHOT

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For this research I have conducted over **100 interviews** with teachers, education experts, and school leaders. Tools have been co-created with teachers through **seven design-led workshops**, in three countries (India, China, and the U.S.), and immersive visits to six high-performing schools at the edges of the learning system (in regards to their learning approaches, social backgrounds and cultural diversity). **Two prototype iterations** have been done with field partners in New York, within the school context.

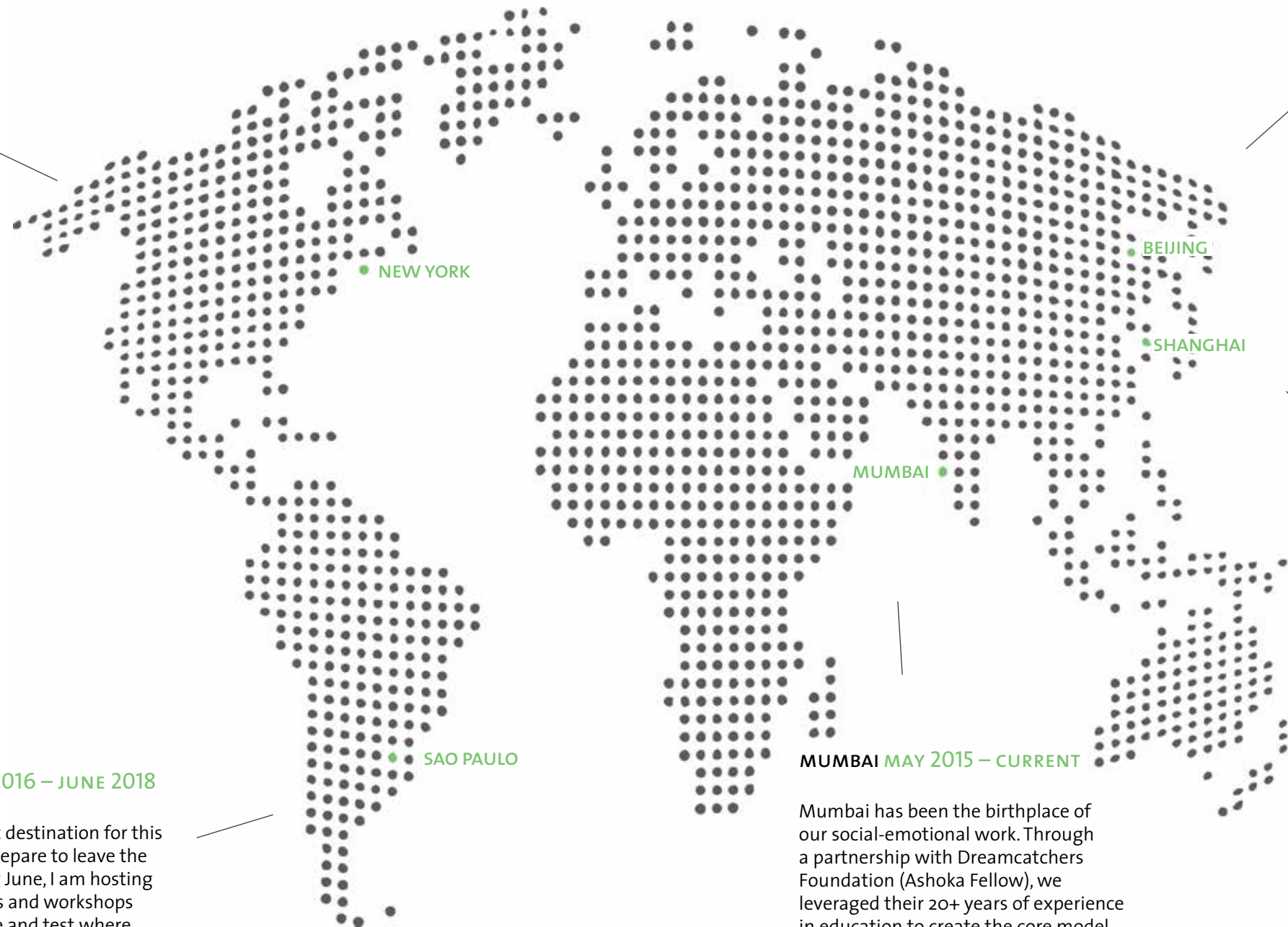
I have also searched for integrating practices and learnings from other fields, through incorporating their principles, insights, and even design propositions. Particularly, from fields of systems theory, organizational change, learning sciences and behavior change.

The pedagogical frameworks, as well as the learning tools, and the overall design project proposition have been co-designed. The approach to research has been one of building together, and constantly exposing the artifacts to feedback of field practitioners. This has strengthened the theoretical proposition, and also gave validation to the possibilities of implementation.

In the next pages, the research is outlined and the core learnings are highlighted. The plan for moving the research and learning process forward is also explained, with the possibility of continuing the work in Mumbai, Sao Paulo, and New York.

**NEW YORK** MAY 2015 – CURRENT

NYC is the base location for this project. The design approach has been developed within Parsons and supported by advisors, particularly leveraging the work of Carlos Teixeira (engagement models), Lisa Grocott (design for learning) and Lara Penin (service design). Local partners have been key for prototyping and sense-making purposes – including The Future Project and Achievement First’s network of charter schools.



**BEIJING** MAY 2015

With support of the India-China Institute and in partnership with the Beijing Institute of Technology, we visited two of the best public k-12 schools in China and hosted two workshops with students, teachers and designers. Workshops explored insights on the future of learning in China and uncovered unique characteristics of the Chinese education model, such as the influence of government and the high emphasis on testing.

**SHANGHAI** JUNE 2015

In partnership with China Bridge (a large design consultancy), we co-created one workshop for prototyping concepts. The insights that were brought from the interviews in Beijing were used by participants to create early stage concepts such as a flying drone, that carries inquiry-based materials so children in rural areas can explore their learning questions. These concepts were not further used but they helped us iterate our prototyping approach.

**SAO PAULO** JUNE 2016 – JUNE 2018

Sao Paulo is the next destination for this thesis project. As I prepare to leave the U.S. in the upcoming June, I am hosting a series of interviews and workshops in Sao Paulo to sense and test where this practice would be best positioned – with private or public schools? With a social business model or as a non-profit? Within a research umbrella connected with local universities? These questions will be explored as we iterate the model, the approach and the funding possibilities.

**MUMBAI** MAY 2015 – CURRENT

Mumbai has been the birthplace of our social-emotional work. Through a partnership with Dreamcatchers Foundation (Ashoka Fellow), we leveraged their 20+ years of experience in education to create the core model behind our points of view in regards to social-emotional learning. R.N. Podar is a network of 100 schools in India that has taken part in the four workshops we hosted in Mumbai and agreed to pilot our project in their schools in 2016/17 (post-thesis).



### MUMBAI MAY 2015

We hosted three design research workshops in partnership with Dreamcatchers Foundation – involving teachers, designers, educators and students. Sonali Ojha, a remarkable social entrepreneur in India, says “education has been about downloading information from the past, without inquiry into the future”. **The idea of moving from rigid systems of learning to learning from the emerging future came out of those discussions.**



### AHMEDABAD MAY 2015

During a field visit, I interviewed teachers and the founder of Riverside School, Kiran Sethi (an Ashoka and TED Fellow) – globally known for their model of using design to support students in developing problem-solving skills. **With them, I learned it is possible for the school to be a living learning organization, for education to be organized as a movement and for teachers, and students to co-create the school pedagogy. And also in contrast, that my project was not about problem-solving but social dreaming.**



### MUMBAI JUNE 2015

Back in Mumbai, I partnered with R.N. Podar – one of the top performing schools in India, to conduct a co-creation session in which 100 teachers would design learning tools. With them, I learned the value of building supporting communities of teachers that are willing to work and create together. In such spaces, teachers are curious and entrepreneurial. From this, **the hypothesis that emerged is that if empowered with co-creation tools and core principles, schools as learning communities can be profoundly generative.**



### BEIJING JUNE 2015

In partnership with the Beijing Institute of Technology, I visited two of the best performing public schools in China. One of the schools had more than 100 elective courses for high performing middle school students – one of them was *space station design*. By seeing how learning priorities and school behaviors were so contrasting, **I had insights into how educational systems work in regards to systems' goals, routines and beliefs. In China, for instance, the government's drive for economic growth shapes the purpose of an entire education system.**



### BEIJING JUNE 2015

In Beijing, we hosted two research workshops in collaboration with teachers, educators and designers. I brought the insights and design criteria that had emerged from the workshops in India. The groups in China would re-frame them to the local context and create prototypes for the future of learning. For example, the iconic *hidden dreams flower* that illustrates the cover of my thesis. **In these sessions, I learned the value of contextualizing the design process and how appreciative people are of participatory processes.**



### SHANGHAI JULY 2015

In Shanghai, partnering with China Bridge and Dreamland has helped to move the concepts from insights into designed features. At another level, we were also piloting a co-participatory process, which is becoming the approach we wish to carry forward within the schools. **One of the great learnings was in how to negotiate research insights with larger groups, and that engagement can be sustained (and even strengthened) when the collective learns to compromise in order to move forward.**



### NEW YORK FEBRUARY 2016

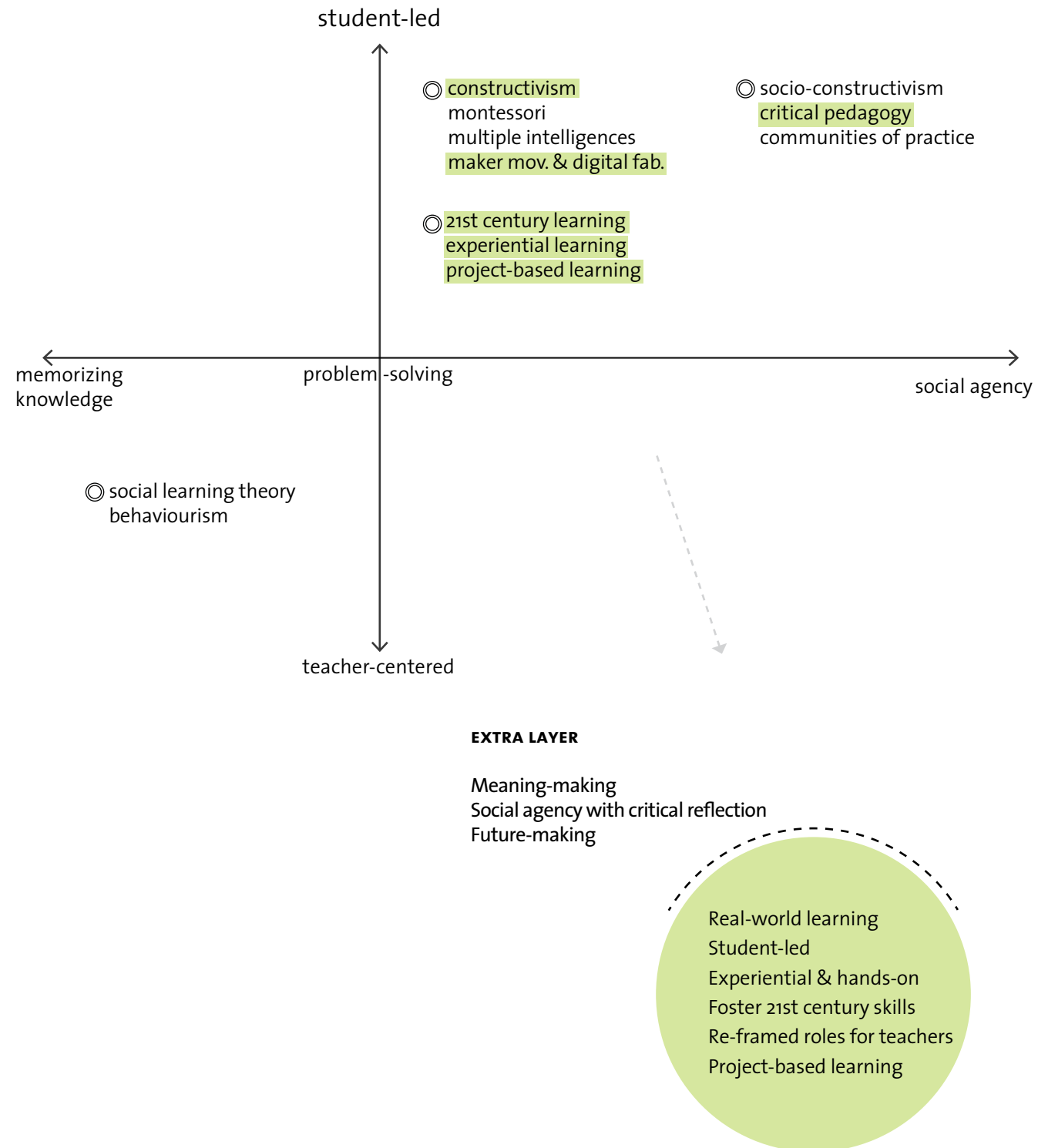
In Brooklyn, I hosted interviews and ran prototypes of the learning tools with Achievement First's teacher Katarina Pasinsky. One of the greatest learnings in working with them has been on how difficult it is for innovative thinking to flourish in schools with harsh environments (such as limited resources and pressure for academic achievement) – **teachers are left with the responsibility of fire fighting through obstacles in order to bring in fresh thinking.**



### NEW YORK FEBRUARY 2016

I found great alignment in terms of area of work with The Future Project, a non-profit based out of NYC. I interviewed the team and hosted prototyping workshops to test the learning tools. They have also mentored me to understand the challenges of classroom implementation. In engaging with their dream directors and design team, **I learned how they managed to transform an after school program into a nationwide movement for learning, and the challenges of building a pedagogical approach as the project is taking off.**

## 04. PRECEDENT ANALYSIS



This thesis project leverages education theory and social-emotional research, particularly those that have incorporated strong principles of student-led learning and social agency<sup>1</sup>.

My research joins conversations on approaches such as experiential, project-based and real-world learning. It is also aligned with research involving 21st century skills<sup>2</sup> and the emergence of deep learning<sup>3</sup> as core elements of student development.

It recognizes the work design has begun to take in the k-12 education system, particularly with the accelerated growth of the maker movement, the digital fabrication<sup>4</sup> culture and the discussion of how might learning move from screen-based media to hands-on, open-sourced affordable technology.

<sup>1</sup> Freire, P. (2012). Pedagogy of the Oppressed  
<sup>2</sup> Unesco. 21st Century Skills  
<sup>3</sup> Atherton, J. (2009). Learning and Teaching: deep & surface learning  
<sup>4</sup> Blikstein, P. (2013). Digital Fabrication & 'Making' in Education

This thesis project is not about teaching design skills to students but it is rather a pedagogical approach that teachers and students can use as learning lenses into how they engage with standard curriculum. This is done through 1.co-designed learning activities and generative tools 2.open/free sharing of activities and tools.

Social dreaming is: 1. using design as a form of pedagogy for social agency and future-making and 2. leveraging the evocative aspect of objects<sup>1</sup> in hands-on learning to instill a sense of meaning-making in education.

Hence it is about students going beyond memorizing knowledge so they start envisioning and developing ways of learning how to learn, from which they can build futures they want. My research borrows elements of design such as inquiry and future-making, and translates them into the context of education.

<sup>1</sup> Bollas, C. (2008). The Evocative Object World

This project is also placed in the light of research made on educational change over the last 40 years. Fullan, for instance, concluded that 'changes in beliefs and understandings are the foundation of achieving lasting reform'<sup>1</sup>.

My thesis project builds on his finding and questions what roles design can play to contribute for educational reform through new values and beliefs, approaches and goals for learning.

In the next pages, I highlight the commonalities and differences of social dreaming in comparison to three other renowned projects in the space of design and education. Two of them are developed by design programs at universities (Art Center and Aalto University) and one is a mainstream business strategy (IDEO).

<sup>1</sup> Fullan, M. (2007). The New Meaning of Educational Change

**1. DESIGN-BASED LEARNING (DBL),  
ART CENTER COLLEGE OF DESIGN**  
[www.artcenter.edu/teachers](http://www.artcenter.edu/teachers)

At Art Center, design-based learning (DBL) is used as a pedagogical approach for the purpose of improving curriculum learning in k-12 education (particularly tied-up to common core standards).

Through backwards learning, students start from an exploration task (such as 'design a rocket to go to the moon'). By using hands-on and crude maker materials, they further investigate elements of the context (such as 'what are the mechanics of going to the moon').

As they build, students learn emerging curriculum concepts. For example, physics, science or history - that are linked to the topic of the activity.

Such as DBL, social dreaming also leverages project-based and experiential-learning. However, in the former, meaning-making is emphasized as the core stepping stone from which learning happens (which includes but it is not limited to curiosity).

While DBL might take students to explore scenarios, they are not exactly emphasizing the ability of future-making. In social dreaming, future-making is critical because it allows students to re-frame the ways they engage with the world in terms of social agency.

**In conclusion, DBL is a pedagogical approach focused on increasing student academic success (test scores and curriculum learning) by engaging them through curiosity. Social dreaming is a pedagogy that leverages learning through meaning-making so students can develop the social-emotional skills that allow them to have social agency.**

**2. DESIGN THINKING FOR  
EDUCATORS, IDEO**  
[www.ideo.com/work/toolkit-for-educators](http://www.ideo.com/work/toolkit-for-educators)

IDEO has developed a design methodology adapted for the context of k-12 education. The toolkit was created through a partnership with Riverdale Country School, a private school in New York City.

Design in this case is used as a collection of methods to help teachers intentionally and collaboratively design solutions for their schools. These could be from how to include empathy in curriculum to how to re-design physical spaces.

**Comparatively, social dreaming is a pedagogical approach (rather than a collection of design methods). It is also not focused on enabling teachers to design solutions for the school, but rather on moving learning from being teacher-centered to becoming student-led.**

**3. PARTICIPATORY DESIGN,  
EDUKATA (AALTO UNIVERSITY)**  
[edukata.fi](http://edukata.fi)

Edukata is a participatory design model for educators to fill the gap between envisioned learning scenarios and classroom practice.

It is a method to support teachers design learning activities. It states that there's no single solution for classroom approaches and hence, co-designing the approach is critical.

It starts from an idea teachers would like to explore ('design studios'). Then, the edukata model helps identifying challenges and obstacles - designing around them. Finally, the outputs are learning activities teachers can use and share.

From Edukata, social dreaming borrows the open approach to designing learning tools and activities. This is done through creating and providing a library of existing tools while also engaging educators in designing new tools on an ongoing basis.

Just like Edukata, social dreaming collaborates with teachers and educators to co-design the learning activities that may respond to the required changes in the school.

**However, social dreaming goes a bit further into the pedagogical approach (as opposed to being uniquely participatory) to instill ideas of future-making, social agency and meaning-making into the curriculum approach.**

	DESIGN-BASED LEARNING, ART CENTER	DESIGN THINKING FOR EDUCATORS, IDEO	EDUKATA, AALTO UNIVERSITY	SOCIAL DREAMING, PARSONS
APPROACH	Pedagogical approach Student-led Higher-level reasoning skills Backwards learning	Design methodology Teacher-focused - Human-centered design	Design methodology Participatory design - Future making	Pedagogical approach Student-led Social-emotional learning Future-making for social agency
OUTCOMES	Raising test-scores Reducing teacher burnout	Teacher engagement & development	Fostering 21st century skills Teacher engagement	Fostering 21st century skills Skills of learning how to learn

## 05. EDUCATIONAL CHANGE

We cannot develop a project leveraging design for educational change without recognizing the challenges of educational reform. Michael Fullan (Columbia University) – one of the most respected researchers on the topic has made a study on educational change over the last four decades in the U.S. One of his conclusions was that “changes in beliefs and understandings are the foundation of achieving lasting reform”.<sup>1</sup>

Fullan’s work centers the possibility for educational reform on behavior change. I would like to make a distinction here in how my thesis project stands in regards to his positioning. **This thesis project is not about behavior or belief change – it is the place in between where belief is negotiated that I am interested.**

**This thesis aims to work at the level of how teachers, students and school leadership (collaboratively) explore, define and even re-frame beliefs, goals, roles and behaviors – as a dynamic learning process that is born from inquiry.**

It is about creating the spaces and tools for schools to get to places of inquiry and ask – what belief is? How does it influence what we do? Does it make sense to keep certain beliefs or does it need re-defining and re-framing?

This positions this thesis in a place where all these dynamics interplay. Hence, it is not about belief or behavior change, but it is rather about an intersection point where schools learn to assign meaning to their own context and through inquiry, investigate their future possibilities.

I am aware I am not a formal educator. However that may also be an opportunity of joining the conversation with fresh eyes and new thinking – as long as I can build alliances and keep an open dialogue with the vast array of learning and educational research available.

I am also confident in the possibilities for design to be transdisciplinary – in building strong alliances and collaborations that leverage knowledge across boundaries and break the tendency to remain in silos.

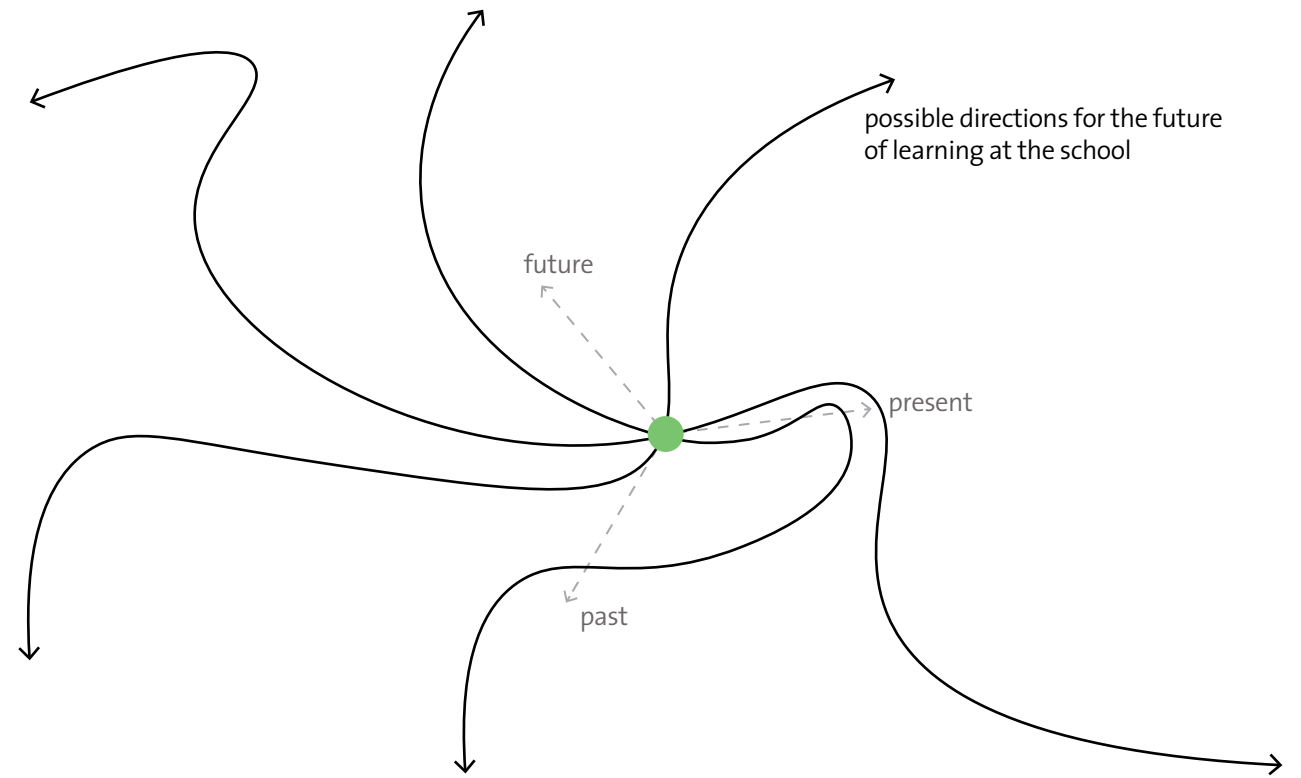


Fig.14: intersection point where schools negotiate the contradictions of change

*“My overall conclusion is that concentrating on getting and retaining individuals is not sufficient. I am not saying don’t pursue these strategies. I am saying they represent only a part of the solution and the harder work is to change schools into learning organizations”.*

**Michael Fullan, The Real Meaning of Educational Change**

<sup>1</sup> Fullan, M. (2007). The New Meaning of Educational Change

Having learned in systems that are focused on a downloading format of learning, teachers, parents and youthworkers develop skills to fire fight challenges that occur in a complex society. This is their first breakthrough in moving from rigid systems of learning to adaptive learning. "They have no idea of how to teach young people to think. Learning from the emerging future is not even present as a concept", says Ashoka Fellow Sonali Ojha.

Thus much of the daily practice with youth and kids is founded on being grounded in the present in a constant fire fighting mode to work through complex societal challenges or organizing them towards guided collective action.

If we regard teacher education and school leadership in the context of systemic issues, we can acknowledge the need for working in multi-disciplinary forms. However, integrating diverse disciplines is usually slow and non-productive. There's a major learning curve in order to start doing anything. How to bring efficiency and productivity into that system?

Most strategies to address this challenge go through training the individuals. However, this is very time consuming and resource constrained – given the scale and the time required for people to become knowledgeable.

To locate where this project aims to leverage systemic change, – we are based on the work of Professor Carlos Teixeira around engagement models – which embodies the possibility to shift from the single individual to a network acting together.

In that network, there's possibility for diverse areas of expertise. The organizational capacities are developed at scale, while the knowledge is integrated. You cannot address complex world issues by training teachers to be designers – but rather by re-thinking routines that schools are running at their organizational level. There's a need here to break down those capabilities, and distribute them through the system, connecting them in diverse ways.

**It is, hence, about orchestrating systems through which knowledge can be integrated in a generative way. Integration is the putting together of completely different pieces, and it happens through knowledge brokering of key insights, criteria and features.**

From initial insights one moves into where one wishes to go – in that space one starts to generate solutions for the goal (which is described as the *next*) – not for the problem. It is about designing for the goals, not about designing for a problem. It is hence, aspirational.

These are the building blocks on how to transform *information* into *ideas*. At the organizational level, it might be the case that it is not everyone going through the entire process. Perhaps there's one person developing insights while other is developing criteria. But it is not about the roles – it is about routines, establishing new patterns. For scaling systemic approaches to change, there needs to be a massive change in routines.

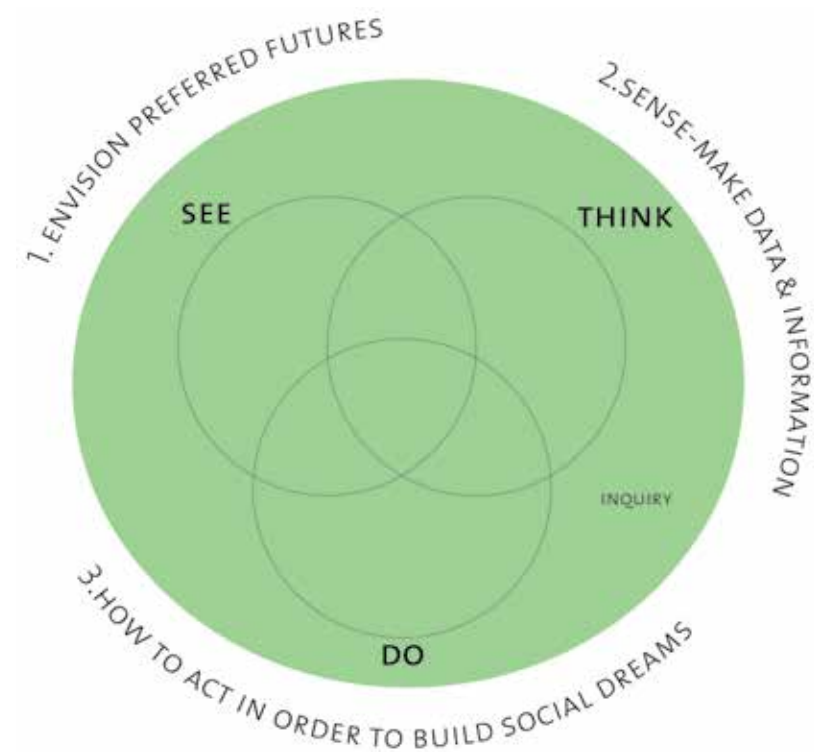


Fig.15: educational change requires teachers, students and school leadership to see, think and do differently – through creating new forms of knowledge exchange and creation



### Ecosystemic view

In his book *Leading From the Emerging Future* – MIT professor Otto Scharmer highlights the concept of *acupuncture points* as the leverage points where one could shift the system to becoming one that is generative, that values collective creativity and is based on awareness (of self and others).<sup>1</sup>

I am also framing this thesis proposition in regards to one of the acupuncture points presented in Otto's research – on how leadership is developed in the system, with the need for 'reinventing how we lead: instead of individual heroes, we need people working together to develop a collective capacity to sense and shape the future'.

In the context of education, the question becomes how does the classroom (as a micro space of the larger education system) become this place of learning towards building the emerging future?

### Educational change

In his research, Fullan recognized that 'we can turn around an elementary school in about 1.5 year, a high school in 3 years and a school district (depending on the size) in 4 years. Nonetheless we are still not talking about changing the whole system'.

In his book *The Real Meaning of Educational Change*, Fullan highlights that the new policy or innovation as a set of materials and resources is the most viable aspect of change, and the easiest to employ, but only literally. He, then, specifies three different levels this change can happen:

1. the possible use of new or revised materials (instructional resources such as curriculum materials or technologies);

2. change in teaching approach or style in using new materials presents greater difficulty if new skills must be acquired and new ways of conducting instructional activities established;

3. changes in beliefs are even more difficult. They challenge the core values held by individuals regarding the purposes of education. Moreover, beliefs are often not explicit, discussed or understood, but rather are buried at the level of unstated assumptions.

Fullan also mentions that the use of new materials by themselves may accomplish certain educational objectives – but developing new teaching skills and approaches and understanding conceptually what and why something should be done, and to what end, represents much more fundamental change, and as such will take longer to achieve but will have greater impact once accomplished.

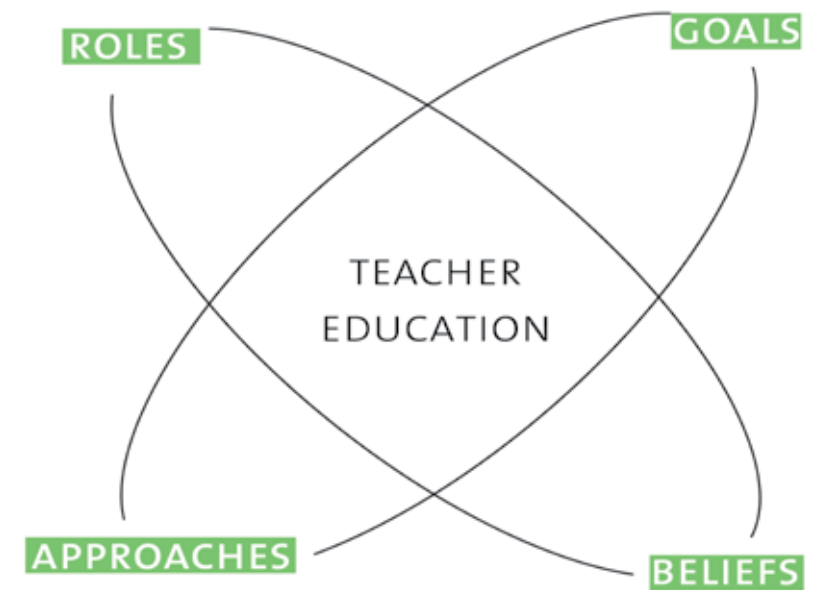


Fig.16: Michael Fullan's four levers for effecting lasting educational reform through teacher education, 2007

<sup>1</sup> Scharmer, O. (2013). *Leading From the Emerging Future*

According to McLaughlin and Mitra, “the problem for educational change implementation is not only teachers ‘learning how to do it’, but teachers learning the theoretical basis – absent knowledge about why they are doing what they’re doing; implementation will be superficial only and teachers will lack the understanding they will need to deepen their practice or to sustain new practices in the face of changing context.”<sup>1</sup>

**In my research, however, teachers are not to be “taught at” in terms of a new approach – the intention is that they are rather engaged as co-creators and if something is to be learned – that is the practice of inquiry.**

Fullan also highlights the importance of building the schools as learning communities or organizations. He says “better recruitment strategies and better ongoing professional development will temporarily increase motivation, but it will soon dissipate in the face of underdeveloped learning communities”.

This thesis project leverages the research of Michael Fullan, McLaughlin and Mitra, as well as the systems thinking principles in the work of Otto Scharmer and Carlos Teixeira. It places design within the dialogue of educational change – leveraging certain principles for educational reform, particularly:

1. the need for creating spaces of inquiry where teachers, students and school leadership can investigate the behaviors and beliefs they hold;

2. the need for collaboratively re-imagining teaching approaches and roles for and *with* teachers, students and school leadership in the face of changing socio-economic and technological contexts.

Along this thesis, I will also explore a theory of change (including the assumptions and hypothesis) – to begin with – for this work.

*“The ability to shift from reacting against the past to leaning into and presencing an emerging future is probably the single most important leadership capacity today”.*

**Otto Scharmer**, *Leading from the Emerging Future*

<sup>1</sup> Fullan, M. (2007). *The New Meaning of Educational Change*

## CO-CREATING GROUPS



Fig.18: Avnita Bir, Principal at R. N. Podar school (Mumbai, India)



Fig.19: Katie P., science teacher at Ach. First



Fig.20: High-school student, The Future Project (Newark)

### SCHOOL LEADERSHIP

A key focus group of this project is formed by school leaders that are thoughtful and engaged in the educational change process. These are visionary leaders, who are able to dream new possibilities, see, think and do differently.

Visionary school leadership is critical for early adoption of new ideas in the system. The hypothesis here is that if we test and create successful cases in cooperation with these leaders, the chances are greater that we can begin discussions with more traditional schools later. Even if this means influencing at a policy level, rather than direct leadership development work.

### MIDDLE & HIGH SCHOOL TEACHERS

Kevin Mattingly, co-curriculum director at Riverdale Country School, once referenced the work of John Hattie to highlight the importance of first engaging teachers that are willing to make a difference and transform the system.

The research published on the book *Visible Learning for Teachers* suggested – in change processes, starting by engaging teachers within 3-12 years of experience. Starting from 3 years because they would have already gone through the initial years of adapting to the school system and less than 12 years of experience because they would still be within the newer generation, pushing for new ways of thinking in education.

### STUDENTS (9-13 YEARS OLD)

Students are diverse and have unique ways of learning. In Sonali Ojha's work, social-emotional learning is about allowing the mental space for students to constantly see and sense-make the unique gifts they bring into the world.

In this model, education is not about standardizing but rather democratizing learning – which means creating learning environments that are multi-level and layered to accommodate the diverse ways of student learning.

In this project, it is a core principle that students drive their own learning – continuously moving from a stated reality given by others to create their own living dynamic realities.

*“The complex process by which local curricular decisions get made, the entrenched and institutionalized political and commercial relationships that support existing textbook driven curricula, the weak incentives operating on teachers to change their practices in their daily work routines, and the extraordinary costs of making large-scale, long-standing changes of a fundamental kind in how knowledge is constructed in classrooms”*

**Elmore, 1995** on why reforms have failed in the 60s-90s

OUTCOME

1. teachers can see the gift students embody, and
2. students think, see and do differently so they can build futures they want

THE CONTEXT

*focus groups:* a. participatory school leadership, b. change making teachers and c. middle-school students

*areas of work:* low-income and private k-12 and middle schools in major urban centers

*situated junctions:*<sup>1</sup> Mumbai (India), New York (USA) and Sao Paulo (Brazil)

THE PROBLEM | OPPORTUNITY

1. a context of accelerated socio-economic and technological change demands that teachers and students develop new skills and mindsets, so they can effectively engage and build futures they want

*Facts:* **a.** 65% of the current students will be employed in jobs that do not exist<sup>1</sup>, **b.** 25% of the next generation's workforce will be out of job at any given time due to technological automation<sup>2</sup>, and **c.** US youth spends more than 7.5 h/day on media

2. the adaptation of the teaching system is too slow to keep up with a rapidly changing society

*Facts:* **a.** 250 million students enrolled in middle school in India with only 3 million teachers available, and **b.** low quality education that is offered in numerous private institutes offering BEd degrees, a majority falling outside of the established norms for teacher education: more than 90% of teacher training institutes fall in the commercial or self-financed category (India)<sup>3</sup>

INPUTS

1. *learning tools* – physical materials, online facilitation guides, MOOCs (Ex.: diamond, stuck, fragments, etc.)

2. *academic research on education, systems thinking and design* (including: Parsons The New School for Design, MIT Presencing Institute, Aalto University, Columbia's Teacher's College, Melbourne Graduate School of Education, among others)

3. *co-participatory design methods and tools* – so teachers, students and school leadership can drive a movement of change (including: design research action learning principles and methods through 1.certifications and, 2.co-creation labs hosted within schools and districts)

OUTPUTS

*outreach & co-creation*

- n° of partners
- n° of sectors engaged in the co-creation process (government, private, 3rd sector)
- n° of schools using the platform
- n° of teachers using the platform
- n° of students outreached (through the schools)
- n° of downloads from the website
- n° of labs hosted by teachers

*impact*

- % of teachers indicating increased capacity to facilitate students' social dreaming
- % of school leaders indicating increased capacity to incorporate curriculum changes
- % of students indicating increased ability to take positive action in the world
- student & teacher dropout rates

SHORT TERM IMPACT

1. create spaces that legitimate students' unique and diverse ways of learning – so teachers can see the gifts students embody

2. students develop new ways of learning (through *speculation, referencing, re-framing, complexity, empathy* and *collaboration*) – so they can engage with curriculum in more imaginative ways

3. teachers catch up with emerging socio-economic and technological transformations – integrating them into their curriculum

LONG TERM IMPACT

1. democratized learning (a. from teacher-centered to student-led, and b. teachers, students and school leadership having a voice in co-creating ways of learning & knowing)

2. strong & resilient educational systems able to adjust and adapt curriculum requirements to local contexts in ways that foster social agency

3. students develop the skill of social dreaming – so they can build futures they want

<sup>1</sup> The Future Project, 2015  
<sup>2</sup> World Economic Forum, 2015  
<sup>3</sup> Kaiser Foundation, 2010

### *building a co-participatory movement*

A major challenge in traditional change initiatives for education is one-way implementation. Project teams create content and tools, and provide them to teachers, schools or districts in training modes. This is challenging because:

1. high turnover – as teachers leave the education system (or the school at a smaller scale), knowledge is also taken away (sources estimate that 50 percent of the teachers currently in American classrooms will either retire or leave the profession over the next five to seven years);

2. when pedagogical frameworks are downloaded or imposed by regulation, they face the challenge of accounting for the diversity of styles of learning, student goals and social contexts. The co-participatory design approach of this project allows for teachers and schools to develop the capacity and routines to consistently adapt learning tools to their diverse contexts.

### **OBSTACLES**

*open questions & emerging challenges*

- will the school existing infrastructure (financial and material resources) be enough to roll-out the project implementation?
- would teacher readily adapt new approaches?
- how to address skepticism of this new approach being truly more effective at achieving the desired result?
- would parents resist to new methods in the classroom?
- how to measure outcomes of social agency and social-emotional learning?
- how to work with teachers that currently have to multitask with limited time and resources?
- how to bridge the current school curriculum with the proposed changes in learning approaches?

**A** DIAMOND

**B** STUCK

**C** FRAGMENTS

**D** SCENARIOS

# A DIAMOND



Fig.21: students create a diamond-shaped cardboard structure to embody the preciousness of their past, New York (February, 2016)

## DIAMOND

Dreamcatchers Foundation – the not-for-profit run by Ashoka Fellow Sonali Ojha<sup>1</sup>, uses the analogy of the diamond in their work of more than 20 years with street kids in condition of extreme vulnerability in South Asia.

When children have lost tremendous reference in terms of their identity due to traumas – re-purposing life becomes the only possibility for them to meaningfully move forward.

The diamond-quality represents preciousness. Its many facets show diversity of interpretations and its shining effect translates brilliance. The diamond is a symbol of the indestructible.

**In Dreamcatchers’ work, the diamond metaphor helps children understand they must capture and bring forward what is precious about their past – if they are to move forward.**

For this thesis, the metaphor of the diamond was adapted so it was created as a collective artifact (versus Dreamcatchers’ approach to individual support). We leveraged hands-on learning to bring the metaphor forward as a collective created artifact by the group of students.

## CONTEXT

I ran two prototypes for the diamond exercise – the first was in partnership with The Future Project and the second with Global Girls Code (an after school program running at Achievement First).

In both cases there was an initial framing to the activity – which serves as a question for the students to begin the exploration. For instance – with The Future Project, it was:

*In being a community of dreamers at school – what is the value you found in being together? What is the strength of being a community? What is valuable or indestructible about your school?*

## CORE HYPOTHESIS

The diamond exercise was designed with a series of core hypothesis around its application and impact – which I hoped to test. They are:

1. students will be able to access past memories of experiences and feelings that were valuable to them;
2. students will create meaning<sup>1</sup> out of past memories;
3. from connecting meaningfully to past memories, students will develop an emotional sense<sup>2</sup> of what the future could be about;
4. from embodying the past memories into a tangible physical object, students will integrate positively their own collective past memories – and hence develop greater sense of confidence;

5. a greater sense of confidence increase the students’ ability for agency in creating the future<sup>1</sup> they want to be a part of;

6. by having to make a collective diamond, students will learn how to negotiate individual preferences and meaning in order to collaborate.

<sup>1</sup> www.ashoka.org/fellow/sonali-ojha

<sup>1</sup> Bollas, C. (2009). The Evocative Object World  
<sup>2</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness

<sup>1</sup> Freire, P. (2012). Pedagogy of the Oppressed





Fig.22: students from Global Girls Code reflect on what does coding mean to them, New York (February, 2016)



Fig.23: Katie is a highly engaged and entrepreneurial teacher who is re-imagining the learning experience of her students, New York (February, 2016)

**BROOKLYN JANUARY 2016**

During one of my first meetings with Katie – teacher at Achievement First and founder of Global Girls Code, she impressed me with her ability to look out for new resources and ways of improving the learning experience of her students.

She had already taken her coding club to littleBits and Google for field visits – allowing the space for the girls to speak with programmers and other professionals about the potential for coding.

She also shared that she had tried reading the IDEO tool kit for educators – but she thought it was a lot of information to integrate given all classes she had to prepare. However, I noticed Katie already had an initial understanding and skill to collect ideas – which she was doing mostly through brainstorming.

I noticed Katie was struggling with the skills of framing and re-framing – which are a key aspect to the practice of social dreaming. Most of the framing/narrative around the coding club has been on the excitement part of engaging with technology – and less on what technology *means* for the girls.

To leverage the meaning girls have found in coding (based on their past experiences), I asked Katie to use some of the brainstorming approach she read about to collect initial ideas.

Katie sent me back the post-it notes the girls had written – we used those insights as a pre-conversation to host the diamond activity. Having one word captured on each post-it and a brief conversation were enough to see how much the girls care for gender equality and how they see technology as an opportunity to increase women participation in society.

## INSTRUCTIONS

### 1. work in pairs: interviewing one another about their experiences, values and discoveries

Starting from the initial framing, students interviewed each other. The framework used for the interview resembles the parts of the diamond – which students would be introduced to afterwards.

I noticed the peer interviews rolled out in different ways, depending on the group size and formation – with a larger group, students tended to remain playful and with difused attention, while in the smaller groups (which was also formed around a shared interest – coding) the levels of focus and attention were higher.

WHAT DID YOU ENJOY ABOUT BEING TOGETHER IN YOUR SCHOOL OR DREAM TEAM?

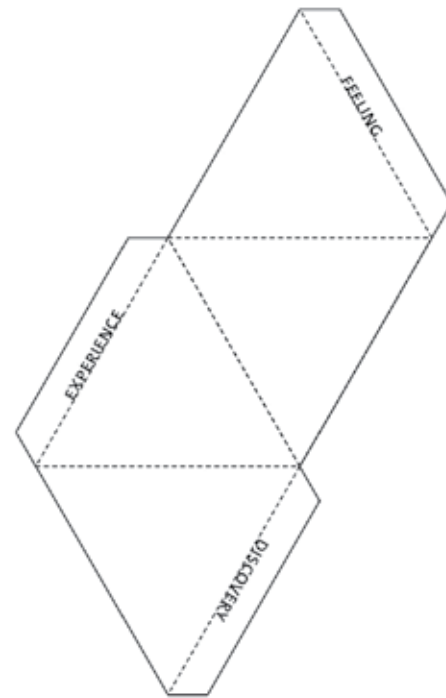


Fig.24: interview framework, New York (February, 2016)

WHAT WAS A CODING EXPERIENCE THAT YOU REALLY ENJOYED? WHAT DID YOU ENJOY ABOUT IT?

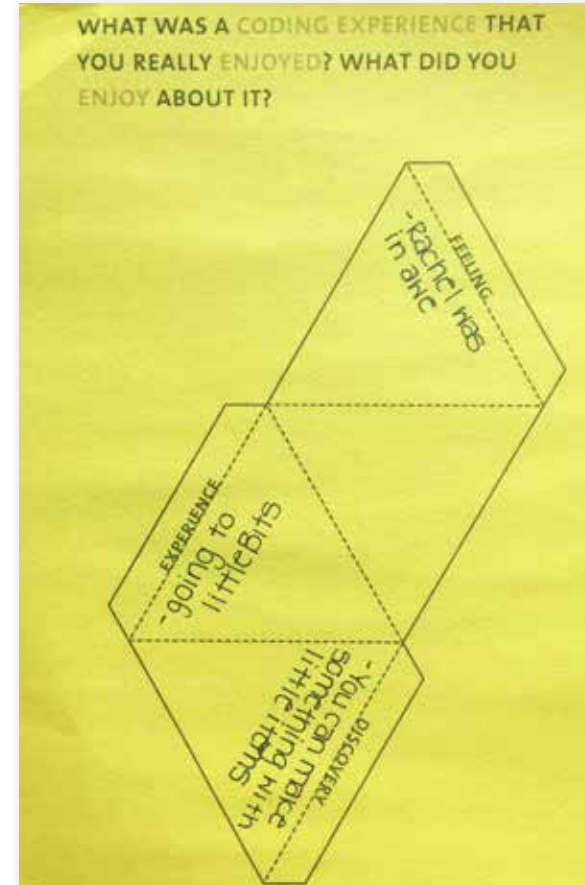


Fig.25: student says her friend, Rachel, was in awe by realizing she could make something with "little things"

WHAT WAS A CODING EXPERIENCE THAT YOU REALLY ENJOYED? WHAT DID YOU ENJOY ABOUT IT?

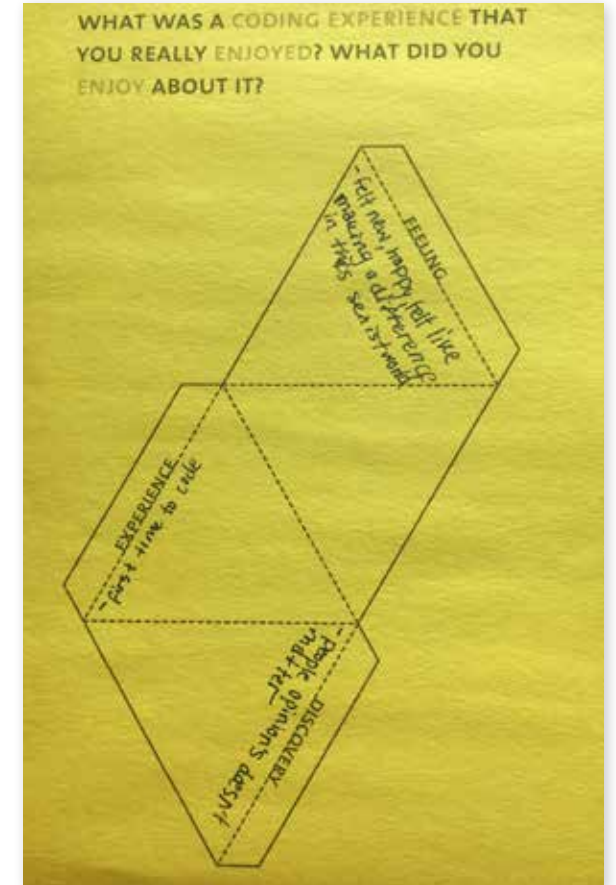


Fig.26: student says in the first time she coded – she felt like new, happy and making a difference in the world

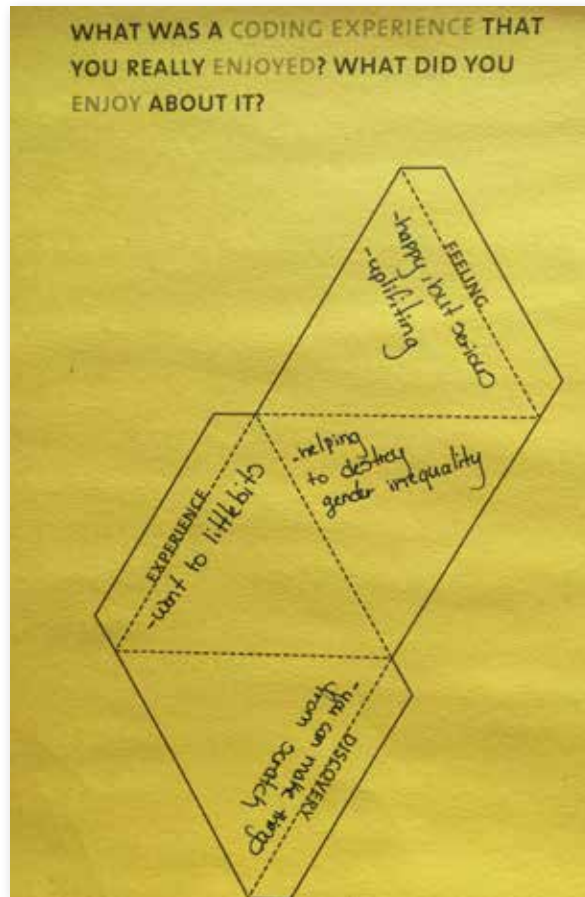


Fig.27: student says a visit to littleBits was “uplifting” because she learned one can make things from scratch – and in the same way, she could help destroy gender inequality

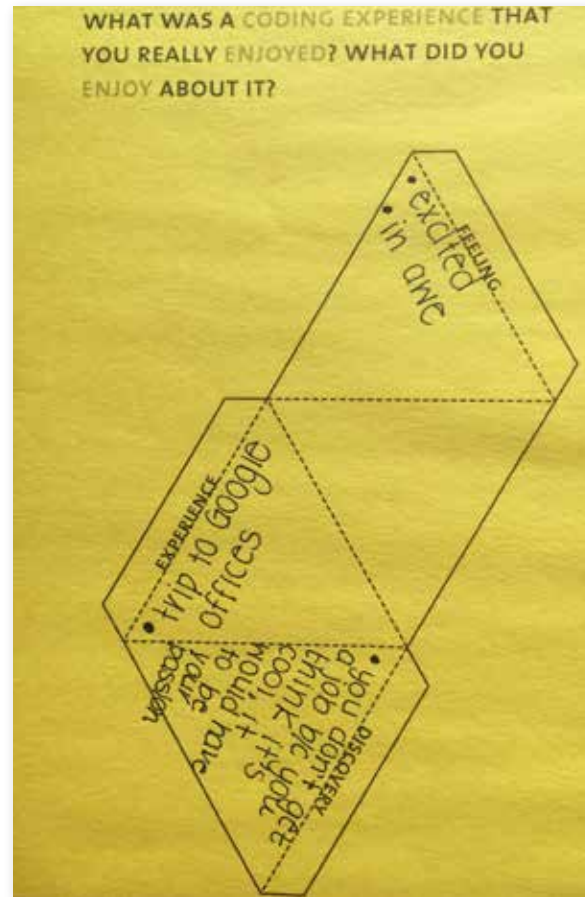


Fig.28: student says she was in awe on a visit to Google – where she learned that “you don’t get a job because you think it’s cool. It has to be your passion”



Fig.29: students interview one another in search of valuable experiences, discoveries and feelings from their past, New York (February, 2016)

## 2. building a collective diamond

Assembling the diamond was one of the points of highest energy in both prototypes I ran for this activity. Students are excited to have the ownership of creating something themselves.

I worked with larger parts of cardboard – to instill a sense of collective building. Students would have to 1. put the parts together (using tape and glue), and 2. decide what would be written on the facets (which represented the values from their past experiences they would carry forward).

For doing so, they needed to coordinate themselves in assigning roles – would everyone be involved in building the diamond? Could there be role assignments? As group sizes were different (twenty-four students in the first, versus six in the second prototype), the complexity of collaboration became evident.

The struggle of building the diamond creates a sense of intrinsic worthiness in it. Once built, students recognized their effort – they wanted to take pictures with the object, some students wanted to decorate it further and all students ended by signing their name on it (in the first prototype).

Although the diamond proposed an element of self-reflection and inquiry – students in the first group ended by using the tool to write their aspirations for the future (which involves less self-reflection and more *downloading*), rather than the aspects of the strength of their pasts.

I believe the most insightful aspect of the diamond was its engaging factor – particularly due to its size and the challenge that accompanies processes of making. **However, the idea of keeping the diamond in class as a *commitment object* has not been proved – given the size of the final object, teachers and students do not find physical places to keep it. Besides that, there's the challenge of how to keep an object in the space without it losing its value and falling to the background?**

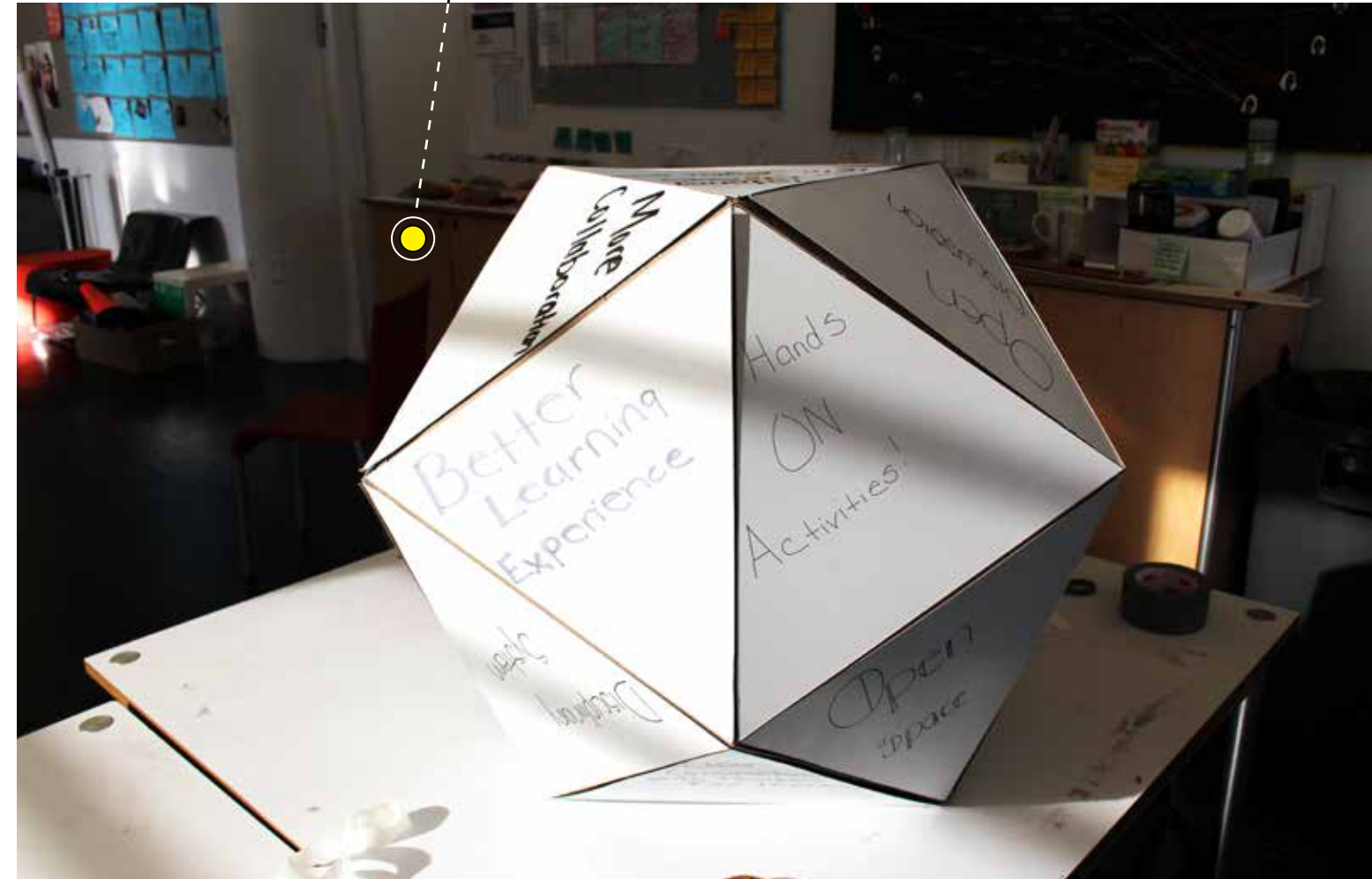
Nevertheless, the Future Project Design Lead, Anjali BalaKrishna, says "I wish all our students could make objects like this with certain frequency and keep them as reminders" – which shows the potential of designing commitment devices for classrooms.

**I believe more iterations are required 1. keeping the use of larger affordable structures and materials (such as cardboard) and 2. searching for ways to keep the object relevant and meaningful over time – so as experiences unfold during the school year, the teacher and the students have tremendous opportunities for discussing it further and working to re-frame it through empowerment.**



Fig.30: students take on the challenge of building a large cardboard diamond, New York (February, 2016)

- "not feeling like an underdog"
- "open up and not feel negative"
- "knowing that it takes time to achieve my goals"
- "when I got in trouble, I asked for help"
- "I feel I am appreciated and valuable"
- "I am happy to be on the dream team, I feel more mature and different"



*"I wish all our students could make objects like this with certain frequency and keep them as reminders"*

**Anjali Balakrishna**, Lead Designer The Future Project

Fig.31: students use diamond in a way that is different from what was planned – by writing aspirations towards their future, New York (Feb, 2016)



Fig.32: at various times, student disengages from building the diamond, New York (Feb, 2016)



Fig.33: dream director reaches out to student with the ask of 'will you re-engage?', New York (Feb, 2016)

*"In her school if you are disengaged you have a consequence. For instance, the student may be given a 'disengaged demerit'. This was the opposite of what happened in this process. Here, the framing was on the positive side with the ask of 'will you reengage'. It felt very different from what it is in the classroom and they noticed it."*

**Emma Trout**, Dream Director



Fig.34: students get ready to assemble the diamond, New York (February, 2016)

**1. INQUIRY:**

WHAT IS THE **NEXT**  
**VERSION** OF OUR *DREAM*  
*TEAM*?



**2. WHERE TO INQUIRE:**

- **BACKWARD (PAST)**
- INWARD (PRESENT)
- OUTWARD (NEXT)
- FORWARD (FUTURE)



**3. HOW TO EXPLORE:**

- **COLLABORATION**
- EMPATHY
- SPECULATION
- REFERENCING
- RE-FRAMING
- **COMPLEXITY**



**4. ACTIVITY**

BUILD A DIAMOND THAT  
REPRESENTS THE **VALUE**  
AND STRENGTH OF YOUR  
**PAST EXPERIENCES** IN THE  
*DREAM TEAM*

**OVERALL LEARNINGS & CONCLUSION**

1. completing a hard task gave students a sense of accomplishment
- hands-on is highly engaging but demands efficient classroom management

The activity takes a long time and in larger groups, it was more evident how students would engage and disengage with it at different times. In most cases, because they felt their participation was not recognized by others.

2. hands-on making and physical objects – once layered with a meaning-making process can support students in developing a new way of looking at themselves

The group dynamics was an unexpected aspect of the prototype for me. I somehow seemed to have neglected the fact that students have certain kinds of relationships to each other and that they behave differently on their own or in peers versus as a group.

In debriefing with Ashoka Fellow and educator, Sonali Ojha – she says “the reason why the diamond works is not because it is a ‘cool making thing’ like an origami. The difference is that when you create a physical object that has personal meaning layered to it, it becomes an element of awareness of the group. Students start to make connections of ‘where is this in me? where is this in my system?’”.

# B STUCK



Fig.35: students represent how they feel stuck at school, New York (February, 2016)

## STUCK

The stuck exercise came out from the inspiring work of dancer and co-founder of MIT Presencing Lab, Arawana Ayashi<sup>1</sup>. I had a chance of engaging with Arawana in one of her trainings on social presencing theater – the method she has developed for more than 40 years, and currently hosts as a part of the U.Lab MOOC *Transforming Business, Society, and Self with U.Lab*, developed by MIT on EDx.

The exercise aims to help students locate places of social-emotional holds. The hypothesis is that by making visible (through embodying) what is stopping them from moving forward, they gain agency through awareness of what’s holding them back.

## CONTEXT

This prototype exercise was performed with 24 students from a low-income public school in Newark – which is supported by The Future Project<sup>1</sup>.

Hosting the activity at the Transdisciplinary Design studio at Parsons was a conscious choice to move the students out of their environment and start the dialogue of future-making from a new place. The Dream Director says “for most of these students it is the first time they come to NYC, even though they live only 17 minutes away by train”.

These students represent the Dream Team – which is an initiative of The Future Project in partnership with the school to offer space for students to voice and create the school environment they want to be a part of. It is an initiative to democratize student participation and agency.

The stuck exercise was positioned for them as a tool to explore an inquiry or question – that as a team, they are working on.

In the context of wanting to explore a new iteration of the role, purpose and goals for their dream team – the question they chose to start from was *what is the next version of our dream team?*

## CORE HYPOTHESIS

The stuck exercise was designed with a series of core hypothesis around its impact – which I hoped to test. They are:

1. students will develop a bigger sense of self-awareness by reflecting on their places of stuck;
2. students will develop awareness of others by understanding others’ struggles in a collaborative environment;
3. students will develop empathy for one another by recognizing the similarities and connections among their stuck and the stuck of others – in a process of understanding inter-connection and the sense of not being alone;
4. self-awareness, awareness of others and empathy are the ground-basis for social agency.<sup>1</sup>

## INSTRUCTIONS

**1. students keep their eyes closed and reflect on where they feel stuck in their school life (round circle, sitting on the floor)**

I planned to start the exercise by setting the tone for what the stuck means (in terms of its social-emotional elements) and adapted Arawana’s instruction from the MOOC she led for EDx – so it could fit the school context, as stated below:

*You need a place in your school life in which you feel stuck. Which means that what you’re trying to create is not moving forward. There could be external forces that are holding it down or stretching it too thin or blocking its way. Or it could be internal forces. It doesn’t make any difference. But you have a feeling of what the texture and the quality of what it feels like for you in your specific situation to feel stuck.*<sup>1</sup>

Students had a hard time focusing and following the instruction. The group had a ritual in which at any point the teacher noticed they were losing attention, she would say “I have...” and the students would complete “self-control”. I also had to learn and apply that ritual. Hosting an activity like the stuck exercise – which embodies tremendous level of self-awareness – then became a challenge at first.

I had to improvise and skip the long instructions to keep the minimum of student attention. So I did not ask them to close their eyes neither offered them a long explanation of what the stuck meant. I rather started straight from the second planned instruction.

<sup>1</sup> www.arawanahayashi.com

<sup>1</sup> www.thefutureproject.org

<sup>1</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness

<sup>1</sup> Adapted from MOOC Transforming Business, Society, and Self with U.Lab. EDx, 2015



**2. write on a piece of paper one word that represents a place in your school life in which you are stuck and leave it on the floor**

Students were quick in copying one another. They took the pens and papers and started to write. It felt like they were in a competition towards finishing the activity first. The words that emerged from this part included:

– ‘behavior’, ‘trust’, ‘system’, ‘we don’t learn’, ‘learning cycle’, ‘not a lot of student voice’, ‘learning model’, ‘learning type’, ‘money focused’, ‘merit-demerit system’, ‘unprofessionalism’, ‘teacher trust issues’.

**3. cluster the words and make 5-6 groups**

By limiting the number of groups, I expected to raise the discussion among the students of what they meant with their individual words and also find similarities with what others had written. Making collective sense in ways that could help them understand the similar aspects and synthesize – which also involves some level of individual compromise.

Arawana’s original stuck exercise is usually played out by individuals and it has the goal of enhancing one’s perception of oneself and one’s ability to engage in action from a place of deeper awareness. By asking the groups to compromise their individual ideas and agree to a shared stuck, I was aware to be slightly losing on the nuances that arise from the meaning that one creates from personal experiences and references.

By moving from individual to collective, one of the consequences is that a group dynamics start to take shape. As in other moments when sharing was needed – it is noticeable that a few students are more vocal. They are quick in raising their hands or directly speaking up their ideas. However, my perception is that to some degree they were trying to impress others and gain leadership in the group – not necessarily voicing their original opinion or feeling.

**4. make a static stuck representation of that word using your own body**

As groups were divided, students quickly engaged in discussing what their stuck should look like. They were fast in taking up positions and seemed to highly enjoy the playfulness of the activity – which came to me as a surprise. I had envisioned the activity as a self-reflection moment.

**5. photograph the pose with a polaroid camera & sense-making**

In order to capture the stuck, students posed for a photograph – while holding a paper with the name of the stuck. Photographs were captured with the polaroid – a moment of high energy in the room, as they got excited to see the pictures.

I had planned a final round of discussion for sense-making on the activity. However, given how playful students were, I found it rather to bring it back into a moment of reflection.



Fig.36: students get ready to play the stuck exercise, New York (Feb, 2016)

**1. INQUIRY:**

WHAT IS THE NEXT VERSION OF OUR DREAM TEAM?



**2. WHERE TO INQUIRE:**

- BACKWARD (PAST)
- INWARD (PRESENT)
- OUTWARD (NEXT)
- FORWARD (FUTURE)



**3. HOW TO EXPLORE:**

- COLLABORATION
- EMPATHY
- SPECULATION
- REFERENCING
- RE-FRAMING
- COMPLEXITY



**4. ACTIVITY**

EMBODY WHAT IS NOT ALLOWING YOU TO MOVE FORWARD

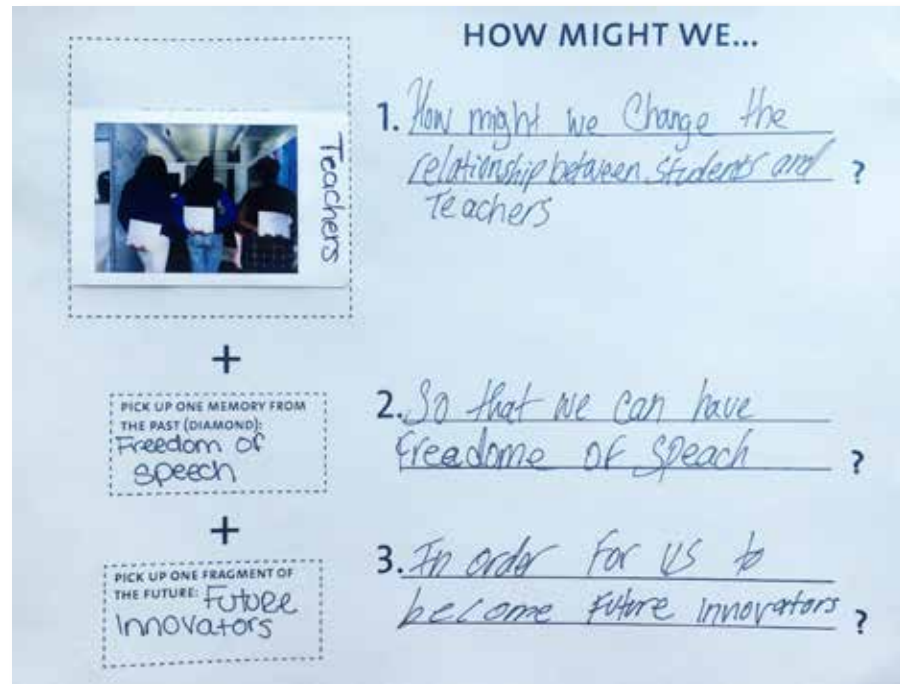


Fig.37: "not a lot of student voice" – students say they are stuck in a relationship with teachers that does not leverage their freedom of speech

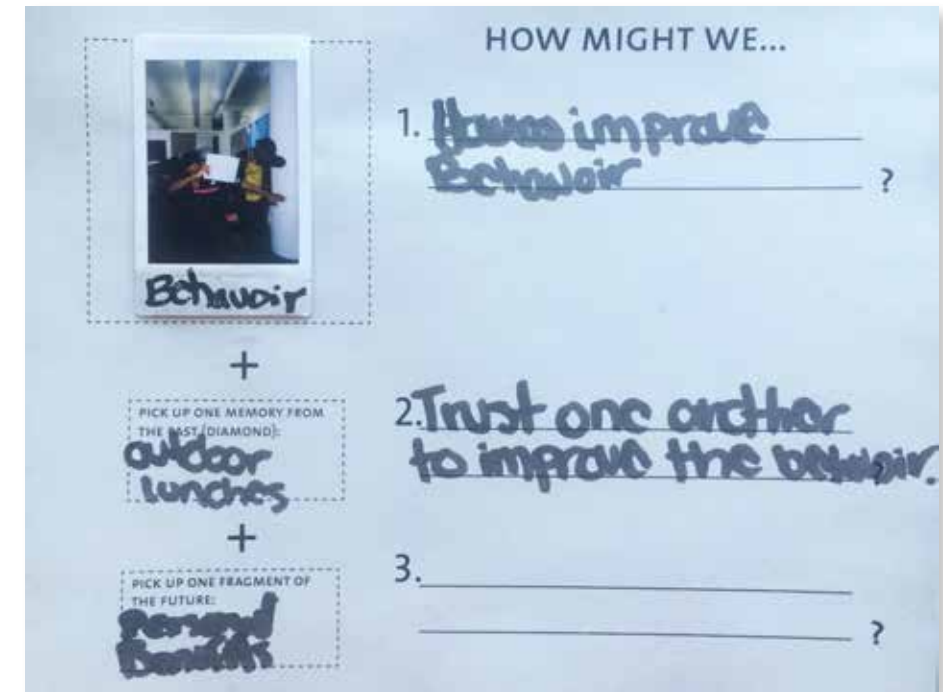


Fig.39: "behavior" – students say they cannot move forward because of their "imature behavior"

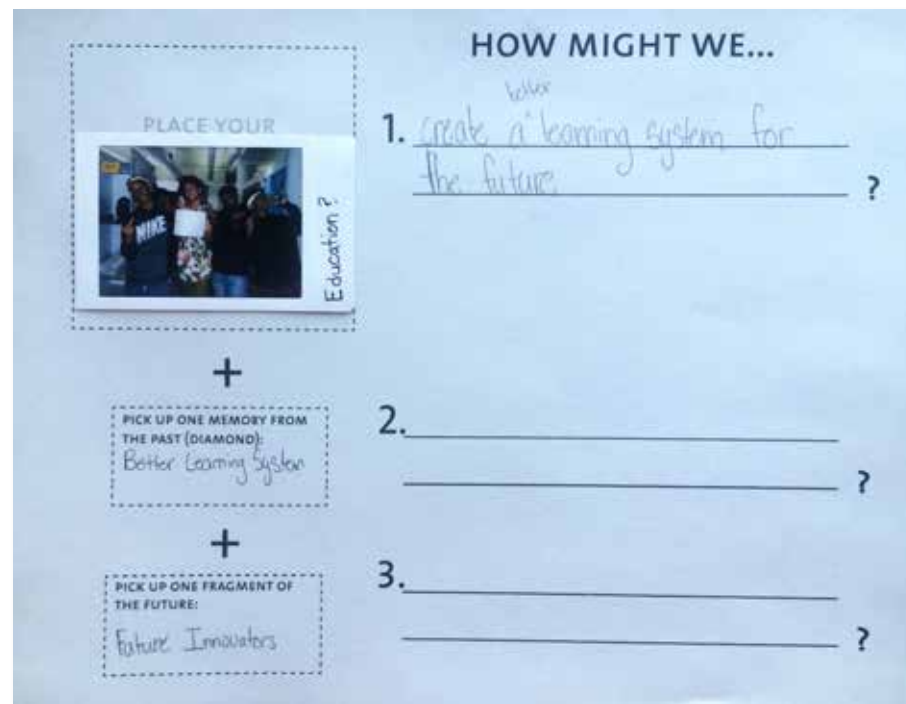


Fig.38: "we don't learn" – students ask where is education if they are not learning

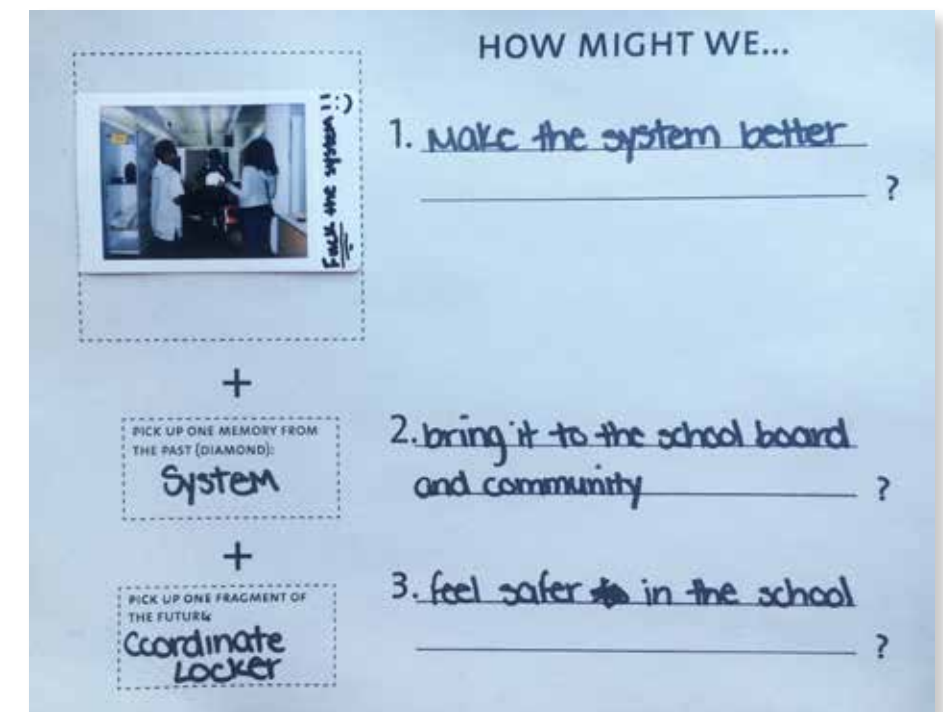
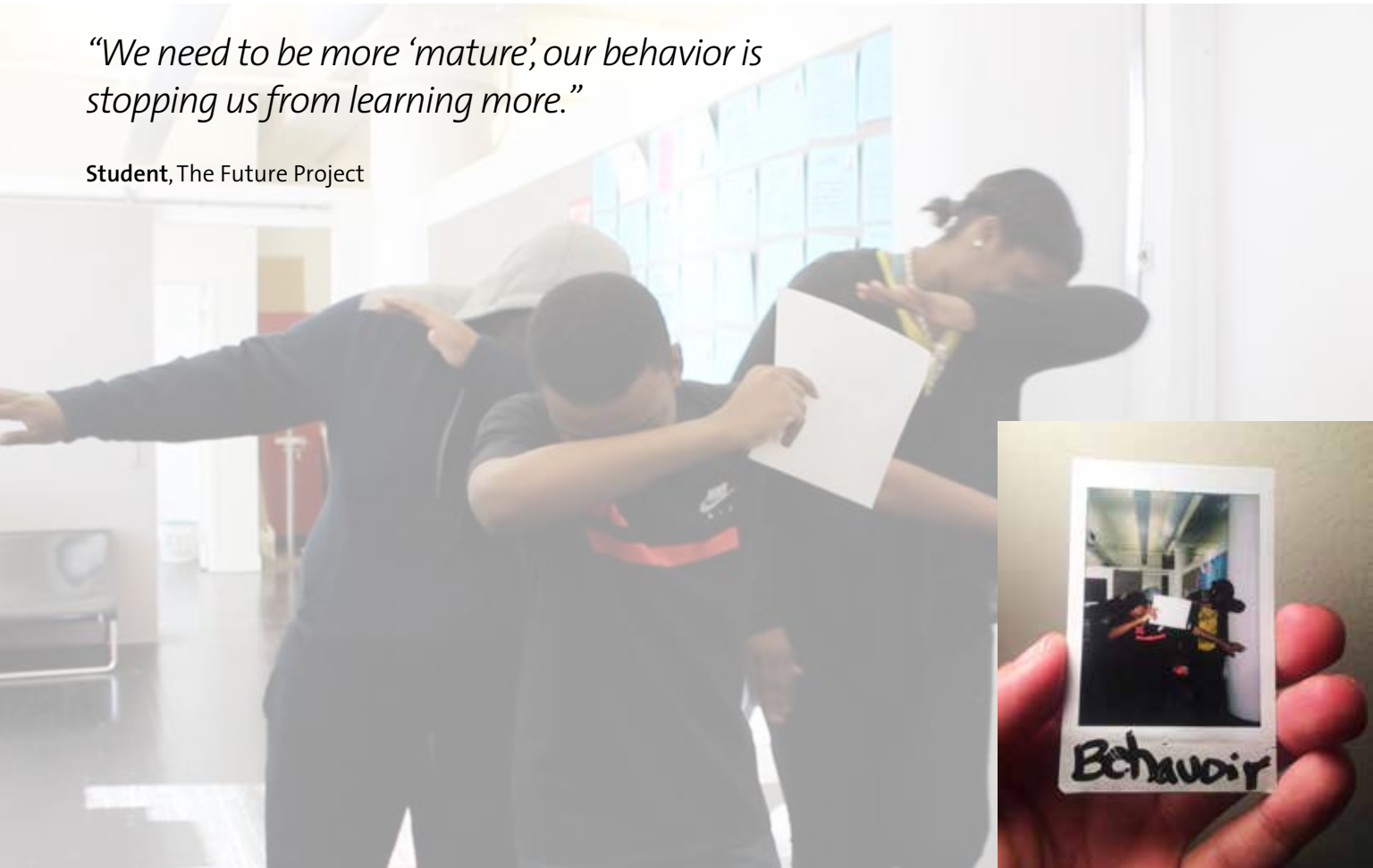


Fig.40: "fuck the system" – on the photograph, the system is suffocating the student in the middle while others raise a sign of "fuck the system"

“We need to be more ‘mature’, our behavior is stopping us from learning more.”

Student, The Future Project



#### OVERALL LEARNINGS

- *reduced amount of instructions:* students do not follow long instructions without becoming bored or disengaged. Hence, instructions need to be either quick or embedded in the process of engaging/ making something;
- *current mindsets:* students kept the behavior of wanting to finish the activity or instruction as soon as possible. I noticed they rejoiced in being the first ones to finish it. It had a sense of accomplishment;
- *working in smaller groups:* in both prototypes, teachers recommended that it is best to work in smaller groups – large groups tended to spread and create higher demand for classroom management. If the case becomes to work in large groups, then have sub-facilitators and break-up groups;
- *duration:* 2h is not enough – teachers and principals say “we need a long-term engagement. I would envision this as a cross-disciplinary initiative involving teachers over a longer period of time, maybe 2-6 months”;
- *hands-on work:* when students take-up responsibility for making or engaging with hands-on, they became more engaged;
- *scaffolding instructions:* students are quick in grasping an instruction that is clear, short and straightforward. Also keeping questions for prompting is recommended to scaffold them as they go through the activity;
- *classroom management:* it is absolutely key. Teachers are usually trained or gain that expertise in their first years of working experience. It is highly time-consuming to manage the flow of students while doing multiple activities. Hence, any design for teachers should include how it helps/addresses classroom management needs.
- *social-emotional learning:* students have a tremendous intelligence in embodying things – hence emotions become alive and visible for them through enactment;

## CONCLUSION

The initial hypothesis was formed around the contribution of the exercise towards the development of four social-emotional competencies: self-awareness, awareness of others, empathy and sense of agency.

In analysing the outcomes and impact, two challenges have emerged 1. how to measure social-emotional competencies and 2. what level of research is necessary to indicate the impact of the exercise.

From my observations during the pilot prototype I noticed some students moved from a narrative of outer challenges to one of noticing the inner obstacles – that are so connected with processes of change and with the idea of shift of mindsets and beliefs as a core component of sustained educational change.

For instance, one of the students during the stuck exercise said “we need to be more ‘mature’, our behavior is stopping us from learning more”. This student had shown a disruptive behavior in the group and many times would be left aside in group dynamics.

Students developed a level of ownership of the stuck photographs. They also seemed proud of sharing their ideas. The Dream Director, Emma Trout, says “The ‘stuck’ photograph was one of the most powerful things for my students. They made it their profile picture, shared it on Instagram”.

Two weeks after the pilot prototype I had a debrief session with the Future Project team and Emma highlighted that she had spent a considerable amount of time helping the students make sense of the experience post the day of the workshop.

Emma said “even though the students are usually not facially expressive or vocal about the impact it had on them, I know it had a big impact. But to uncover that, I need to do a lot of sense-making with them. They were very happy for taking part in it. I had to ask them to stop bullying other classmates that had missed it.”

## FINAL CONSIDERATIONS

In Arawana and Otto Scharmer's practices, the stuck exercise has now been used with adults for a couple of years. In adapting this exercise to middle school students, immediate adaptations are required regarding 1. how instructions are given 2. how much students do self versus group work and 3. how sense-making is integrated.

Framing the initial question – from which students set out for the process of inquiry – can also be a challenge. This is familiar to the experience of designers while framing the initial question. Good questions are generative and bound for interesting directions. This process might require that teachers – at least at first – also develop the skill of framing.

Overall, it is still early to say what contributions have been made towards the four skills (self-awareness, awareness of others, empathy and sense of agency). However, the pilots and collected testimonials indicated an opportunity for further research.



*“The ‘stuck’ photograph was one of the most powerful things for my students. They made it their profile picture, shared it on Instagram. The students realized that as we are trying to build the future, embodying the ‘stuck’ is about asking how does that stop us from moving completely forward. This activity is something I would do with any student. I think it is useful for every single teacher.”*

**Emma Trout**, Dream Director



Fig. 4.1 Students create narratives for the future, New York (February, 2016)

**FRAGMENTS**

The fragments exercise was inspired by a group activity hosted by Jamer Hunt and Elliott Montgomery during their speculative design studio at Parsons The New School For Design – in which graduate students were asked to find a place in New York City they had never been and (as a group) visit that place in search of fragments of the future for urban mobility.

During my visit to India in May 2015, I shared this story with Sonali – the Ashoka Fellow with whom I partnered – and we started using the metaphor in our pilots with the idea of having students develop new ways of looking into the world in search of *where is the future visible in the now?*

**CONTEXT**

The prototypes were done twice, first with 24 students from The Future Project and then secondly with 6 students from Achievement First.

The iteration allowed to experiment with two different designs: 1. with The Future Project, students explored a specific context (The New School building) and used sketching as the medium to record the fragments while 2. with Achievement First, I have given the girls ready-made postcards from the future that served as reference points for narrative building.

There are pros and cons to each approach – which I explore further in the discussion.

**CORE HYPOTHESIS**

The fragments exercise was designed with a series of core hypothesis around its facilitation model and final impact – which I hoped to test. They are:

1. students will be able to see differently their surroundings in order to discover where the future is already visible;
2. students will be able to deal with the open-endedness of future-making;
3. students will be able to learn about referencing as a way of learning;
4. students will be able to learn about re-framing as a way of learning.

**INSTRUCTIONS**

**1. introduction and initial exploration of the future**

On the **first iteration** of the activity, we started the session at The New School – which in itself was a chance to get the students in a new environment, gaining fresh perspectives. Besides that, for most of them it was the first time they had ever come to NYC – even though they live 17 minutes away by train.

I struggled with the briefing of the exercise – which I found to be the hardest part of the fragments activity. The frame of *where is the future of learning visible in the now?* felt too open and confusing for them. I also told students to look at The New School as a place of inspiration, rather than a place “to be copied”.

The intention behind this distinction was to trigger their thinking of learning how to reference a context in order to create their own – which is one of the lenses of learning adopted in this project (referencing)<sup>1</sup>.

I divided the students in groups of three, asked them to choose one floor (6th, 8th or 12th), and explore it on their own – searching for 1. what are the things that call their attention and 2. are they likely to be fragments of the future?

As students left the classroom to explore fragments of the future around the building, there was an immediate challenge of classroom management – as teachers had to run around the building to make sure they were all back on time.

On the second iteration, we were in a smaller group (six students) – which allowed more space for classroom management. Instead of asking them to explore an environment, I decided to give them ready-made postcards with photographs of art and design work, framed as “the future”.

The students had then to create a narrative – almost fiction-like of those images, and write a message to themselves from the future (anytime allowed).

<sup>1</sup> Ojha, S. (2009). Mirrors of Infinity, Reflections of Completeness

## 2. debrief and sense-making

On both iterations, we had a moment of sense-making, asking students about the fragments they encountered and what it meant for them.

The group at The New School sketched elements of the space and interactions that impressed them for being distinct from the ones they encounter in their school. However, that does not mean those exactly hold a critical future-quality that goes beyond the traditional utopias.

For instance, some of the girls were impressed with the school locks – it triggered a discussion among them about how unsafe they themselves felt at school. While most of the others sketched computers, learning centers and screens – the Apple computers at The New School were their understanding of what the future looks like.

With the girls at Achievement First, their imagination was triggered by looking at the postcards from the future. However, again their final narratives represented (in their majority) a common “Hollywood-like” future (flying objects, life in outer space, utopias of well-being).

Having ready-made postcards also implied a stated image of the future. The hypothesis would be that – being slightly abstract, the photograph would trigger unexpected thoughts. I believe there’s a limitation to this approach because of two main reasons: 1. when asked to imagine the future from an abstract image, the girls narrated Hollywood-like futures and 2. the narratives are not created on fundamental observations of their real surroundings, but solely reliant on their imagination.

An unexpected aspect of this activity was, however, the sense of empowerment that emerged from students having the freedom to explore an open-ended environment. In the prototype at The New School, when communicated to the students they could go outside the classroom and look for fragments of the future at any chosen floor of the building, their immediate reaction was to ask ‘can I go by myself?’, almost as if not believing it.



Fig.42: students get ready to leave the room to explore where the future of learning is visible within the building of The New School, New York (February, 2016)

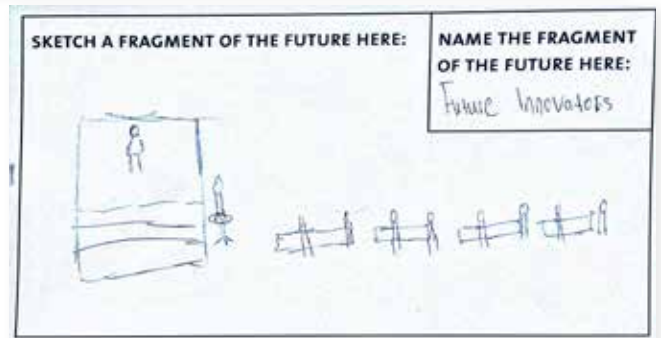
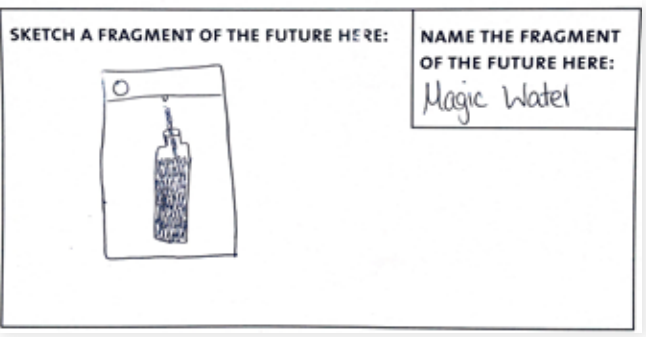
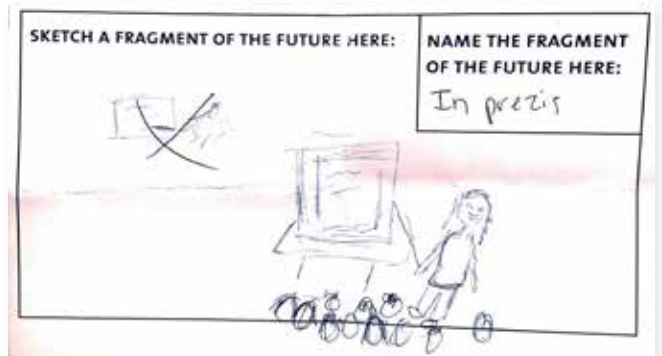
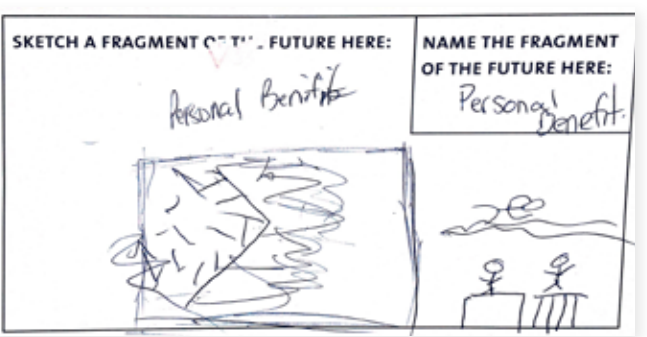
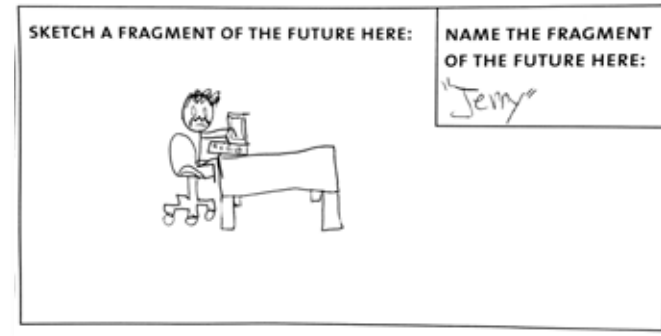
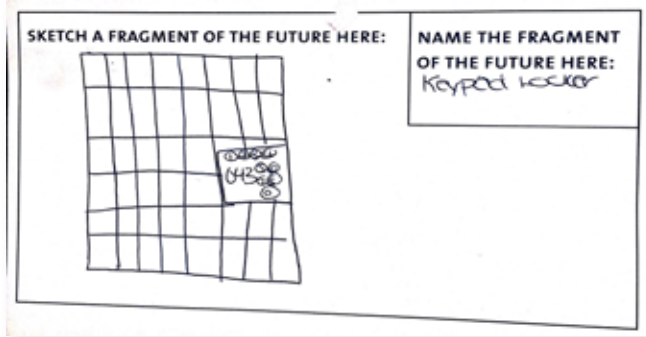
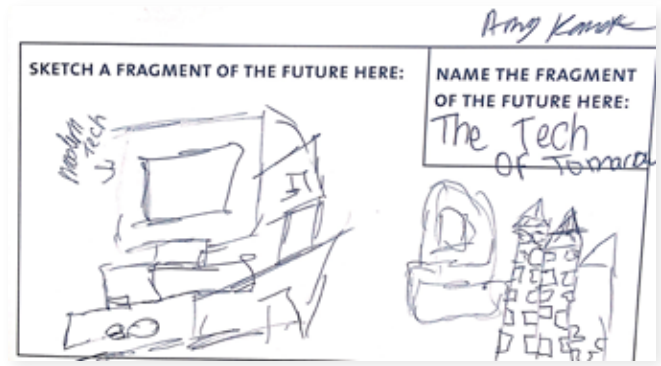
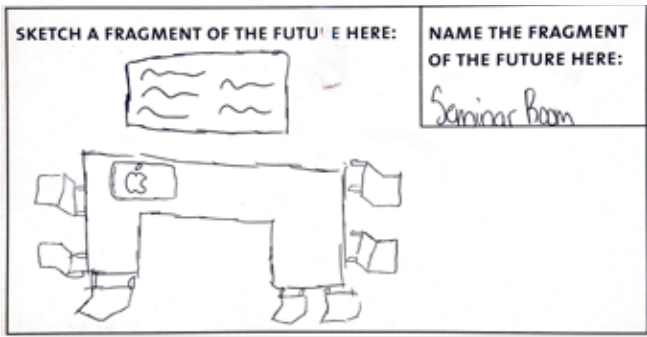
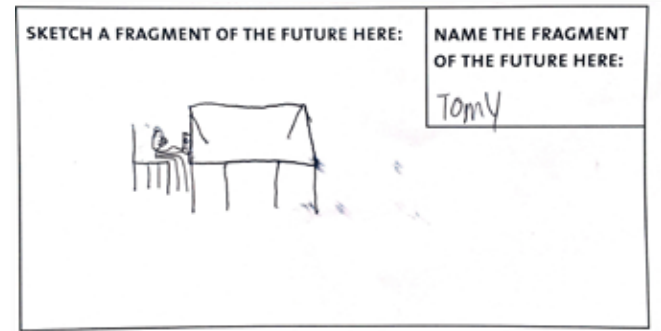
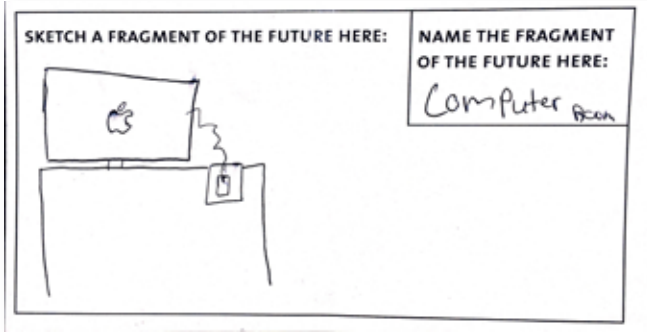
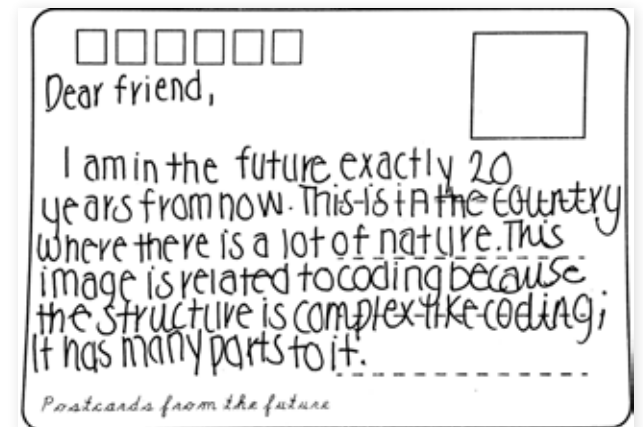
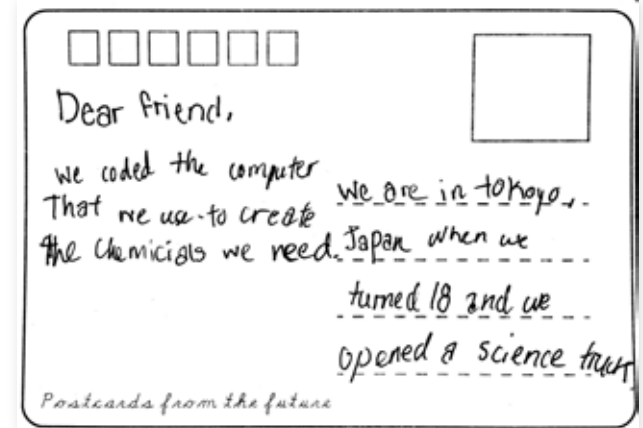
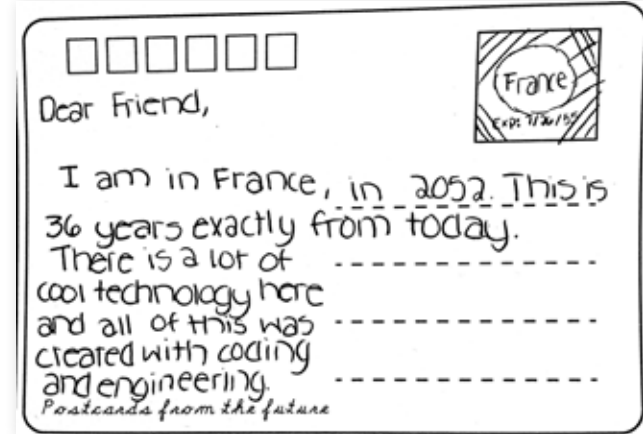
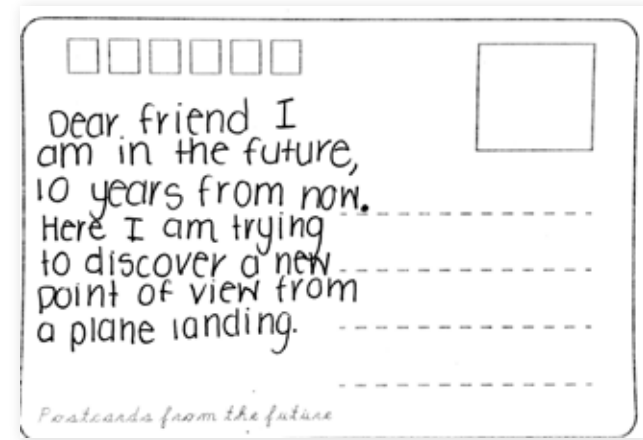


Fig.43: 1st iteration – students go around The New School and sketch what aspects of what they see (objects, experiences, conversations) they believe could be fragments of the future of learning. One of the fragments was the keypad locker – they reminded the girls how unsafe they felt at school and got them to think of what a safe future could look like



Fig.43: 2nd iteration – postcards from the future, New York (February, 2016)





## CONCLUSIONS

The initial hypothesis was that students would be able to understand and apply referencing and re-framing as ways of learning – in order to see differently the environments they are in, and find fragments of the future.

This activity imposed on students a high level of open-endedness, and most of the fragments they collected were quite present-oriented. However, students developed a sense of empowerment and confidence in being requestes (and trusted) to explore a new space, using their ways of seeing.

Further iterations of this activity are required to better frame the context of exploration for them – in ways that allow them to better see, and experience the emerging future. Having pre-stated narratives (as in the postcards) also may not be the ideal case – but they surely indicate the need to consider that moving out of the classroom and going into new immersive spaces may not always be the available option for a teacher.



Fig.44: activity flow followed by students during the fragments exercise, New York (Feb, 2016)

### 1. INQUIRY:

WHAT IS THE **NEXT**  
**VERSION** OF OUR  
DREAM TEAM?



### 2. WHERE TO INQUIRE:

- BACKWARD (PAST)
- INWARD (PRESENT)
- OUTWARD (NEXT)
- **FORWARD (FUTURE)**



### 3. HOW TO EXPLORE:

- COLLABORATION
- EMPATHY
- SPECULATION
- **REFERENCING**
- **RE-FRAMING**
- COMPLEXITY



### 4. ACTIVITY

SKETCH FRAGMENTS OF THE  
**FUTURE OF LEARNING** THAT  
ARE **VISIBLE** AT THE NEW  
SCHOOL & RELATE THEM TO  
YOUR OWN SCHOOL

# D SCENARIOS



Fig.45: students create future scenarios based on re-framed narratives, New York (February, 2016)

## SCENARIOS

The idea of building scenarios was inspired in the work of Stuart Candy, and Dunne & Raby – in which they mention the notion of *futures* not a future, to communicate the notion that future-making is about building viable and realistic lines of options, rather than predicting or making a bet on the future.

## CORE HYPOTHESIS

1. the notion of future-making (as in *futures*) will support students to develop a critical view on their current reality;
2. students will be able to build early-stage concepts of future scenarios by using basic prototyping materials;
3. students will be able to learn about speculation as a way of learning;
4. students will be able to learn about re-framing as a way of learning;
5. the different set of scenarios created will support students question their current sense of agency.

## INSTRUCTIONS

1. **context setting**  
 In the prorotype at Achievement First, we started by sharing two trends with the students – to support them building the scenarios for the future of jobs (as this was the topic they decided to work on):
  - a. employment: 25% unemployment rate - due mainly to automation. What kinds of job will we take then? Schools focus more on collaboration, creation and leading and less on monitoring, calculation and execution.
  - b. inequality: today the top 1% of the population receives a quarter of the income in the United States. Over the last 25 years, the average income of the top 0.1% has grown 20 times compared to that of the average citizen.

MARK ON THE MAP  
WHERE YOU ARE  
BUILDING YOUR FUTURE:

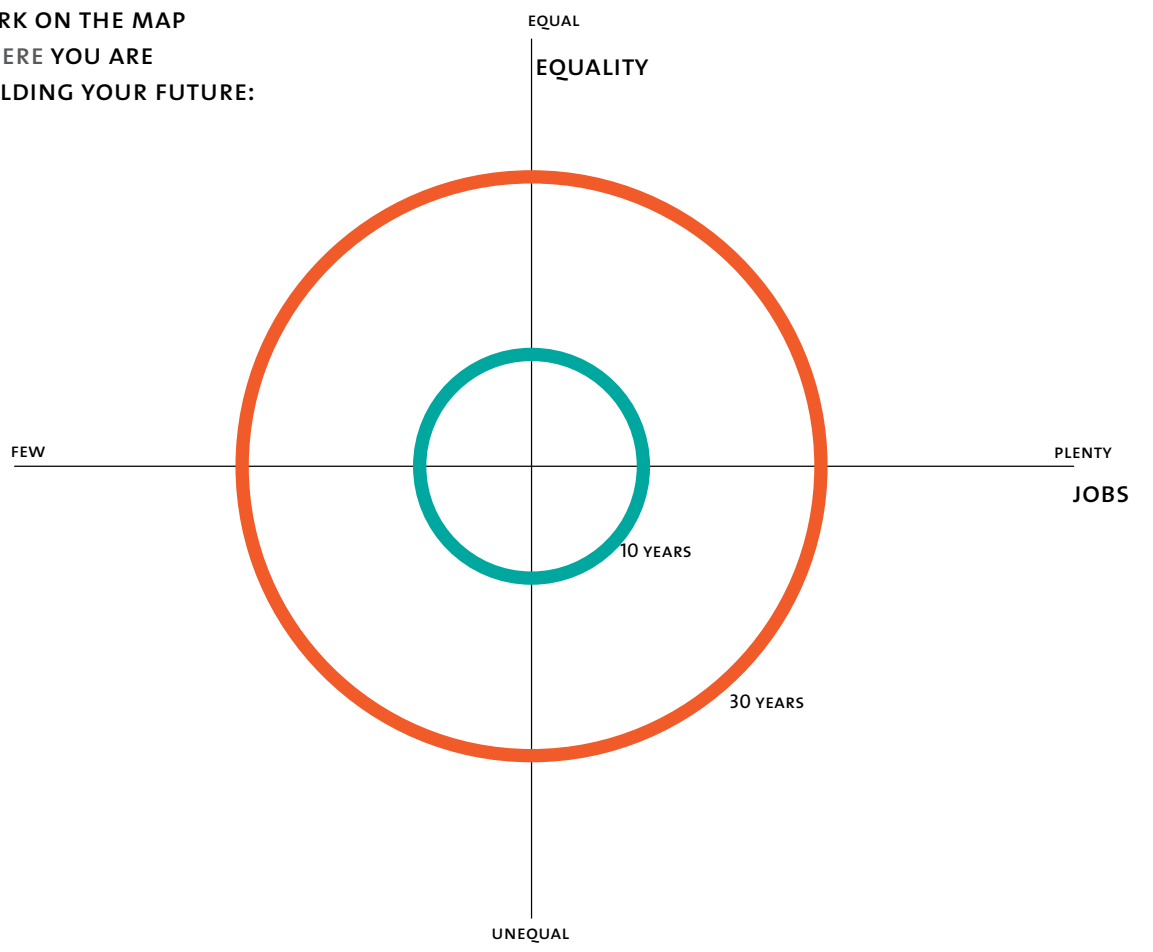
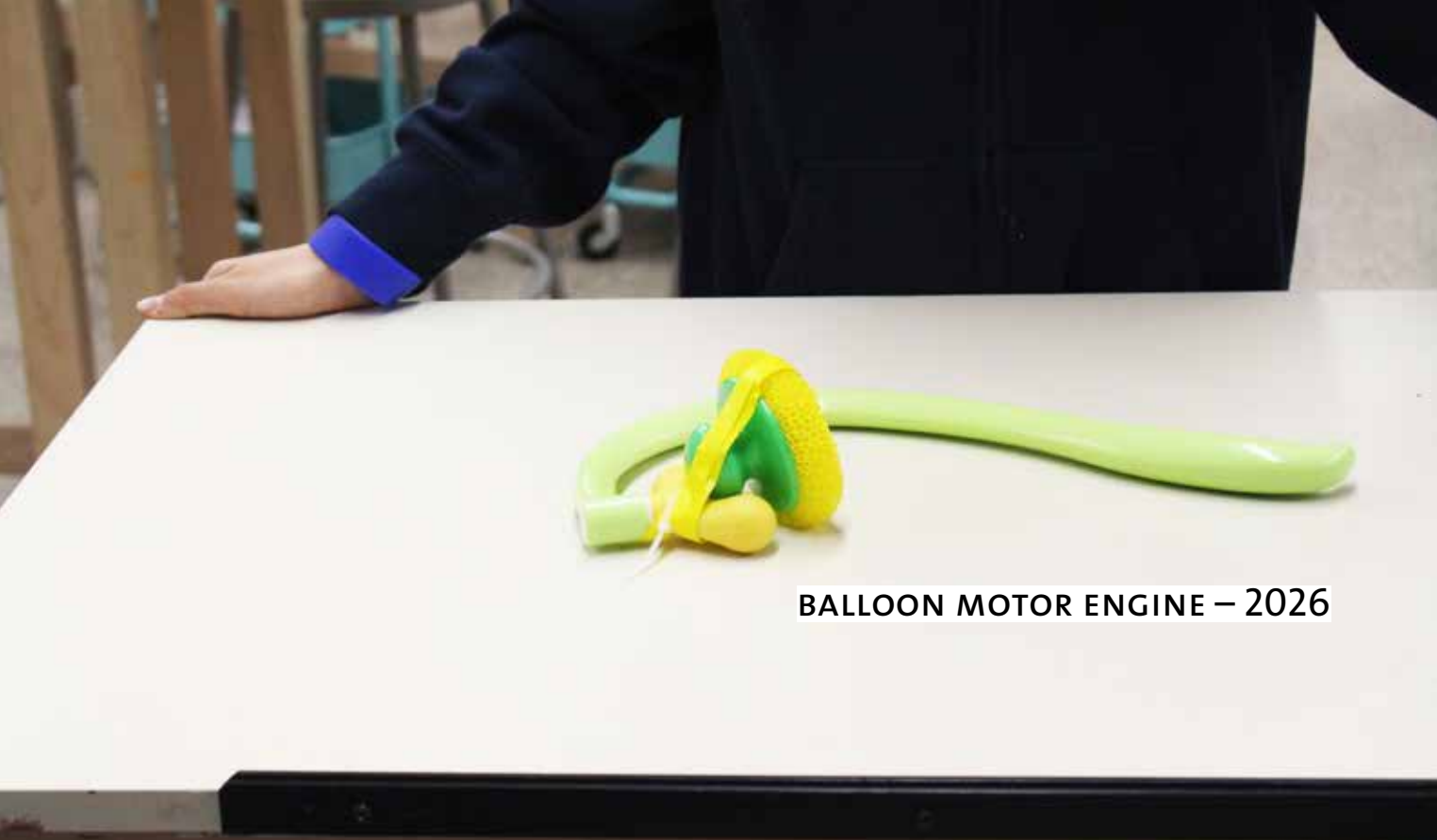


Fig.46: activity framework to support students building future scenarios, New York (Feb, 2016)



**BALLOON MOTOR ENGINE – 2026**



**THIRD PARENT – 2026**

As the girls understood that coding could actually contribute to social inequality (as it automates jobs), they were able to grasp a new frame to coding – which was different from the positive utopias they were holding before.

I believe the opportunity to re-frame coding opened the space for them to explore the future of jobs in coding in new ways – that felt genuine and meaningful to them.

## 2. scenario-making

From a place of re-framing, I shared with them a framework that had four future scenarios – from a future of many job options and reduced or nonexistent social inequality, to one in which unemployment and social inequality were rampant.

These futures were also placed according to timeframes – from the near future (10 years from now) into a distant future (30 or 50 years from now). The diversity of options was key to raise the discussion on what future-making actually is about – which is involved with the process of choosing, and constructing it.

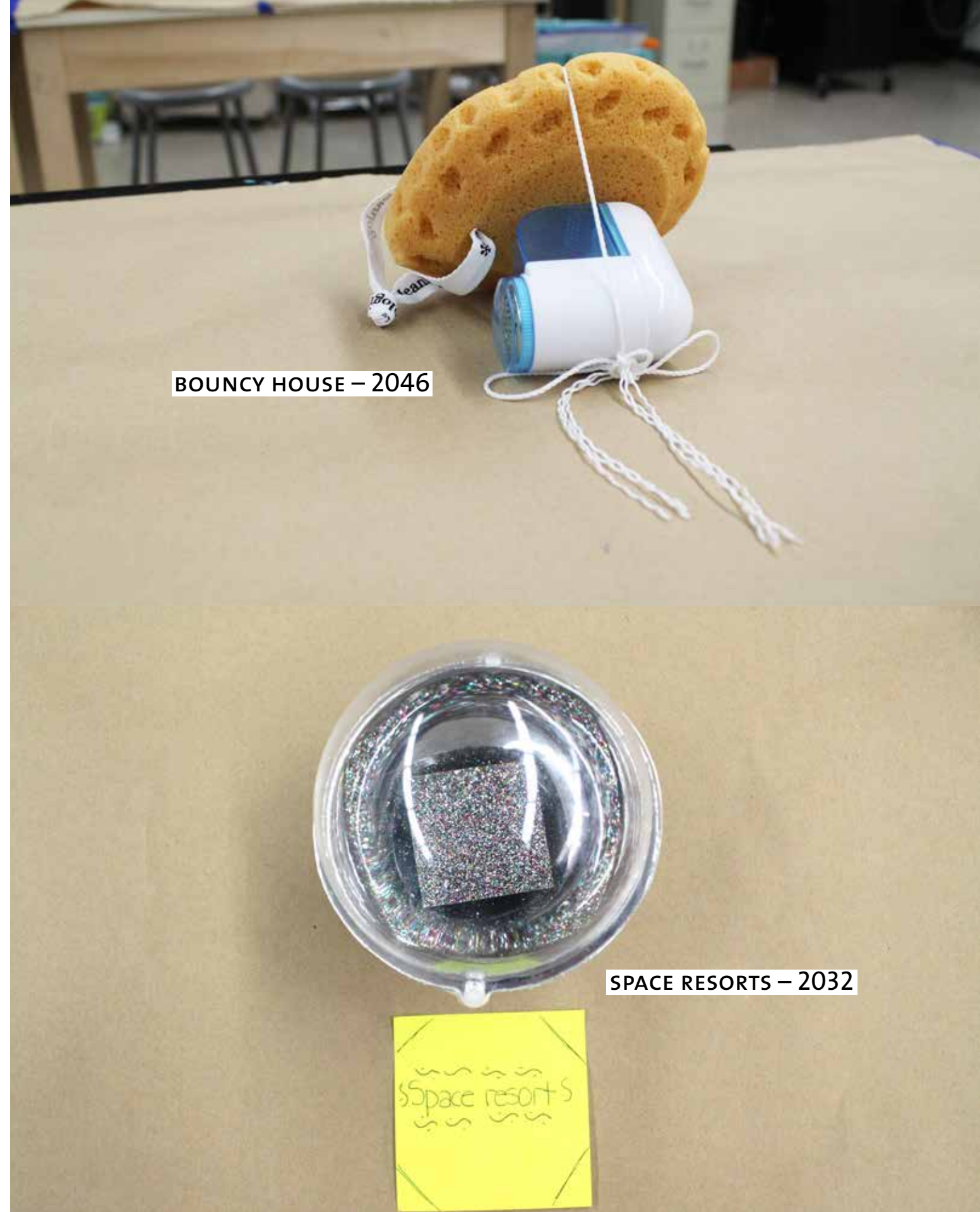
The questions used in this section were followed by debriefs – which acted as spaces for sense-making, in which the students, the teacher and myself would reflect upon their choices.

- choose what future do you think you will go to?
- individually choose one fragment of the future (from the previous activity) and place that on the future timeframe you have chosen;
- choose one meaning from the diamond you want to carry forward;
- pick up objects (€ 99 stores) and create a wearable or a tool that your future job would require;
- debrief: share the job of the future you have created – and reflect on its possible implications.

Among the scenarios created, one of the girls designed the tools a third parent would use in the year 2026. She said by then, families would need to hire one more parent – who would join the family on a contract basis. The third parent would bring in his/her own tools, which would be developed through coding. While another student said she would be a builder of bouncy houses, in the year 2046.

"Coding is automating a lot of jobs, so the inequality gap is actually increasing. In that context, how might you design a future that will help eliminate that gap instead of exacerbating it? That was a really interesting point to give the girls something to think really critically and deeply about, as opposed to this sort of utopia that they imagine."

Katarina Pasinsky, Teacher at Achievement First Bushwick Middle School



BOUNCY HOUSE - 2046

SPACE RESORTS - 2032

**CONCLUSIONS**

The possibility of re-framing what coding meant, the open choice of choosing a future scenario they would be constructing upon, and the engagement with material objects were the high points of this activity. Before the activity, the girls would present a standard version for what coding meant for them (increased job opportunities, women in technology, etc.) – but as they sensed their real possibility of re-framing and building upon their ideas and values, they were able to construct meaning.

The use of the postcards from the future (the fragments activity), as a prompt was also helpful in allowing them the boundaries to create. Besides it, I noticed the hands-on activities feel very natural to students in their age. In the prototypes I ran, they quickly engage in making and narrative-building.

This activity also needs a longer time. I suppose in future cases, the teacher could keep the objects created and come back to them to reflect about implications of the future the students have created. The objects could be kept over several classes and used as a tool upon which students could further learn about future-making and critical thinking.

In this prototype itself, students wanted to keep their objects – and the teacher suggested the timing (30 minutes) was too limiting for it – that it should be over a longer period of time, so sense-making could take place. She suggested it to be an after school program, running along the semester duration.

In further iterations, it would also be recommended to experiment with different visual forms to represent the future – for instance, short videos, photographs, illustrations, role-plays are some of the possibilities. These could be offered as choices for students to explore (considering the affordability and access to these materials and tools). The hypothesis here is that diverse visual forms will give students new angles to look at the futures they are constructing.



*"I would like to go to a future that is unequal and has very few jobs – because in that way, I could act and change it".*

**Student,** Achievement First Bushwick Middle School

**1. INQUIRY:**

WHAT ARE THE **JOBS OF THE FUTURE** FOR GIRLS WHO CODE?

**2. WHERE TO INQUIRE:**

- BACKWARD (PAST)
- INWARD (PRESENT)
- OUTWARD (NEXT)
- FORWARD (FUTURE)

**3. HOW TO EXPLORE:**

- COLLABORATION
- EMPATHY
- SPECULATION
- REFERENCING
- RE-FRAMING
- COMPLEXITY

**4. ACTIVITY**

IMAGINE AND CREATE **BELIEVABLE SCENARIOS** FOR THE FUTURE OF WORK

The different learning tools that have been prototyped in this project are seen as early stage possibilities for what this work could be about. The design of these learning tools can be done in different ways, such as:

**1. by integrating tools that already exist** in other fields (particularly action research, design research, ethnography, and co-participatory design), and adapting them to the context of K-12 education. For instance, this is the case with the stuck exercise, that has been created and used by MIT's Presencing Lab on leveraging systems awareness and increasing people's capacity to see themselves within larger systems.

**2. by designing new learning tools.** For example, in the case of the diamond exercise. We started the design process based on a metaphor, that was found in the Dreamcatchers Foundation's work in India, and layered it with a physical element of the cardboard, built in larger structures. Designing the tools and then piloting them with teachers is an opportunity for direct understanding of what it means to create learning tools – which can further inform how to handle a co-participatory design process with teachers.

**3. by offering teachers the principles upon which they can re-frame and design the tools themselves.** In this case, teachers would access the core principles (currently they include: future-making, construction of meaning and social agency), and go through the process of re-framing them (do they agree or disagree with them?) and co-design (what learning lenses are they looking for? What kinds of inquiries they wish to raise? What materials and visual aspect is best suited?).

In an attempt to integrate these future possibilities, **Flip it Forward** was created. It leverages social dreaming, as a pedagogical approach, founded on design methods, and social emotional learning, to enable students to build the worlds they want to be a part of.

**The project vision is to become a learning movement on social dreaming – while taking schools on a journey of radical decentralization from teacher-centered to student-led learning.** The design includes elements such as:

1. digital-physical interface: online content (tools, principles and frameworks), that are combined with physical objects (classroom learning tools)

2. co-creative content and processes: teachers and school leadership could access online co-design tools, so they can re-frame, define, and create their own learning tools.

Flip it Forward leverages emerging trends in education, such as blended learning (by combining online and physical learning), online education (particularly the MOOCs – Massive Open Online Courses) and the Maker Movement. However, by layering the making process with the student's construction of meaning, the physical objects become their representations of new dynamic realities. This means students would go beyond engaging with the aesthetics or evocative element of the objects to actually ascribe meaning to them, and construct new realities.

*"We can produce many examples of how educational practice could look different, but we can produce few, if any, examples of large numbers of teachers engaging in these practices in large scale institutions designed to deliver education to most children"*

Elmore, 1995 on why reforms have failed in the 60s-90s

# FLIP IT FORWARD

*exploratory tools for social dreaming*



approach

peer interactions

pre-planned lesson

learning tools

curriculum content

## ONLINE PLATFORM

As teachers move away from using textbooks to increasingly tailoring their classes with online content, the online platform allows them access to:

**a. LEARNING AND DESIGN PRINCIPLES:** the pedagogical framework and principles behind social dreaming – so they can learn, mix and match them to their own unique contexts;

**b. LEARNING TOOLS:** materials can be downloaded and re-framed to suit the particular school or classroom context, and;

**c. CO-CREATION CONTENT:** through which teachers, school leaders and students can co-create new learning tools that best suit their unique contexts.

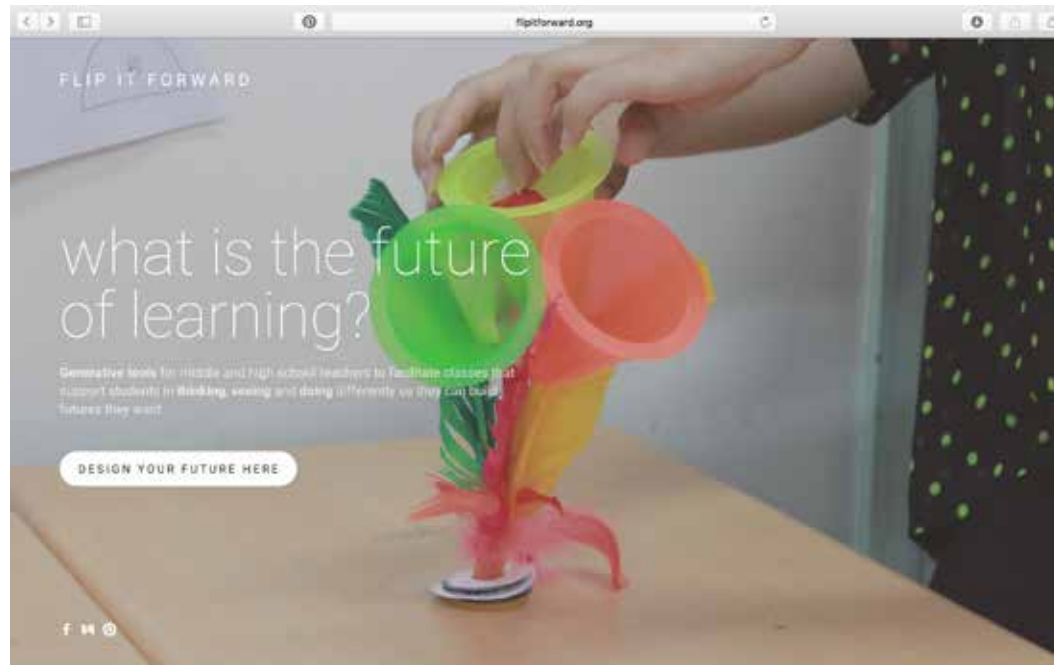


Fig.46: teachers access online platform to prepare their lesson activities, learn the principles of social dreaming, or co-design the learning tools themselves



# ONLINE | OFFLINE TOOLS

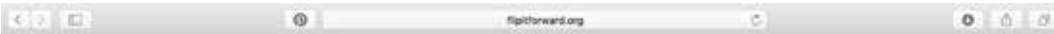
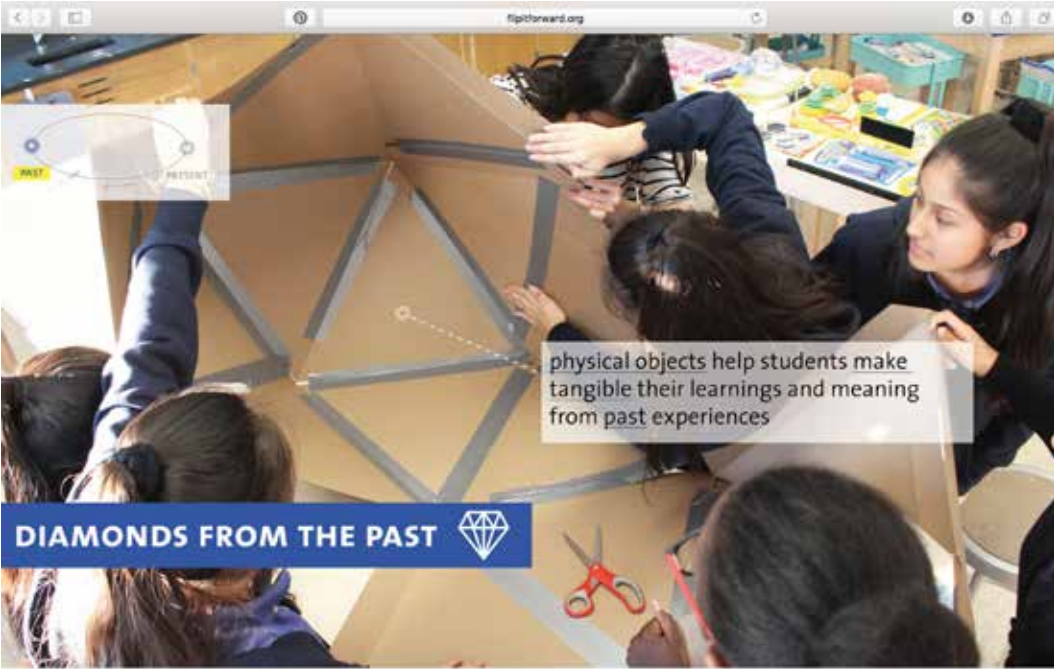
exploratory tools for social dreaming

## LEARNING TOOLS

An online library of tools allow teachers to search for tools based on:

1. inquiry: forward, backward, inward, and outward;
2. lenses of learning: collaboration, empathy, speculation, referencing, re-framing, and complexity.

Learning tools and materials can be downloaded and re-framed to the particular school or classroom context. Teachers can also watch online videos on how to facilitate the activities. Our prototype partner in New York, The Future Project, says "teachers could either download the facilitation guides and make the materials themselves, or they could request for the materials to be delivered to their schools. We are currently developing a content platform for the Future Project, and we believe content such as this one is what we are looking for to provide to our network of schools".



"This has been creatively difficult."

— High School Student, The Future Project



Fig.47: facilitation guides can be downloaded and printed by teachers, or ordered online for the delivery of crafted booklets



Fig.48: teachers can print templates of activities and put together the required materials, or order them for delivery



INSTRUCTION BOOKLET

GROUP SIZE: 6-10 students  
 TIME: 2-3h  
**OUTCOMES**  
 increased collaboration    sense of ownership  
 increased trust    meaningful learning

Fig.49: teachers can watch online videos while preparing the learning activity. They can also see the social-emotional and agency outcomes of each tool

## CO-DESIGN OF LEARNING TOOLS

*generative dialogues: from teacher-centric to learner-centric conversations*

### CO-CREATION CONTENT

The co-creation content includes online videos (set up as a MOOC – Massive Open Online Course), in which teachers can learn about the framing of the core principles behind social dreaming. They can also download co-design facilitation materials, so they can host sessions at their own schools to co-create learning tools, that best suit their unique contexts.



Fig.50: scenario – teachers co-create learning tools based on 1. design principles, and 2. co-participatory processes

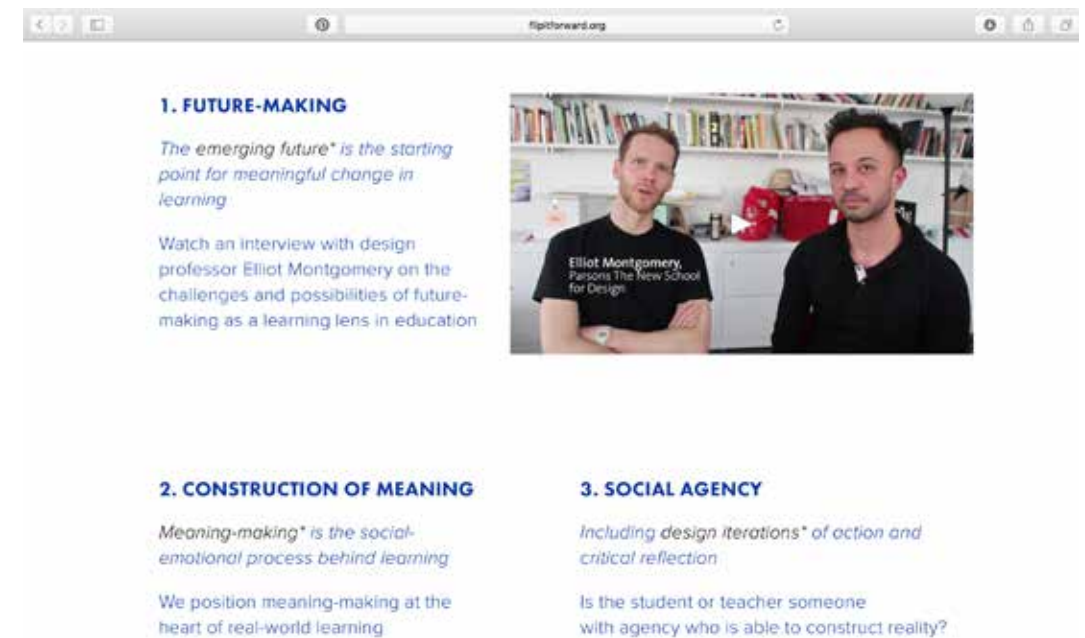
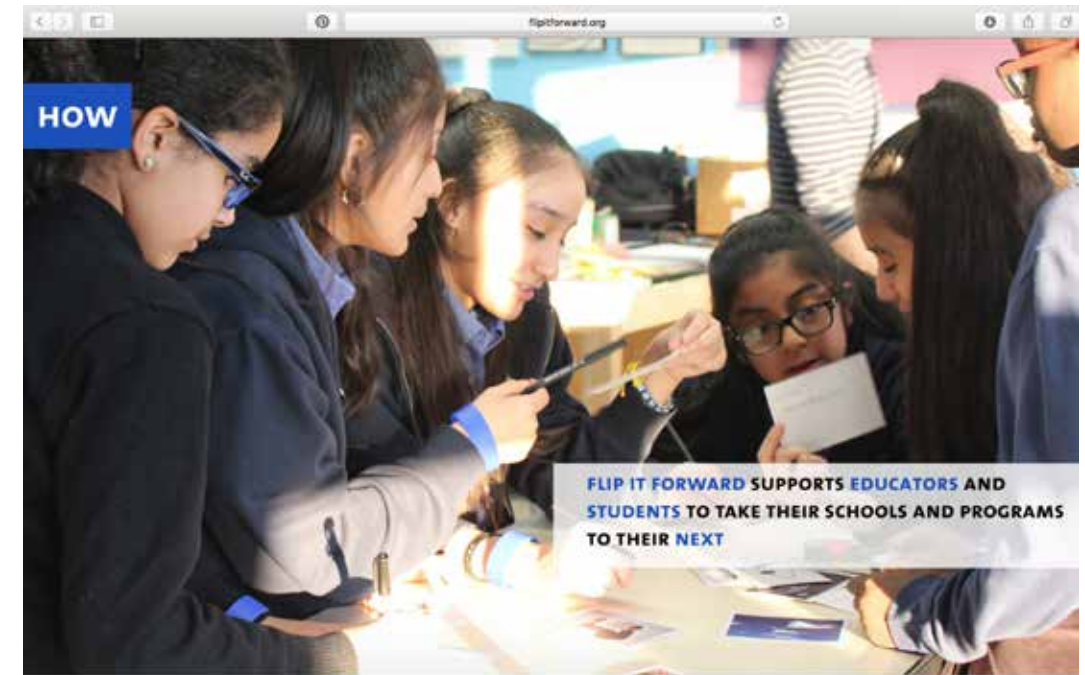


Fig.51: Massive Open Online Course (MOOC) for teachers to learn and host co-designing sessions of learning tools for social dreaming

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## 09. CONCLUSIONS

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Bringing in fundamental change in education is a long-term process of re-thinking (and even re-imagining) beliefs, roles and goals for it. In the diverse spectrum of schools, developing one solution for all is an inadequate approach. Hence, co-participatory design, as a medium to support the co-creation of learning tools, and learning goals can become a powerful instrument to enable teachers, students and school leadership to gain voice and agency into the systems they are a part of. Some of the early conclusions I am drawing from this research are:

**1. the learning experience should be arranged around the student's capacity to construct meaning out of their education:** it is fundamental for learning experiences to be designed around processes of construction of meaning, in which students can make sense of their contexts and gain agency to construct new dynamic realities.

**2. the ability to speculate alternative futures and pasts is a fundamental part for students to increase their capacity to transform current social realities into worlds they want to be a part of (social dreams):** design futuring and social-emotional learning are critical pieces to support students make that leap from a current system of downloading information to one of constructing knowledge from the emerging future. This must come from the placement of learning in the *next* – the emerging future becomes the point of reference from which students educate themselves.

**3. re-assigning meaning to learning through visual objects and embodiment enable students to materialize (by giving form) their new dynamic realities:** in the prototypes done in this thesis, I noticed that using physical objects and embodiment can support students to increase their ability to explore, define, and even re-frame beliefs and goals – as a dynamic learning process born from inquiry.

**4. in a context of accelerated social and economic change, teachers must re-frame their roles in new ways:** what are the teachers becoming in the face of new needs for education? They could, for instance, act as facilitators, leveraging the possibilities for change within the classroom. However, being themselves educated in different frames of learning, they are required to take leaps into the now, in order to gain increased agency into the system.

**5. co-participatory processes are fundamental to enable authentic and lasting engagement in educational reform:** in the face of diverse contexts in which schools operate, one solution for all is an inadequate approach. This thesis proposes co-participatory processes as a way of engaging with school diversity, and enabling its actors to take part and create new principles, and learning tools they wish to operate from. Fields such as co-participatory design have a role in extending its knowledge base and finding adaptable application in fields that are demanding for it, such as education.

It is tremendously hard to legitimize the work of social dreaming in a context in which it barely exists. Most of the cases using design thinking in education are working towards achieving outcomes that are not embodied within the learner – in the sense that they are decoupled from the student's sense of identity and possibility. They are mostly logical, or at most, problem-solving ones. The place in which embodied outcomes emerge is one in which students explore the formless (of the emerging future) and try to give it form, ascribing meaning to it.

The question is then, what intersection of work does social dreaming exist on? It is potentially one in which education is trying to get students to build capacities to sense the formless (turning it into visible shapes), making it actionable, and grounding it in reality. As a consequence, where students place themselves on a trajectory of self-reliance becomes the core indicator of the quality of their learning experience.

In order to play a role in building such learning environments, design needs to collaborate with other areas that are more versed in practices of social agency, change, and construction of meaning. For instance, social psychology, social-emotional learning, systems theory, groups theory or awareness-based practices.

**If design can take part in this challenge to reposition the core pursuit of education – from learning and making sense of the past to learning from the past and the emerging future so as to act appropriately in the present, learners could actually have the opportunity of exploring and understanding how they can become a part of the story of the future rather than holding onto and embodying the story of the past.**

A core element of this thesis project is that it becomes about principles with a series of flexible methods – rather than a booklet of prescribed methods. This comes from an understanding that given the specificity and uniqueness of each context (school, teacher, district) – guidelines and recipes may be of limited value in practice.

Such as highlighted by The SAGE Handbook of Action Research, the emphasis on flexibility allows for themes to emerge in ways which ‘democratise authority largely through craft skills and processes of dialogue, rather than by rigidly following fixed methods or protocols’.<sup>1</sup>

This project is hence not about designing a guidebook or toolbox but it is rather about opening the space for inquiry. The critical reflexivity and enhanced participation of teachers, students and school leadership may strengthen their emancipatory potential for social dreaming.

Hence, in moving forward this research, it is important to bear this point of reference in mind – and continuously engage the schools in the process of co-designing the learning goals and tools.

### *Lines of action research*

In order to facilitate action-taking is important to define pillars of action research to be continued further – as this project is developed beyond thesis:

1. diversity in class and the lenses for learning how to learn;
2. the relationships of physical objects and embodiment to one's construction of meaning;
3. design futuring, social agency, critical action and implications;

4. re-framed roles for teachers;

5. co-participatory design of learning tools – born from the positioning of the learning goals in the emerging future (*next*).

I plan to continue this research work by engaging further in PhD studies and keeping a design practice that blends academic research and field implementation. I am particularly interested in positioning this work in the light of action research, co-participatory design, awareness-based practices, knowledge creation & networks – and through partnerships with field experts in social-emotional learning and education, gain further in-depth insights. These insights can be continuously integrated into new designed artifacts and processes.

### *Strategic approach to action*

In doing this research, I realized that – given the existing knowledge available in action learning<sup>1</sup>, design-led research<sup>2</sup> and co-participatory design<sup>3</sup>, I don't need to necessarily develop the learning tools myself, but rather curate and integrate them with principles of social-emotional learning and awareness-based practices<sup>4</sup>. They can then, be used as inputs into the process of co-creation with teachers, as they adjust them to their particular contexts.

I am also interested in developing this work at a global level – particularly in major urban centers of both developing and developed countries, such as New York, Sao Paulo and Mumbai. The hypothesis here (from the theory of change) lies in the idea of creating global hubs and act on change through intersection points of the system.

The strategic approach moving forward is hence based on the following pillars of action:

1. iterating the core offering: which includes the pedagogical approach (social dreaming), the learning tools and the co-participatory process;
2. developing pilots in diverse contexts, and integrate findings into the approach: Mumbai, Sao Paulo, New York, and Shanghai (potentially);
3. ground the project in research and knowledge creation networks: such as larger universities, research institutes and action learning practitioners (ex.: MIT, Parsons, Stanford, IIT, Aalto University, and University of Sao Paulo);
4. fundraising and building mutually supportive partnerships;
5. iterate on approaches to visual design – so futures and social dreams can start to be visualized (and hence, used for further discussion) – particularly, film-making, photography, embodiment practices and object design;

**Ultimately, the generative space for the next steps is around building a co-participatory movement. The opportunity is to develop new approaches to engage with change from places of awareness, meaning and agency – in which, social dreaming becomes the playground for inquiry-based practices.**

<sup>1</sup> The SAGE Handbook of Action Research, 3rd Edition, edited by Hilary Bradbury, 199-210. Thousand Oaks, CA: SAGE Publications Ltd, 2015

<sup>1</sup> The SAGE Handbook of Action Research, 3rd Edition, edited by Hilary Bradbury, 199-210. Thousand Oaks, CA: SAGE Publications Ltd, 2015

<sup>2</sup> Sanders, E. (2015). Convivial Toolbox: Generative Research For the Front End of Design

<sup>3</sup> Koskinen, I. (2011). Design Research Through Practice

<sup>4</sup> Scharmer, O. (2009). Theory U

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