Talking About Images

Possible Conversations in Art Education

Lina María Moreno Bustamante

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By: Lina María Moreno Bustamante

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Signed by the final examining committee:

Juan Carlos Castro   Chair

MJ Thompson   Examiner

David Pariser   Examiner

Juan Carlos Castro   Supervisor

Approved by
Chair of Department or Graduate Program Director

Dean of Faculty

Date   April 7, 2016

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ABSTRACT

Talking About Images; Possible Conversations in Art Education

Lina María Moreno

In this thesis I developed a conversation exercise that explored the convergence between *talking* and *making,* which have traditionally been differentiated in visual arts curricula, enabling diverse interpretative and creative possibilities in relation to images. This exercise was revised and adjusted throughout three workshops: two with a group of students from the Art Education department at Concordia University and a third one with a different group from the same program. In this exercise, talking was understood as a creative activity where students could reshape their conversations and explore their relation to certain images. More than discussing what a picture represented, I proposed a mapping/talking exercise where we looked at the connections between images and between interpretations. Since the understandings found through conversation are interdependent –they are built in the interactions among the group– talking could enable meanings that individuals would not have been able to achieve on their own. This resulted in a sense of commonality where others' opinions were not just valid but were also part of a collective creation of meaning and an opportunity for peer-to-peer learning.

Keywords: Conversation, enabling constraints, emergent curriculum, complexity theory, art education

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ACKNOWLEDGEMENTS

"The leap between images is always a leap of affect."
(E.K. Guimond, personal communication, July 2015)

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Chapter 1 – Introduction

1. 1 Talking about images

Talking about images is a common activity in art education that can often permeate our teaching and learning practices, the work we produce, and the way we relate to our visual world. How we talk about our images is how we relate to them. And when we invent new forms of conversation we also invent new forms of relation that can open possibilities for thinking and making differently.

With that in mind, I envisioned this project as a space to explore how the limits between talking and creating could blur in visual arts curricula. I wondered how talking could generate new images, actions, and ideas and how we could create new forms of conversation. Doing that, I intended to develop an exercise that could help students to become able, not only to discuss their interpretations, but also to shape their conversations in relation to images. To explore this, beyond discussing what a picture represented we looked at how the connections between our interpretations produced ways of understanding that none of us could have found on our own. In our interdependency, we arrived at places we could not have reached if it were not together.

1.2 Possible conversations/workshops

The objective of this project was to develop a conversation exercise that could enable the creation of new images and new interpretative possibilities. To do this, I worked with Design-Based Research (Barab & Squire, 2004). This is a methodology where curricular interventions are designed through an iterative process: an activity is implemented, revised, and re-implemented, making the necessary adjustments each time. Thus, the conversation exercise I proposed was developed throughout three iterations: two workshops with a group of students from the Art Education department at Concordia University and a third one with a different group from the same program.

In the first iteration I attempted to find alternative forms of conversation by working with instructions that contraposed old and new ways of doing: avoiding old ways of talking to find new ways. And although these instructions worked to some extent, they were limited because they were dualistic and prescriptive, unlike the conversations I was looking for. I realized later that rather than as linear effects from a cause, new possible ways of talking would need to come

from the relations that connect us to others –an image to others, our way of understanding to others' –since it was in these relations that we could co-create new ways of talking.
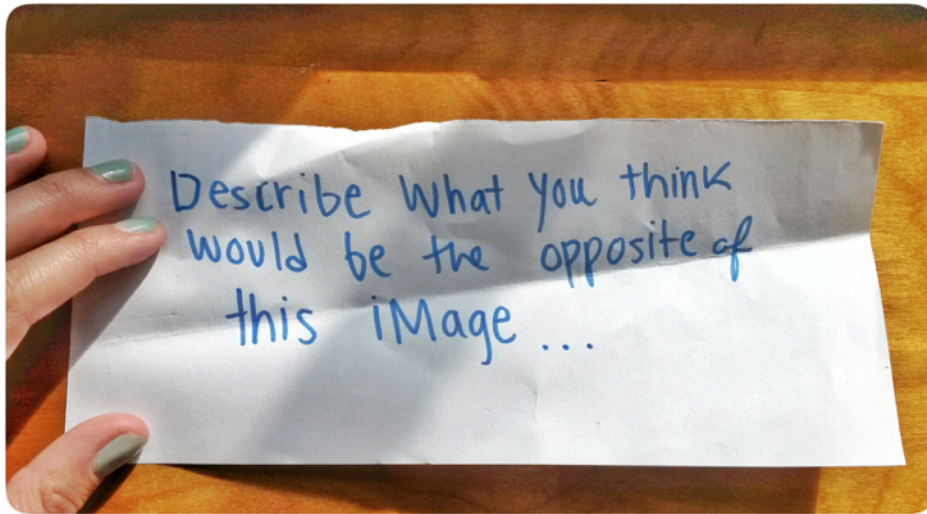
Figure 1 - Opposite Instructions - Workshop #1

Ten Art Education specialization students attended the first workshop. Based on their experience teaching art in their internships, we reproduced the conversations they usually had with their own students. In these conversations, they would usually observe a picture, discuss what it could represent, and speculate about the artist's intentions. We talked about a picture and they identified patterns in our conversation and created instructions to contradict them. For example: "describe what you think would be the opposite of this image" instead of "describe this image" or "only discuss what happened before and after this image" rather than "describe what happens in this image." These instructions generated some new insights about the narrative and formal qualities of the picture. However, they did not radically transform our relation to the artwork or our form of interpretation. It was then that I realized that in order to transform our conversations, we needed to shift our interactions with the images and with each other.

At that moment, the notion of *enabling constraints* was a helpful alternative to my dichotomic first instructions. As I will discuss in the second and third chapter, *enabling constraints* are defined through complexity theory as the conditions that balance structure and openness in a learning collective making possible new relations and new understandings (Castro, 2007; Davis, Sumara, & Luce-Kapler, 2007). In that sense, they are relational strategies that bring together causes that activate the emergence of something that could not have been created if those causes were acting alone (Manning & Massumi, 2014).

Figure 2 -Map of Relations - Workshops #2

With that in mind, for the second and third workshops I proposed an enabling constraint that could hold and expand the conversation: the creation of a map where we could visualize relations between images and between interpretations. I used a collection of pictures rather than one, and proposed to map the relations between these onto the space by cutting and assembling pictures and using tape, string, and post its. Participants first worked individually to make formal and affective connections between images and then collectively to find connections between their responses. The two first workshops were similar but in the third, the transition from individual to group work was more guided. After they were done mapping, they created instructions for each other to intervene, discuss, and expand the connections they had found.

Figure 3 - The Idea of Change - Workshop #3

Their instructions were also enabling constraints because they allowed them to connect ideas that were apparently unrelated, enabling them to discover qualities and meanings they had

not seen before. For example, a group in the third workshop suggested making a connection between two pictures that had not yet been linked. Jan[1], one of the participants, noted that finding two unrelated images seemed almost impossible. She suggested then, to work with a cluster that had been grouped based on narrative (someone had created a crime story from a set of nightmarish images), and connect it with a drawing of a lamp. The first response was based on formal similarities. Jan said: "[there is] a movement that is going on… shreds, dangling moves," she pointed at the fragment with wrinkled pieces of paper on the left top corner of the cluster and to the shapes coming out of the lamp. The group observed quietly for a moment until someone else intervened: "There is fire almost coming out of the lamp which causes a change and there's this –he made a gesture with his finger showing the narrative sequence in the cluster–, it's changing. They have in common the idea of change". They added a string labeling that connection. By drawing together elements that were not apparently related at first sight, the group established a conceptual and evocative relation that went beyond narrative or formal interpretations. The idea of change remained present in the conversation and came up again several times in relation to other images.

By discovering unapparent links together, the group arrived at a form of commonality that was based on inter-relation rather than unanimity. The new insights were influenced by how others had juxtaposed images and responded to them before. They would not have found an idea of change in relation to these pictures if it were not because someone had created the crime story before and because Jan had pointed out there was a sensation of movement in some of the fragments. Complexity Theory will be helpful to frame these networks of interrelated meanings. As it will be discussed in the next chapter, seen through the lens of complexity as a theory for education (Castro, 2012; Davis & Sumara, 2009; Davis et al., 2007; Juarrero, 2000) a classroom is a complex system where our ideas permeate others as we speak; we are affecting, being affected, and learning collectively. Since these networks are not linear nor predictable, I look at how changing the initial conditions that determine dialogue can activate modes of relation "not-yet imagined" (Davis et al., 2007) and thus are creative.

After analysing all the data at the end of the workshops, I found these constraints had enabled divergent ways of relating to the images by creating a relational space, decentering the

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[1] Some of the names used here are students' real names and some are pseudonyms. It is not specified which names are real and which are attributed.

conversation, and integrating talking and making. First, it created a relational space not only because of the connections represented on the map, but also because it allowed students to have an unmediated encounter with the images, to respond more attentively and empathically to others, and to interact physically with the space and the material. Second, it decentred the conversation setting the attention on the complex network of meanings and images rather than on the teacher or the students (Davis et al., 2007). Finally, the new ideas, images, and gestures that appeared from the conversation suggested this map as a platform not only for conversation but also for an emergent curriculum (Wein, 2008) where talking could be part of a creative process.

1.3 Rationale

Traditionally, discussions about artworks in art education have been characterized through art criticism. Discipline Based Art Education (Greer, 1993) especially, strived to teach the vocabulary, interpretative methods, and attitudes that a professional art critic would use. This approach emphasized almost exclusively rational analysis as a means to understand works of art. Later on, a number of scholars in the field introduced alternative principles that valued personal interpretations as responses to artworks (Barrett, 2000; Garber, 1990) as well as embodied interactions with images (Hubard, 2007; White, 2011). Consequently, rather than interiorizing others' interpretations, students could learn how to analyze artworks and support their opinions with concrete observations. Bringing their voice and body into the conversation acknowledged their capacity to find and express meaning. Building on this, I propose ways of talking where different responses and forms of thought are not only acceptable but affect each other and can generate more-than-personal understandings (Davis et al., 2007) and peer-to-peer learning opportunities. This would also lead to developing non-representational forms of interpretation and creative association –as it will be discussed later on. Rather than preparing students to perform fixed professional roles, like Discipline-Based Art Education proposed, these conversations could allow them to participate in shaping those roles; it could help them to become able to work interdisciplinarily with artists, critics, and curators to constantly reinvent how images are created and seen.

1.4 Statement of purpose

Artist and psychologist Patricia Stokes (Stokes, 2006), explains *variability* as the capacity to do something differently. For her, more than learning to *do* something, it is important to learn how to *vary* the ways in which that something can be done. This idea has been important to how I understand conversations in art education for this project since, more than learning how to talk about images, I am interested in learning how to create different ways of relating and talking. I aim to explore conversational structures that can amplify the possible ways in which language is used in relation to images while complementing, rather than replacing, other forms of dialogue. The overall objective of the project is to rethink conversation as a space for creation and experimentation where student-teachers are able to reflect and reshape dialogue through the use of constraints. Some central questions are:

- How do all the different interpretations in a collective affect each other and bring into existence something that exceeds any individual response or a consensus?
- What kinds of constraints respond to the complexity of a collective conversation generating new ideas, new images, or new forms of interpretation?
- How does this experience relate to emergent curriculum and what kind of spaces and structures does it need?

1.5 Statement of problem

Initially, this thesis intended to look at *how constraints applied to conversations about images enabled pre-service art education student teachers to develop divergent ways of relating to images in visual art curricula*. However, throughout the three workshops and data analysis, this question was more carefully considered.

In the first place, how could the role of enabling constraints be explained in terms of applicability? *Applying* constraints to a conversation would imply that both –constraints and conversations– exist as two separate entities and that constraints are an instrument; they have a utility that acts upon conversation. However, as it will be discussed in the next chapter, if we think about conversations as complex phenomena, enabling constraints are an intrinsic feature of their structure and thus cannot be detached from how the discussion unfolds and from how the collective shapes it; constraints are not a tool applied to the structure but part of the structure itself. Thus, it would be more accurate to formulate the question in terms of conversations *guided*

by enabling constraints or conversations *structured through enabling constraints* than in terms of constraints applied to conversation.

Secondly, what could those divergent ways of relating to images in visual arts curricula mean? What are they diverging from and how? As mentioned before, in the last decades a number of scholars in the field of art education have already considered expanding the forms of dialogue commonly used in classrooms and museums (Barrett, 2000; Garber, 1990; White, 2011) in order to challenge discipline-based approaches to art education (DBAE) (Greer, 1993). Building on their work, divergent ways of relating to images in visual art curricula could mean not only veering away from DBAE, but also stretching the possibility of multiple understandings to uncover the network of connections between them. Divergent would not only mean the possibility of multiple understandings of an artwork but also the relational and affective quality of images and thoughts that can be visualized and intervened to create complex discussions and other images. Thus, the question is re-formulated here:

> *How can conversations about images guided by constraints enable pre-service art education student teachers to develop affective and generative ways of relating to images in visual art curricula?*

1.6 Methodology and participants

In this project, I worked with Design-Based Research (Anderson & Shattuck, 2012; Barab & Squire, 2004; Brown, 1992; Collins, Joseph, & Bielaczyc, 2004; Kelly, 2003), a methodology that intends to create curricular interventions in concrete contexts while also producing general knowledge about learning processes. This methodology allowed me to explore the conversational exercises as specific events in a particular setting while also thinking about their pedagogical role in visual arts curricula. Following this methodology, the data collected in each workshop was analysed to make adjustments and plan the following workshop in an iterative process. After, I carried out a summative analysis (Collins et al., 2004) relating the data to the initial research question. This included a questionnaire[2] where some students described similar exercises they had adapted for their own students based on these workshops. For instance, Clara planned the introduction to a unit on surrealism with her secondary art-option

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[2] See Appendix II

students and Elise launched a unit about The Group of Seven adapting this exercise to her secondary art class.

The participants in this project were art education student teachers registered in the classes ARTE 420, for the case of the first two workshops, and ARTE 320 for the third one. Both groups were in the specialization program completing the requirements for their professional certification in the province of Quebec. Throughout the program, they had developed their teaching philosophy, had become familiar with the provincial standards for visual arts curricula, and had gained experience teaching art in diverse contexts. Besides, they were in a particular place in their professional career: they were simultaneously teaching in their internships while being taught in their university classes. This was helpful here since they could give feedback about the exercise from both the perspectives of student and teacher.

A fourth workshop followed the first three but the data was not considered here since it was not included in the certification for ethical acceptability issued for this study. I worked with a group of MFA students from the MITAV [Interdisciplinary Masters in Live Art and Theatre] program in Bogotá, Colombia. We looked at images they had collected, including documentation from their work, to explore how a map of relations between pictures could be considered as an expanded form of writing and how could it generate new ideas and interdisciplinary work. The documentation of this workshop is included in Appendix III and is referenced in the findings chapter.

1.7 Limitations

This project begins to outline an interdisciplinary research in art education, art practice, and experimental pedagogies. However, in the present thesis I do not discuss any of the experimental and artistic work that has come out of this experience since I am focusing on discussing new possible spaces of conversation specifically in art education. At the same time, although I begin exploring such spaces here, it is important to keep in mind that complexity-informed research does not aim to provide specific directions to reproduce a predetermined outcome. Rather, it proposes new attitudes for creating the curricular conditions necessary to explore these conversations and produce new interpretative possibilities in relation to images. I will discuss some general ideas about these attitudes in chapter five.

1.8 Terminology

Before moving on, I would like to clarify some nuances in the terminology I will use in this document. In the first place, since Design-Based Research makes an analogy between education and product design, I will use design-related terms to talk about education (i.e. curriculum design, implementation, refinement, design revision, etc.). I find this problematic in the context of the current economic model where education is often being marketed as a commodity, as a finished product designed for a consumer rather than as a space where teachers and students participate in learning processes. However, I will use this vocabulary since this methodology allows me to ground my work in an actual teaching setting while also connecting it with a research tradition in the field of art education. Additionally, in Design-Based Research, planning a workshop is seen as an iterative and context-specific process that is complementary to the conceptual framework of the project and to the concept of *emergent curriculum* that will be discussed in the next chapter.

I would also like to define how I understand each of the following terms:

1.8.1 Affect

Conversations usually imply a mutual relation: affecting and being affected. In this case, relating to images affectively means attending to how they affect us and how they affect each other. Rather that reading what a picture represents, my intention is to attend to what happens in-between pictures, in-between interpretations, as we talk. In the translator notes of *A Thousand Plateaus*, the philosopher Brian Massumi (1987) defines *affect* and *affection* by saying:

"Neither word denotes a personal feeling (*sentiment* in Deleuze and Guattari). *L'Affect* (Spinoza's *Affectus*) is an ability to affect and be affected. It is a personal intensity corresponding to the passage from one experiential state of the body to another and implying an augmentation or diminution in that body's capacity to act. *L'affection* (Spinoza's *affectio*) is each such state considered as an encounter between the affected body and a second, affecting, body (with body taken in its broadest possible sense to include 'mental' or ideal bodies)" (p. xvi).

Since *affect* does not refer to a personal feeling, relating affectively to an image is not simply a cognitive or psychological act but rather an encounter with an ideal body that affects us. In the same way, our interpretations are affecting and being affected by others' interpretations resulting in the creation of webs of meaning beyond individual understandings.

1.8.2 Conversation

Conversations will be understood here, through the lens of complexity theory, as dynamic networks of interactions where diverse relationships are possible (Davis & Sumara, 2009). They will be conceived of as the verbal or non-verbal exchanges where images and responses are shared.

1.8.3 Images

Images will be understood as visual impressions that can include "(…) both a physical object (a painting or a sculpture) and a mental, imaginary entity, a psychological *imago*, the visual content of dreams, memories, and perception" (Mitchell, 2005 p.2). An image is a *strike of vision*, a vision that strikes us. I will refer to the photos and drawings observed during the workshops (a collection that includes found material and artworks) but also to the mental images that emerged in our conversation and to the map itself as images. I will sometimes use *pictures*, *photos*, or *artworks* as synonyms although these words refer to specific image-categories.

1.8.4 Interpretation

In art criticism, the interpretation of artworks has traditionally been approached in a hermeneutic sense aiming to explain what an artwork (or an element in an artwork) means or represents (Sontag, 2001). On the contrary, when we think about learning from a complexivist perspective, interpretation appears as constant and non-representational way of creating coherence. In complexity theory, "interpretation is about the continuous process of incorporating new experiences into the ecosystem of associations that has emerged from previous experiences" (Davis et al., 2007 p. 167).

1.8.5 Relation/Relationship

A relation is not necessarily the same as an association, a link, a connection, or an affinity although these words are sometimes used as synonyms here. These terms imply a similarity between things while *relation* does not. Opposites can still be related in their rupture or their tension. A relationship is marked by how things affect each other, how they transform each other.

1.8.6 Participants/Participation

In educational research oriented towards psychological experimentation, participants are regarded as subjects of study. On the contrary, in Design-Based Research, participants are seen as collaborators that contribute with their expertise to curriculum design (Barab & Squire, 2004).

In a similar way, Davis et al. (2007) note that complexity theory is framed in a 'participatory epistemology'. That means, in "a theory that asserts that all aspects and objects of the world – animate and inanimate –participate with humans in the ongoing project of knowledge production" (p. 14). Thus, the students, the images, and myself take part (part-icipate) in learning.

1.9 Organization of thesis

This document has six chapters: introduction, theoretical framework, literature review, methodology, findings, and conclusions. The theoretical framework will discuss complexity theory as a theory for education. From that perspective I will also look at *emergent curriculum* as a non-linear structure for enquiry and at non-representational forms of interpretation in relation to images. The literature review will be divided into two sections: in the first, I will review the notion of 'conversation about images' in art education in order to clarify how art criticism has been characterized in the field and how this characterization has contributed to shaping current teaching practices. In the second, I will review the use of enabling constraints as a way of setting the conditions for the emergence of new thoughts and creative work. I will discuss how this has been a strategy to balance openness and structure used in avant-garde art –by artists who created structured games and improvisational scores–, in experimental events, and in education. In the methodology chapter I will introduce Design-Based Research and explain the data collection and analysis in this project. This chapter will describe each workshop and present the reflections that followed each iteration and informed the next. In the Findings chapter I will discuss how this exercise enabled affective and generative ways of relating to images by creating a relational conversation, decentralizing the curriculum, creating opportunities for emergence, and integrating talking and making. Finally, in the last chapter I will present general conclusions and recommendations.

Chapter 2 – Theoretical Framework

2.1 Attention, possibility, and relation

This chapter is a map to the concepts and theories that inform this project. Complexity, as a theory for education, will be a constant thread throughout the chapter and will be discussed mainly through Brent Davis, Dennis Sumara, and Rebecca Luce-Kapler's book *Engaging Minds: Changing Teaching in Complex Times* (2007). Drawing from their work, I will conceptualize teaching and learning as a practice of careful attention to how we relate to our visual world when we talk about images; a practice of attention to the forms of thought and action that can emerge from the relations between our interpretations. With that in mind, I will also discuss emergent curriculum as an alternative non-linear structure for education and the use of non-representational forms of thought and language in relation to images. These ideas will lead to creating conversations where students can visualize webs of connections between pictures thus generating new images, gestures, and ideas; conversations where the collective is seen as a learner that can arrive to understandings that exceed those each participant would have been able to find individually. These ideas will be the lenses through which I will later study the related literature, describe the project's methodology, and present its findings.

2.2 Complexity and education

> *Teaching [...] is never simply a personal or an interpersonal act. It touches the subpersonal through the planetary. Teaching is a deliberate participation in what is.* (Davis, Sumara, & Luce-Kapler, 2007 p. 226)

Davis et al. (2007) defined complexity theory, as taken up in education, as an attitude towards the study of 'systems that learn'. A system's learning does not imply memorizing or acquiring new information but rather re-structuring and adapting to changes. A good example of a learning system could be an ecosystem since all its parts are connected (systemic) and constantly responding to changes in the environment (learning). Because they are interdependent, whatever happens to one part of a system affects the rest: an entire rainforest could transform due to the extinction of the smallest of insects or to the intrusion of a new species. Each part affects others in ways that are not linear but rather expansive and

unpredictable given their interconnectedness. As scientists in the 19th and 20th century became more aware of the intricateness of these networks in nature, they also developed more dynamic approaches to understanding the world –from Einstein's theory of Relativity to fractals and hyperbolic geometry (Mitchell, 2009). In the same way, complexity theory originated as a non-linear form of explaining how interconnected systems emerge, adapt, and learn through 'context-specific 'self-organized' and 'self-maintained' dynamics' (Davis & Sumara, 2009). This theory has since been used to understand nature and also how social collectives work, how new technologies shape human interactions (Castro, 2012; Jakubowicz, 2006; Mitchell, 2009), and how identity emerges (Juarrero, 2002).

A classroom is also a system that learns and, like an ecosystem, it does so in complex non-linear ways. Teachers, students, ideas, materials, social interactions, are connected in a network that changes constantly. Each part affects others in different ways and their relations adjust when they respond to a new situation. This network, the classroom, "can and should be understood as a learner—not a *collection of learners*, but a *collective learner*" (Davis, 2005 p.87). Beyond the students' individual learning, they learn as a system; they adapt their relations morphing and responding as if the collective itself was a living organism. Imagine a web transforming its shape to adapt. Learning is defined by the capacity of the entire group to adjust rather than by the sum of each of their individual capacities (Davis & Sumara, 2009). In Juan Carlos Castro's complexity-informed photography curriculum (2012), for example, he used social media to highlight the interactions between the members of a group and create opportunities for exchange. They posted photos in response to specific prompts and some of the prompts explicitly asked them to look at each other's work and incorporate ideas of the others to their own pictures. Each participant learned from taking photos but also from looking at their peers' and at the feedback their peers had received on the social network, and from incorporating others' work to their own. What the collective learned was more that what each would have learned on their own. It was not only an individual or group learning but a systemic learning similar to that of an ecosystem. A web-shaped structure becomes an alternative to traditionally centralized and top-down models using other more organic and non-linear approaches instead (Morrison, 2006).

Complexity theory is also informed by process philosophy (Bergson, 1911; Whitehead, 1997) where the ideas of change and singularity are essential. Because systems change as they

learn, every learning moment is singular and specific to its context. The more elements a system has and the more diverse its qualities, the more singular it is (Juarrero, 2002). If for example, I were to repeat one of the workshops in this thesis with the same group, in the same place, using the same images, our conversation would already be different because the students would walk into the room with an understanding of the material and of each other's ideas from the previous workshop. Their structure as a collective would have already changed. Thus, two different learning moments would need specific strategies even if all the conditions (settings, participants, materials, etc.) seem to be the same; they exist in time and there is a singularity to each. In the same way, if I were to do this same workshop in a different place with a different group, I would not be able to repeat it exactly because their interests and responses would be different. Other things would resonate with them and call their attention, changing the conversation as well. The learning system of a classroom is like a network that not only includes the relations between students but also to the context: learning objectives, location, time, previous knowledge, personal experiences, and so on. Because these systems are structure-determined, they change their structure as they learn (Davis & Sumara, 2006). In other words, their structure is shaped by what they have learned before and two different contexts or two different moments would be structurally different, making it impossible to transfer an identical learning experience from one to the other.
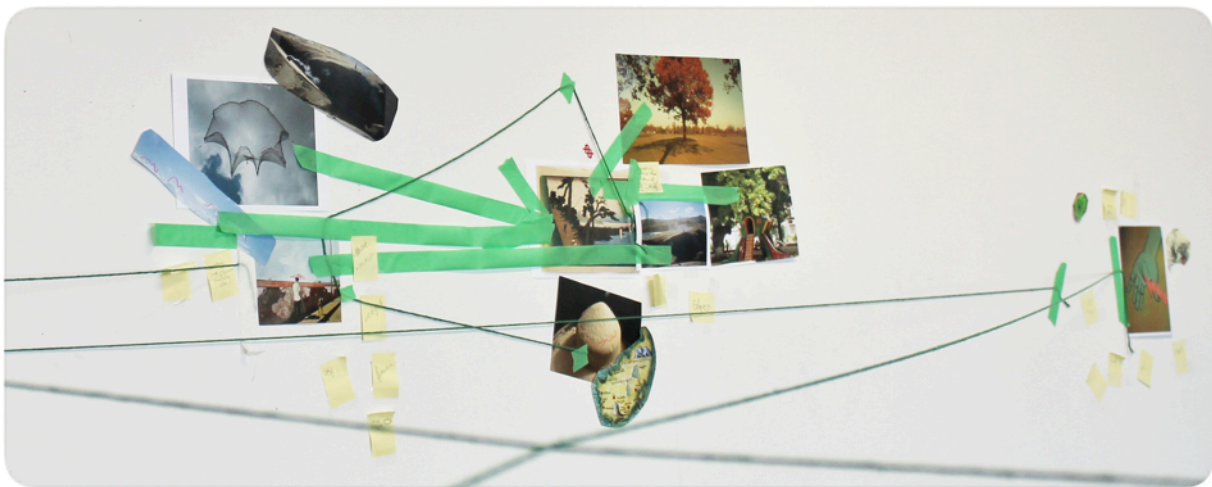
Figure 4 - Map Detail - Workshop #3

In this project, complexity theory was especially helpful to define conversation as a constellation, as a decentralized web of exchanges where images and ideas are shared. This allowed us to work with the connections between pictures and between responses rather than

with individual interpretations. More than thinking: *What does this image mean to someone*? I was interested in thinking: *What is happening in between these images and the way they affect us? How are the meanings we find related?* During the workshops, we reflected on these questions mapping the connections between pictures. We could visualize how the map grew and transformed while we talked; the conversation itself became an image of our learning at that moment.

This exercise drew attention to how different meanings could connect and how they could form a collective understanding that each participant would not have been able to find individually. Framing the exercise this way made sense here since complex networks are especially useful "to make sense of structures of appreciation among concepts, metaphors, and other connections that constitute a collective body of knowledge…" (Davis et al., 2007 p.57). We were not looking for the right interpretation of each picture but trying to uncover different layers of associations between images and making sense of them.

While complexity was useful to frame the intentions of this thesis, it was also helpful to articulate my teaching philosophy as I approached this project. Two key ideas were: 1) A learning collective is a sufficient learner 2) Learning is not a preparation, a rehearsal for the future, but a way of participating in the present to build possible futures (Davis & Sumara, 2009). I arrived to these ideas through the notions of *resilience* –described by Alicia Juarrero (2002) – and *static deficiency* and *vibrant sufficiency* –described by Davis et al. (2007).

2.2.1 The collective, a sufficient learner

Resilience is a complex system's capacity to respond to changes and new information (i.e. a capacity to learn). It is an ability to evolve dynamically and constantly rather than to reach an ideal state. One could think about education as a training process to achieve professional standards or adulthood. However, that would imply that a child is an incomplete project of an adult. It would mean that the student lacks something in order to be whole. Davis et al. call this *static deficiency*. Static deficiency is an attitude where the learner is understood as a fixed subject with incomplete knowledge; education fills in the gaps. On the other hand, *vibrant sufficiency* is an attitude where the learner (the learning system) is understood as dynamic, resilient, always evolving, and thus able to make sense of the world. The role of education is then to give opportunities for that vibrant and sufficient learner to participate "in the ever-folding project of becoming capable of new, perhaps yet unimaginable possibilities" (p. 21). Learners are not

lacking anything; they are sufficient in the singularity of the moment when they participate in creating meaning of the world.

For Davis et al. (2007) these two terms (static deficiency and vibrant sufficiency) are opposite frames to understand what learning and knowing means; they evoke a sense of scarcity versus a sense of abundance. In a complex system, a classroom for example, this abundance does not depend on how intelligent the most intelligent of its members is but on how the relations between them make each part more "capable of actions, interpretations, and conclusions that none would achieve on their own" (Davis et al. 2009 p. 38). Going back to Juan Carlos Castro's (2012) photography curriculum, what his students learned by intentionally observing and incorporating aspects of each other's work into their own exceeds what each would have been able to learn independently. Attending to what seemed interesting in other's photos became a reason to find ways of representing ideas and composing pictures differently. As Castro notes, they learned "through encounters with difference" (2012, p.162). In consequence, the collective was sufficient to make sense of the teacher's prompts and to distribute knowledge across the group. After this, they also created prompts with questions for their peers, generating more bridges to learn from each other.

In complexity thinking, interdependence becomes more productive than autonomy. Therefore, when approaching this project I wanted to think about the group of students in each workshop as vibrantly sufficient learners who could face the images I presented and make sense of them. More than just listening to other's interpretations, agreeing or disagreeing, or supporting their opinions, I wanted them to intentionally work with the relations among their interpretations to see what could be discovered in between them. What understanding could be brought forth that none of them would have been able to find on their own or that I would not have been able to foresee? What ideas and actions could those understandings create?

2.2.2 Participating in the present to create possible futures

Thinking about complex learning systems as dynamic, process-oriented, and singular, not only implies that learners are resilient and sufficient but also that they are continuously creating new forms of interpretation. As a system learns, it re-shapes its structure changing the way it will interpret new information in the future. This becomes an ongoing construction of possible futures that challenges teaching approaches where pedagogy is seen as a preparation for something static and yet to come.

The way we define a profession or a discipline is always transforming and is contingent to our learning processes as individuals and societies. In the contemporary art scene, for example, the relation between audiences, artists, critics, curators, and educators is constantly changing (ArtLess Group, 2016; Buren & Esche, 2010). As it does, it also opens opportunities to experiment with those roles and imagine what they could be and do; we re-define them all the time in a continuous and collective learning. In consequence, more than teaching the interpretative methods and vocabulary that students would need to become professional art critics (Greer, 1993), it would be important to help them form their own interpretations and consider different points of view (Barrett, 2000; Garber, 1990; White, 2011). Even more, since interpretations emerge from dynamic webs of interdependent meanings, it would also be important to help them experiment with how they could co-create new forms of interpretation.

From a complexivists perspective, new structures of interpretation can emerge from close-range interactions between parts of a system (Davis & Sumara, 2006). This project explores the relations between images thus helping students to make connections where they were not apparent and to make links between those connections uncovering new meanings. In doing this, different interpretational possibilities (i.e. poetic, associative, affective, non-representational) emerge from the relations between pictures and between responses.

Following Davis et al., taking part in these conversations would then form the structural ground to create yet-unimagined forms of conversation (of relation) in the future:

> [In complexity,] education is better understood as being oriented toward the as-yet unimagined—indeed, the currently unimaginable. Such a "goal" can only be understood in terms of exploration of the current spaces of possibility. Education and educational research conceived in terms of expanding the space of the possible rather than perpetuating entrenched habits of interpretation, then, must be principally concerned with ensuring the conditions for the emergence of the as-yet unimagined (2007 p. 38).

As they note, the task of the teacher is to provide opportunities to encounter new information and to set the conditions where those encounters could generate something new. Enabling constraints, as it will be discussed in the next chapter, are used in this project as strategies to set those conditions. As Castro (2007) noted, working with enabling constraints supports curriculum that not only models artistic work but that deals with the conditions in which artistic inquiry arises. In consequence, it enables curriculum where more than preparing for future

conversations, or rehearsing for a professional future, students take active part in their present encounters with images.

Complex learning processes generate new interpretative forms, new images, actions, and narratives. *Emergent curriculum* will be discussed in the next section as a non-linear structure that could guide creative work based on these unforeseeable outcomes.

2.3 Emergent curriculum

As discussed in the previous section, complex learning processes aim to expand the space of the possible in order to generate thoughts, actions, and interpretations that have not yet been imagined. *Emergent curriculum* is a non-linear structure that can guide such complex processes supporting the creation of new solutions and ideas. Instead of prescribing concrete results from the beginning, planning in this emerging structure is done continuously; teachers observe the patterns and possibilities that appear while working and plan the following steps elaborating on these. Thus, the curriculum becomes a shared enquiry where teachers and students participate (Wein, 2008). In my project, this structure was complementary with the iterative process of Design-Based Research where curricular interventions were designed through recursive cycles of implementation and reflection (Barab & Squire, 2004). It was also helpful in the data analysis of this project to think about a curriculum that could emerge from conversations and that could be guided by the images, gestures, and ideas found while talking.

This section will discuss two approaches to emergent curriculum: one discussing their non-linear form from the complexivists perspective and another looking at the Reggio Emilia Schools in Italy and how their emergent curriculum has been implemented in North American elementary education.

2.3.1 Non-linear paths

In educational literature, it is common to find definitions of curriculum that use its etymological root *currere*, meaning 'course of action', to make an analogy with a path (Ruitenberg, 2007). One could think, for example, that teachers plan a path to get from point A to point B. But what shape can that path take if complex learning is non-linear and open-ended? If it is no longer a straight line from A to B? Davis et al. (2007) propose that, while most analogies of education are based on Euclidian geometry (lines, arrows, diagonals, etc.), complex learning is better understood through fractal geometry. Fractal shapes are common in nature and

"are created through a recursive elaborative processes –a sort of feedback loop in which the output of one stage becomes the input for the next" (p. 85). These shapes are formed by a cumulative pattern that repeats using the outcome of the last iteration as input for the next. For that reason, the structure of a very small segment of a fractal is similar to the whole. Think for example of a tree and how the shape of its roots, its trunk, and the veins on its leaves are similar; a small branch resembles the entire tree. Our circulatory system is fractal too and so are clouds or a cauliflower. Imagine now any of these fractals growing and observe how their shape swells. That is because all these phenomena have in common the exponential repetition of a cumulative form; the way in which they grow is expansive, ramified. Complex learning processes expand like fractal shapes too: the input for a new understanding is based on the outcome of the last since they are formed by a structural memory of what they have learned before. This means that learning experiences are not isolated from previous understandings but rather are moments where individuals make sense of new information in relation to what they had learned before. This is essential in the constructivist theories of education (Piaget, 1974) where learning is understood as an organic process of adaptation where the learner builds a coherent sense of the world adjusting new information to prior understandings. Since learning is not linear and can expand in many directions, the form of emergent curriculum is determined by how the teacher, as consciousness of the collective, observes and chooses which of the emergent paths to follow (Davis, 2005).

Juan Carlos Castro's (2012) social media photography curriculum, discussed in the previous section, is an example of this fractal learning. His study took place on a social media platform where he gave weekly prompts to which participants replied with pictures. Each prompt was designed after observing patterns in their responses to the last. This formed a "recursively elaborative process where the results of one activity [became] the source for the next activity" (p. 160). For example, he noticed that some pictures posted in the early weeks influenced other participants' later images. He then asked them to intentionally look at each other's work and think about how they could incorporate it into their next image. What each had learned responding to the previous prompts expanded exponentially (like fractals) when their earlier photos became the input for their next pictures. This cumulative growth was also visible in the sixth week when they replicated the basic structure of the curriculum creating prompts for others. Castro worked with this emerging structure to see "if a collective of artists could become the

source of their own curriculum" (p. 160). He was also interested in seeing how the mobile nature of social media could enable dynamic exchanges between participants furthering the non-linearity of the curriculum.

2.3.2 Reggio Emilia

The region of Reggio Emilia in Italy was one of the first places where teachers worked with emergent curricula. After 1945, the Reggio Emilia community believed that giving children a place where they could learn to respect each other and where they were treated as capable learners was essential to repair the destruction left by the Second World War. They wanted to educate citizens that could think critically, collaborate, and respect difference. Led by a group of women and aided by the communist party, they sold the few tanks, trucks, and horses that the Nazi troops had left behind and used the funds to rebuild their schools both physically and ideologically (Hall et al., 2014). Guided by Loris Malaguzzi, they created a network of municipal preschools where children were taught to live in reciprocal relation to each other and to assume their role as producers of culture (Wein, 2008). One of the characteristics of these schools was that parents, teachers, and students constantly observed the documentation of their work to plan the next steps for creating projects related to real spaces and issues in their town. This was a recursive process of documentation, observation, and emergent planning. In this way, adults and children participated as co-learners, creating solutions that were not only specific to their problems but also to the general problem of how to live together and respect each other's lives.

In *Emergent Curriculum in the Primary School classroom*, Carol Anne Wein (2008) discusses how teachers in North America have drawn concepts from the Reggio Emilia Schools in Italy to negotiate a flexible yet effective approach to teaching literacy and numeracy in formal education. Informed by constructivist theories, many elementary teachers have found in this methodology a solution to the paradox between structure and flexibility they often experience in their work. Although some of the concerns of post-war Italy and today's North American schools are vastly different, teachers in both contexts are interested in creating a methodology that respects children's rhythms and treats them as active participants in their education.

Wein presents ten examples of early childhood emergent curricula and suggests a general theory to use this methodology in elementary schools: drawing from the concept of *Progrettazione* (roughly translated as progression or projection) from Reggio Emilia, teachers plan an initial provocation to introduce a question or to set an intention. After, they observe the

documentation of the activity (i.e. pictures, notes, traces of the actions or objects created, etc.) in order to recognize emerging paths and plan the next move. They often present this documentation to the group with the pedagogical intention of *making learning visible*[1] (p.10). That means, making the discoveries and new ideas visible to the collective in order to attend to how they could unfold.

An iterative process of action-reflection-action, where the results of one action are observed and become the input for the next, shapes the Reggio Emilia curriculum making it cumulative rather than linear. This approach also proposes a creative sensibility where every classroom works with a professional artist, and *atelierista*, who guides experimentations with multiple forms of expression and materials (Hall et al., 2014; *Hundred Languages of Children*, 1998). That experimentation gives students opportunities to interact with information using multiple forms of intelligence (Gardner, 2011) and emphasizing the importance of learning differently rather than learning more (Davis et al., 2007). In the same way, finding different forms of interpretation during a conversation can help the collective to expand their understanding of an image or a group of images. In the next section I will discuss how looking at the complex relations between images and responses can result in such alternative interpretational possibilities.

2.4 Non-representational forms of thought and language

Thinking about the nature of complex systems, Davis and Sumara note that finding connections between apparently unrelated phenomena, like the nature of the human brain and of an ant hive for example, generates "questions that invoke a poetic sensibility and that rely on analogy, metaphor, and other associative (that is, non-representational) functions of language" (2006 p. 7). Finding linear correspondences between them is not enough to understand how they relate. Images too, in their non-representational function, need to be understood beyond the direct representations of ideas or feelings. Rather than explaining what they stand for, their interpretation needs to deal with how they associate with larger webs of meanings and affects built amongst individuals, contexts, other images, etc. Besides, for Davis and Sumara, these associative sensibilities can also allow us to blur the boundaries between knowing and acting,

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[1] Making Learning Visible is also part of a research project by the Harvard Graduate School of Education and the Reggio Emilia Schools called Project Zero.

talking and observing, creating and thinking, and between rational and poetic thought. Thus, this project attempted to explore such non-representational functions of language through an exercise where talking could be a way of observing and making could be a way of thinking.

An example of how exploring connections that are not apparent opens up alternative forms of interpretation is *Curatorial Experiments* (2016), a series of talks and events organized through the research platform *ArtLess Group* at the University of London. They studied projects where curating an exhibition was seen as a collaborative process-based event where artists and audiences participated. These projects experimented with the relations between works of art, spaces, artists, organizers, and viewers generating "connections between artworks [that] shifted between expository, fictitious, choreographic and contingent modes" (8 June – Manipulating Variables section para. 2). These connections were based on expanded forms of interpretation rather than linear. Connecting people or spaces that would not usually be connected in an exhibition, or placing together works of art that were not apparently related, made possible interpretations outside the linear logic of representation; they were interpretative fabulations more than explanations.

Since in complexity theory the collective can always generate more than what each of its isolated parts could produce, the possible interpretations of an image expand when it is observed in relation to other images; and even more, when it is observed by a group of people whose interpretations are also related. Rather than prescribing fixed forms of interpretation, this thesis' aim was to sensitize students to how they could collectively create new meanings and non-representational forms of interpretation based on their observations. In doing this, each group of participants was understood as a dynamic and resilient collective that could make sense of the artworks by exploring the connections they found: first individually (between images) and then collectively (between interpretations). Besides, these conversations could create ideas for new images and actions that could become creative projects structured through emergent curriculum. Teaching and learning become here, as mentioned in the introduction to this chapter, a practice of attention to interconnectedness and emergence.

In the following chapter I will discuss how conversations about images have been characterized through art criticism in art education. This will be helpful to build on teaching approaches that encourage personal interpretations of artworks and diverse responses (Barrett, 2000; Garber, 1990; White, 2011). I will also review relevant literature on the use of enabling

constraints to balance structure and openness in order to generate new creative possibilities in artistic work and in education.

Chapter 3 – Review of Literature

3.1 Conversations in art education and enabling constraints

As discussed in the previous chapter, *enabling constraints* are approached in this project as the initial conditions to enable the emergence of non-representational forms of interpretation when talking about images. Seen through complexity theory (as a theory for education), these enabling constraints can activate connections within the collective (the group that engages in conversation), thus making possible interpretations that are relational and that exceed what each participant would have been able to understand individually. These interpretations become the ground for an emergent curriculum that is not linear and that understands talking as a way of making.

To work around that idea, I will review relevant literature on conversations about images in art education. I will trace different attitudes towards these conversations: from disciplinary approaches that taught specific interpretative methods for art criticism (Greer 1993; Anderson 1993) to later approaches that encouraged personal and diverse responses to works of art (Barrett 2000; Garber 1990; Hubard 2007). Then, I will discuss the use of enabling constraints as a way of setting the conditions for the emergence of new thoughts and creative work; a strategy to balance openness and structure that has been explored in avant-garde art –by artists who created structured games and improvisational scores–, in experimental events, and in education.

3. 2 Talking about images in art education

Despite their ubiquity in art education, 'conversations around images' are rarely explored as significant spaces of experimentation independent from art criticism or studio critique. It is important to understand how art educators have characterized such conversations through art criticism, especially in the last two decades. Clarifying this background will lead to a deeper understanding of how discussions about artworks are conceived in present curricular approaches. It will offer, as well, alternative paths to think about these discussions as spaces of experimentation independent from art criticism.

3.2.1 From Discipline Based Art Education to Personal Interpretations

In the late 1980's and early 1990's, Discipline-Based Art Education (DBAE) introduced art criticism as one of the core disciplines to be taught in art education along with aesthetics, art

history, and art production (Greer 1993). The particular set of skills developed by each of these disciplines intended to reproduce the well defined professional roles of artists, art critics, and curators at that time.

Prior to DBAE, art conversations had been centred in studio critiques where students' work was discussed and observed (Anderson 1993). As art criticism was brought into consideration, conversations shifted towards the analysis of professional works of art and processes of description, interpretation, and evaluation of artworks became central in the curriculum. From that moment on, there has been a noticeable effort from scholars and educators involved in criticism to understand how this discipline can be framed for the context (a western context) of art education.

On that endeavour, the North American art educator Tom Anderson elaborated key ideas to approach art criticism and interpretation. In *Defining and Structuring Art Criticism for Art Education* (1993)*,* Anderson highlighted the importance of guiding students to build their own meaning from artworks in order to achieve active and authentic understanding. Furthermore, he fostered the idea of judgement as a necessary practice where individuals evaluate images from both emotional and rational perspectives. From his viewpoint, students should not be taught to give neutral and objective appreciations but to build valid judgements and support them. This idea was constant in the work of other theorists who, as Anderson, conceived art criticism as an argumentative and a persuasive practice (Barrett 2000; Garber 1990; Stecker 1994; White 2011).

Another point of agreement among art educators is the importance of interpretation as a mechanism for the construction of meaning. For instance, the art critic and educator Terry Barrett argued that interpreting artworks is responding to them since "artworks have 'aboutness' and demand interpretation" (Barrett, 2000 p.5). On the same track but from a feminist perspective, the art educator Elizabeth Garber (1990) understood interpretation as the process of uncovering the meaning of an image and its social and ideological implications in specific historical contexts. Similarly, Anderson (1993) explained interpretation as the process by which the observer projects meaning based on the evidence collected through description. Students synthesize the information with their intuitions and life experiences to understand. A particularity of Anderson's approach, however, is the emphasis on interpretation as a creative exercise rather than rational or analytical processes.

In this regard, Anderson compared various methods to engage in description and interpretation of artworks and discussed their pertinence. For such purpose, he considered deconstructionist deep description versus structuralist criticism methods. "The point of deep description is not so much understanding the artwork but understanding one's self and the 'texts' of one's life in context with the work and other relevant factors that present themselves." (Anderson, 1993 p. 201) Such definition can be extremely relevant when considering an expanded conversation/relation where the observer faces the image, not to understand it, but to be exposed and affected by it. However, Anderson considered that young students did not have enough cultural background and critical skills to engage in deep description. Besides, he pointed out how this method was not well suited for his synthetic approach as it aimed to de-construct the elements of the artwork rather than creatively integrate them through interpretation. Instead, structuralist educational criticism was, he argued, a much more straightforward method to help students construct and contextualize meaning by focussing on formal and thematic relations. Following that thought, the opportunity for students to 'understand themselves and the texts of their lives' in relation to their visual world was excluded from the conversation.

3.2.2 Diverse interpretations

Contrary to Anderson's methodology discussed above, Terry Barrett's approach is not based on specific methods for art criticism but on principles that encourage students to find personal and diverse interpretations of works of art. The author differentiates between methods and principles as "Principles respect our abilities to creatively and spontaneously invent a variety of methods that work for us and for our students in our unique learning environment" (Barrett, 2000 p.7). Principles operate as pins holding the intricate networks of interpretations that are weaved through conversation and writing. In *Principles for Interpreting Art* (1994), the author presented a set of seventeen premises that echoed his personal perception of criticism and provided guidelines for art and museum educators. Some of the principles declared, for instance, that "Feelings are guides to interpretations [and that] an interpretation of an artwork need not match the artist's intent for the artwork" (Barrett, 2000 p.6). Compared to prior prescriptive models of art criticism (Geahigan 2002), Barrett's principles reflect a rather open view of interpretation that could lead to new possibilities for conversations in relation to images.

While defining criticism from the perspective of Art Education as a field, the possibility of considering multiple valid interpretations for an artwork also came into question. With that

concern in mind, the philosopher Robert Stecker (1994) explained how critical monism searches for one correct interpretation while critical pluralism denies the value of pursuing a unique and true meaning for every work of art. He discussed the compatibility of certain forms of critical monism and pluralism arguing that they are in fact compatible. Can then two opposite interpretations be acceptable? Which interpretations are acceptable and which are not? According to Barrett, "No single interpretation is exhaustive of the meaning of an artwork and there can be different, competing, and contradictory interpretations (…) [however] Good interpretations have coherence, correspondence, and inclusiveness." (Barrett, 2000 p.6) In consequence and reflecting the argumentative and persuasive characterization of criticism discussed before, students are expected to construct their own interpretations and be able to support them with strong arguments and formal evidence.

Questions of pluralism have also been addressed from feminist approaches to criticism. Further than talking about diverse interpretations of a single image, Elizabeth Garber (1990) considered the multiple world-views and experiences implied in meaning construction. She centred her reflection on cross-cultural and comparative practices that acknowledge diverse social contexts and their implications. The author made a careful review of feminist art criticism highlighting the feminist principles of social analysis, political activism, and self-knowledge as bases for criticism in education. Garber's inclusive approach is underpinned in ideals of justice, equality, and social awareness, where "the aim of conversation is comprehension not agreement" (Garber, 1990).

3.2.3 Terry Barrett's principles for interpreting art

Thinking about a similar idea of conversation for comprehension rather than agreement, in *About Art Interpretation for Art Education* (2000), Barrett introduced three new principles to his previous set: 1) To interpret a work of art is to respond to it 2) Interpreting art is an endeavour that is both individual and personal, and communal and shared 3) Artworks attract multiple interpretations and it is not the goal of interpretation to arrive at single, grand, unified, composite interpretations (Barrett, 2000 p.6).

In regard to the first principle, the author declared that artworks demand interpretation and individuals respond to them by making meaningful connections with their personal feelings, experiences, and references. It is important to note here how images are expressed as active subjects demanding interpretation. As pointed out by the educator and performance artist Estela

Ryan, this would imply something other than "a one-way-flux" (Personal communication, November 3, 2013) between the image and the observer. Something more similar, I would also argue, to a conversation/relation with and around images rather than just between people who observe them[1].

Such conversation would be, as Barrett pointed out in the second principle, both absolutely individual while also communal. Two faces of the same coin. From the author's point of view, students build personal interpretations to make sense of artworks for themselves. Communal interpretations, on the other hand, are built by groups with common interests and are often accepted as general knowledge. It would be ideal, according to the critic, to find a balance between individual and communal interpretations and to understand how they are not mutually exclusive. However, he stated:

> Within art discourse and art education, I think we are more comfortable with communal art interpretations than with personal interpretations. We strive to have our students understand art as the community of scholars understands it. This is certainly the modus operandi of art history classes, the thrust of many discipline-based lessons in art education, and what is usually specified in standards and measured in tests (Barrett 2000)

Opening spaces for personal interpretations can certainly expand the conversation around images. However, it is also important to challenge the implicit dichotomy between 'individual' and 'shared' responses and the definition of 'communal' interpretations. Personal responses can be simultaneously individual and communal since they are encountered in the immense network of conversations shared with others and their images (or with images themselves). At the same time, they are neither individual nor communal since they are also connected to other interpretations and other images. As in a complex system (Davis & Sumara, 2009), conversations are continuously shaped in every interaction and the limits between 'personal' and 'communal' are constantly blurred.

Acknowledging such a complex system of interpretations may result in diverse and even contradictory responses to a single work of art. In the third principle, Barrett argued that, rather than being detrimental for interpretation, opposite views can be beneficial since they promote

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[1] Writing this document, it came to my attention that the English and Spanish grammatical configurations that define this relationality are quite different. While in English one relates *to* an image in Spanish one relates *with* an image. This distinction is important to think about the role of the subject and the object that relate and about alternative logics of causality and affection between them.

global understanding. Furthermore, discussing controversial pieces can help to develop a stronger sense of community as people learn to respect other points of view and feel safe to express their opinion.

3.2.4 Alternative responses in museums and visual arts curriculum

Recent research has also built on Barrett's work to create alternative forms of responses to works, especially in museum education. Olga Hubard (2007b) drew on Barrett's last principle (*Artworks attract multiple interpretations and it is not the goal of interpretation to arrive at single, grand, unified, composite interpretations*) to reflect on the construction of meaning through group dialogue. Just like Barrett, she did not aim to find single answers but to 'weave information' through the different layers of dialogue that coexist when observing an image. She reviewed examples of non-discursive exercises that "enable people to express their responses through processes other than rational thought" (Hubard, 2007a p.48). She studied the subtle physical gestures performed by observers in front of artworks and recognized them as powerful and practical forms of building 'embodied' knowledge in relation to images. Similarly, Boyd White (2011) promoted interpretation through evocative writing as a methodology for art-based research. As George Geahigan (2002) pointed out, western culture has traditionally linked discursive language to art. However, on that note White considers that "[aesthetic experiences] are frequently non-linear, often complex and ambiguous, and always fleeting" (2011 p.144) and the argumentative nature of discourse fails to provide enough spaces to grasp their affective and sensuous dimensions.

As in these strategies for museum education, some current approaches to the arts curriculum also offer alternatives to the rigid disciplinary characterization of criticism. Inquiry-based notions of creation and response, for instance, attempt to engage in " responding and creating strands [that] are dynamically linked in an ongoing and reflexive relation [where] responding may include creative acts, and encompasses presenting, sharing, and communicating one's own understanding" (International Baccalaureate, 2009).

From the complexivists perspective, a conversation is not only a pedagogical moment of discussion; it is mostly a way of thinking about education. William E. Doll Jr. (2013) contrasts a paradigm of 'teaching as telling' with one of 'teaching as conversation' that adapts to the complex postmodern contexts of today's schools. He notes:

In serious conversation, conversation for the Good, each converser listens attentively to the other—indeed honouring the other's "otherness." Each converser speaks from a position of humility, knowing full well that her or his comments may be mistaken. Indeed each teacher in a post-modern frame needs to acquire the art of dealing with the uncertain, not by imposing or dictating authority, but by letting authority be dissipated. Understanding in this frame emerges, is not dictated, is always provisional, and comes from our wisdom of knowing how to let learning occur. (2013 p. 69)

Teaching as conversation, unlike teaching as telling, implies a relation between two equally active parts; it implies an exchange where learning occurs but is not imposed. Complexity theorists understand learning as a systemic adaptation to new information where, as Doll mentions, understanding emerges. In this scenario, *enabling constraints* are the strategies used to set up the initial conditions that can make possible the emergence of learning.

In the following section I will discuss the use of enabling constraints as a balance between structure and openness; a balance that has been often used in creative contexts to find new possibilities for thinking and making.

3.3 Enabling constraints: structured openness

After reviewing how conversations about images have been approached in art education, I will look at the use of enabling constraints in creative work and education to reflect on how they could be a strategy to find other possible ways of relating to images in visual art curricula. The essential question here revolves around the relationship between structure and openness and how it can shift the paradigms that guide our practices. Artists and educators alike have experimented with structure and openness (or improvisation) to transform spaces for thought and action. Avant-garde artist, like the surrealists and the Fluxus movement, played with instructions and rules to break established configurations and resist traditional forms of cultural production and rational thought. In education, understood through complexity theory, the balance between openness and structure is determined by the use of enabling constraints and implies creating new thinking patterns (Davis, Sumara, and Luce-Kapler 2007) as well as shifting the roles of educators and students in the classroom (Castro 2012). Other fields like publicity and design, where innovation is highly valued, have also recognized the potential of constraints to trigger new creative solutions (Stokes 2006; Onarheim and Wiltschnig 2010; Biskjaer and Halskov

2011). These fields, however, often think in terms of productivity and concrete outcomes. They seek to "solve the creative problem" (Stokes 2006) in order to produce novelty. Instead, both in art and education, structured openness has been a strategy to create conditions for the "as-yet unimagined" (Davis, Sumara, and Luce-Kapler 2007) to unfold.

3.3.1 Surrealists games and Fluxus' scores

This summer the roses are blue; the wood is of glass. The earth, draped in its verdant cloak, makes as little impression upon me as a ghost. It is living and ceasing to live which are imaginary solutions. Existence is elsewhere. (Breton 1924)

Europe began the twentieth century submersed in the destruction, death, and misery of the First World War; existence needed to be found anew. It was then that influenced by Dadaism and psychoanalysis, the surrealist movement embarked in the search for a revolutionary way of being in the world (Gooding 1995). The movement was not concerned with form or discipline as much as with their political and philosophical stances. They turned to the subconscious, chance, and structured play to arrive at compositions outside any logic of authorship or economic productivity. They were forging a resistance to rational thought in favour of imagination and they did this by altering common strategies of perception and inspiration. This was for them a powerful and truthful form of collective non-rational thought that gave meaning to the world, that *elsewhere* where existence lied.

As Mel Gooding described in his introduction to the compilation *Surrealist Games*,

The surrealist initiated the most radically liberating critique of reason of the century. Their brilliant investigations were conducted through art and polemic, manifesto and demonstration, love and politics. But most specially and remarkably, it was through games, play, techniques of surprise and methodologies of the fantastic that they subverted academic modes of inquiry, and undermined the complacent certainties of the reasonable and respectable. (Surrealist Games section par.1)

Despite of the form, it was structured play what activated the elements of chance and the unconscious in their work. They created very specific rules to intentionally trigger automatic associations and arrive at pieces they could not have imagined before and to truths they could not have attained through rational analysis. The *Game of Illot Mollo* (Illot Mollo section para.1), for

example, was a very detailed configuration for collective improvisational writing. This game, designed for two to four players, began by writing simultaneously about an undefined topic. Players took turns to say a word aloud from the sentence they were writing at that moment. The other players had to incorporate that word in their texts and add another word to it, a secret word, and continue writing and taking turns to say the next marker-word. The result was then, several different intricate and parallel texts, a form of collective thinking. What was most fascinating was the unintentional, irrational but precise truths that emerged from the games. As in the definition/question game where a player wrote a question, folded the paper, and the next player wrote an answer without knowing the question: "What is equality? It is a hierarchy like any other" or "What is military service? The noise of a pair of boots tumbling down a staircase" (Definitions or Question and Answer section para. 1). Their work was meaningful because it expressed a sort of collective unconscious where the groups' political and philosophical believes were made visible through their art and writing.

Later on, the Fluxus movement also relied on the use of instructions to question the boundaries between life and art, artists and spectators, and seriousness and absurdity. They challenged who could make art and what art could mean; and they did this by creating provocative and poetic scores and instructions for [some times impossible] performances (Friedman, Smith, and Sawchyn 2002). John Cage was a key figure in this movement and it was during his experimental composition classes at The New School where artists began producing scores for these performances, which they called events or happenings. Fluxus scores explored the relationship between structure and openness but were far more ambiguous than the surrealist games both in their form and their language. *Opus 25* created by Ken Friedman and *Fruit in Three Acts* by Eric Andersen (Friedman, Smith, and Sawchyn 2002) are two examples of propositions where ambiguous yet precise rules were given:

Opus 25:

1. Select some objects which address themselves to your acoustic imaginations.

 2. Play with them according to a predetermined system. (p. 15).

Fruit in Three Acts:

 1. A peach

2. A watermelon

3. A pear (p.40)

The given prompts structured the performances in their absurdity, they emphasized on the process rather than product, and they often reversed the roles of the audience and the performers. The traditional mechanisms of art production and dissemination were cleverly subverted because the meaning of the scores could not be fixed, they could not be shown in a gallery or museum, and could not enter the market since they could be performed at anytime and by anyone.

Fluxus artists, and especially John Cage, have had a great influence in artistic work around openness and structure since the 1960's; other avant-garde performance artists and musicians concerned with structured improvisation have also used similar techniques later. A brilliant example is the structure of John Zorn's improvisational composition *Cobra*[2] (Zorn 1984) where he created a set of rules that were shown to the band through cues such as cards, headbands of different colours, and hand gestures. There was not a determined order to how he selected the cues but there were very specific rules to what each cue meant. Often, the instructions also included improvisational elements for the musicians adding another layer of spontaneity. Cobra's score is an intricate map of codes and signals for each instruction. Touching an ear, for instance, meant: "Current improvisers continue to play but the musical style of their improvisation must change radically" (p. 2). The musicians followed these commands but were also able to create commands for other musicians, respond to their commands and take over the role of the director.

These experiments between structure and openness in the arts are an important precedent to consider the pedagogical function of play. Similarly to these, the use of enabling constraints in emergent curricula, which will be discussed later in this chapter, focuses on crafting the appropriate rules to activate creation and connection; or, as is the case of this project, the appropriate initial conditions to generate a conversation that cannot be planned in advance. These conversations, as the surrealist's work, not only deal with rational forms of thought like visual analysis and narrative but also with affective, relational, and seemingly absurd forms of understanding.

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[2] I was acquainted with John Zorn's *Cobra* through Aaron Finbloom (PhD in Interdisciplinary humanities candidate at Concordia University) and his work with professor Sandeep Bhagwat where he is creating scores to choreograph philosophical conversations through structured improvisation. Aaron is working on a score based on Zorn's work and I have participated in the performances and collaborated with him in other experimental conversation exercises.

3.3.2 Enabling constraints and pedagogy

Questions around the relationship between structure and openness are constantly present in education, from classrooms, to curricular design, to administration and policy. *Enabling constraints* are a strategy to articulate this relationship and generating new forms of thought; they are a way of entering openness through structure. The term *enabling constraints* comes from complexity theory and refers to the "structural conditions that help to determine the balance between sources of coherence that allow a collective to maintain focus of purpose/identity and sources of disruption and randomness that compel the collective to constantly adjust and adapt" (Davis and Sumara 2006 p. 147). This concept is helpful to think about conversations since dialogue requires coherence to allow connection between the interlocutors but also disruption to bounce ideas and generate thoughts collectively.

Creative constraints are factors or conditions that delimit a creative space of action (Biskjaer and Halskov 2011). Choosing a format, respecting a deadline, adjusting to a budget, or following a determined set of rules [like those of academic research] are some forms of constraints. In that sense, any instruction, any condition, is already constraining. But, what makes constraints *enabling*? Different creative fields and approaches to pedagogy have understood that question in singular ways; this has not only implied diverse outcomes but also diverse epistemological paradigms in relation to creation, learning, and the use of constraints.

Although the notion of *enabling constraints* is particular to complexity theory, their use to generate creation has also been studied from other perspectives. Social and political theorist Jon Elster (2000) describes creation as a two-step process where the selection of conditions is followed by the choices made within those conditions. Elster is interested in self-restriction as a way to solve creative problems through rational thought. Like him, scholars in the fields of design and publicity have understood creation as the solution to a problem (Biskjaer and Halskov 2011; Onarheim and Wiltschnig 2010; Stokes 2006). In that context, the choices made within a constrained environment can reshape the conceptual space of the problem and expand its possible solutions (Onarheim & Wiltschnig, 2010). Understanding creation as a problem leads to understanding constraints as generators of novel solutions, which is fundamental for these fields where creative productivity translates into economic productivity. They are not only seeking to solve the creative problem but to solve it with innovative ideas that can enter the market.

After working in publicity for several years, psychologist and artist Patricia Stokes (2006) carried out one of the most extensive studies on the use of *generative* constraints and developed a curriculum for creative practices based on that concept. Exploring creative writing, Stokes invited students from Columbia University to reflect about different voices in literature. After writing a composition using their own voice, students read fragments from texts by Byatt, Calvino, and Dillard and mapped the tacit constraints used by each author. Later, each student used the rules identified to rewrite their initial composition in the voice of one of the authors. Then, once they went back to their own voice, they were more aware of their writing processes. In another exercise at the Art Institute of Chicago, she invited a group of fine art students to identify the constraints that were implicit in their work. They analyzed the attitudes, choices, and results that were usually promoted or excluded from their work. After, they individually designed pairs of constraints that precluded what they had been doing and opened alternatives. For Stokes, in order to generate original solution paths constraints should be selected strategically and structured in pairs where one precludes previous patterns and the other promotes novel and surprising ones. Though this initially seems to be an effective model, it can also be inherently flawed since it implies that

> (…) Creative breakthroughs can be achieved by employing a dichotomic conceptual framing of the problem space, that is, by thinking in opposites and essentially negating key features of the domain of departure to forcefully promote novelty (Biskjaer & Halskov, 2011 p.2)

In this dichotomic relation between new and old solutions, constraints are understood as simple cause-effect triggers of novelty, which is problematic when we are looking at complex rather than simple phenomena like conversation and learning. However, Stokes also argues that constraints can generate 'variability', defined in terms of 'how differently something can be done' (p.10). The film director Lars von Trier explored a similar idea of variability generated by constraints with the avant-garde film movement Dogma 95 and with some of his later films. In *Five Obstructions* (Leth and von Trier 2003) for example, the Danish director Jørgen Leth accepted to follow five conditions imposed by Von Trier to re-make five new versions of his own film *The Perfect Human* (Leth 1967). Leth worked around each of the obstructions and the project resulted in five fascinating short films with diverse formats and narratives. More than challenging Leth's creativity and opposing old and new 'ways of doing', *The Five Obstructions*

explored five possible ways of filming the same movie. With this in mind, how could we think about conversing differently? How are students taught to invent multiple ways of entering conversations about images? How can we think that it is "(…) not only important to learn *how* to do something but to learn *how differently* it can be done" (Stokes 2006 p.10)?

Inventing multiple modes of conversation around images is a central concern in this project. Brent Davis, Dennis Sumara and Rebecca Luce-Kapler (2007) also refer to the idea of 'doing differently' when they write about complexity as a theory for education. For them too, learning is about " (…) knowing differently, not merely knowing more" (p. 8), and structuring learning through constraints can enable the creation of a multiplicity of forms of knowing and conversation. There is however a subtle difference in how Stokes and Davis et al. think about the role of constraints in generating variability. Even when Stokes is not necessarily opposing old-and-new ways of doing, she is still thinking about constraints as simple mechanisms in which effects respond to causes linearly; variability is a direct response to constraints. In complex systems, the relation between causes and effects is not linear because they are not driven by the rules of simple mechanics. Complex systems, such as learning communities, constantly reconfigure their own structures based on their relations and their environment. They move in an interconnected space where every node (every student, every action, every image) is linked to many other nodes and where the system's responses are determined by the tensions between them. Rather than solutions to a creative problem, complexity thinks about constraints as initial conditions that provide cohesion; they "synchronize and correlate previously independent parts into a systemic whole"(Juarrero 2000) and enable the emergence of "not-yet imagined" or "not-yet actualized" forms of thought and action (Davis, Sumara, and Luce-Kapler 2007; Manning and Massumi 2014). The newly established relations within the collective shape emergent gestures, ideas, actions, and configurations. Similarly, in Erin Manning's and Brian Massumi's (2014) work with philosophy and art at the SenseLab[3], enabling constraints are understood as complex relational techniques that "catalyze and modulate interaction" (p. 91)

"These techniques would have to be of two kinds: techniques to set in place propitious initial conditions, and techniques to modulate the event as it moved through its phases. The paradigm was one of conditioning, rather than framing. The difference is that

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[3] The SenseLab is an interdisciplinary laboratory for thought in motion at Concordia University founded by Erin Manning and Brian Massumi and with hubs in Europe, Brazil, Australia, and Canada. http://senselab.ca/wp2/

conditioning consists in bringing co-causes into interaction, such that the participation yields something different from either acting alone. The reference is to complex emergent processes, rather than programmed organization. Emergent process, dedicated to the singular occurrence of the new, agitates intensively in an open field. Programmed organization, on the other hand, functions predictably in a bounded frame and lends itself to reproduction" (p. 93).

Here too, the collective is conceived as an interconnected system of causes that relate to each other in complex ways that are not linear and cannot be anticipated.

If the relation between constraints and outcomes is not linear, it cannot be said that they generate new forms of thought directly. What do constraints enable then? More than results, they enable "the conditions for complex emergence" (p. 192); they enable *complexity* itself and in doing so they open spaces for the emergence of *the possible* –and perhaps of *the impossible* too if we think about impossible performances, utopic architectures, etc. They enable collective learning from where new understandings emerge. And since that learning is always changing and re-configuring itself, "the product of the process is necessarily the process itself" (Juarrero 2000). In Manning's and Massumi's (2014) work, enabling constraints are understood as relational strategies for "immanent critique" (p. 91); immanent because it is a self-determined process. Its own movement determines its actualization. Thinking about immanent processes in pedagogy implies that the learning objectives of inquiry guided by enabling constraints also need to be formulated in terms of the process. The learning objective in this project, for example, would be to explore imaged-based conversations guided by constraints and not to reproduce multiple forms of dialogue that are already established. This would imply setting the initial conditions for students to actualize complex forms of conversation instead of teaching them how to discuss the meaning of images in different ways.

Art educators have explored the use of constraints to generate reflection and creation in diverse contexts (Barrett 2000; Castro 2007; Stokes 2006; Castro 2012; Paitz et al. 2012). In this field, constraints have been approached as tactics either to develop specific ideas, anchor broad curricular inquiries or structure events. Terry Barrett (Barrett 2000), for example, used constraints as punctual tools to develop principles of art criticism. To explore diverse points of view, he worked with a prompt that asked students to talk about an image assuming the voice of one of the characters represented in the picture; students arrived at personal, precise, and

unconventional responses from that prompt. In other cases, constraints have been at the core of curricular design. Juan Castro (2007), for example, used 'constraints that enable' to guide a group of photography students towards complex and non-linear reflections in their studio practice. Questions such as "What would your self-portrait look like if you couldn't include yourself directly?" (p. 76) or "If you were to be struck blind tomorrow, what vision of the world would you leave?" (p. 79) led students to confront their own perception of the world and themselves. As Castro pointed out, after a moment of uncertainty, they found alternatives that resulted in dialogue and novel solutions. Seen through the lens of complexity theory, both the conversation and the production of images unfolded from "(…) a dynamic system of relationality, which challenge[d] linear conceptions of art educational practice and more resemble[d] theories informing contemporary art practice" (p. 78). Castro used enabling constraints to place in practice an art education curriculum that did not ask students to model artists' work but to develop a personal artistic inquiry informed by their own questions and by other artists' work.

Other artists and educators like Oliver Herring (Paitz et al. 2012), have used enabling constraints to structure events such as TASK parties. These gatherings have become popular since 2002 when Herring began hosting them in classrooms, community spaces, conferences, and other venues. The principle is simple: each participant pulls out a paper from a box and performs the task that is written on the paper. After performing it, they write another task, place it in the box and pull out another paper. In this way, participants create new tasks building on the previous ones. These experiences have been successful icebreakers to build a sense of belonging in small groups and to generate objects and gestures. It is important however to ground these events in larger curricular inquiries to ensure that the work produced is significant, context specific, and conducting to meaningful creative practices. Although people in this events imagine collectively, tease the boundaries of ordinary life, and have a lot of fun, they do not necessarily produce meaningful learning or artistic outcomes if they are not guided by complex questions or enquiries. Emergent work needs to be constraint in meaningful ways. Erin Manning and Brian Massumi note, talking about their work at the SenseLab, that

"(…) to avoid the voluntaristic connotations carried by words like 'improvisation,' 'emergence," and 'invention.' There would be no question of just 'letting things flow,' as if simply unconstraining interaction was sufficient to enable something 'creative' to

happen. In our experience, unconstrained interaction rarely yields worthwhile effects. Its results typically in lack of rigor, intensity, and interest for those not directly involved, and as a consequence are low on follow-on effects. Effects cannot occur in absence of cause. The question is what matter of causation is to be activated: simple or complex; functionally proscribed or catalyzing of variation; linear or relational (co-causal)? (Manning and Massumi 2014 p.93)"

Even when tasks open some immediate possibilities, the event is not necessarily constrained by the specificities of the context, the particular co-causes, interrogations, and tensions in the group. In consequence, it does not necessarily open new spaces of possibility.

In complexity thinking, enabling constraints are the instructions, prompts, tasks, rules, propositions, etc. that setup the initial space from where thought can spring in different directions, move in their own frequencies, and take different forms. They provide boundaries to guide learning and produce rigorous thought but also openness to build new structures. "[T]hey are not *prescriptive* (i.e. they don't dictate what must be done), but *expansive* (i.e., they indicate what might be done (…)" (Davis, Sumara, and Luce-Kapler 2007 p. 193). While prescriptive constraints seek specific outcomes and operate top-down, enabling constraints operate bottom-up (Juarrero 2000). They allow students to determine the processes and products because, even when teachers set the initial conditions, they do it based on the needs and patterns they observe in the group throughout the experience. A good example of this is an online curriculum developed by Juan Carlos Castro (2012) to teach photography through social media. In his study, the process was guided by prompts created attending to the comments and pictures posted in each phase of the project. After observing that students were imitating the composition, aesthetics, or thematic of each other's work in the first phase, he designed prompts asking them to use one of their peer's pictures as departure point for their next images. The prompts made explicit the connections that were already present while making possible the correlation of parts of that system –images, reflections, questions- that would not have been visible otherwise. The constraints acted as catalysts of social interactions within the group since students had already been observing and building on each other's work. Finally, the last instruction consisted in creating new prompts for the rest of the group. This shifted the structure of the collective because they were now assuming a different role and shaping the conditions for the last phase. It was not about the teacher giving instructions or the students acting autonomously but about them

working inter-dependently and materializing the connections between the images and reflections they had produced.

Erin Manning and Brian Massumi (2014) also think about how enabling constraints shift the role of teachers, students, artists, event organizers, and researchers in education and creative practices. In their work, when launching events through propositions, there is no longer a knower who instructs others but instead a (or a number of) facilitator(s) of processes where students/artists relate to ideas, movements, bodies, communities, concepts, the world, etc. It follows that the role of the facilitator is to create enabling constraints in response to the forces, tensions, and contexts of the learning systems where they are immersed. Thus, an experimental image-based conversation needs to be approached as a joint learning process guided by constraints that bear the tensions and relations in between pictures and observers.

In the first part of this literature review, we could see how discussions around works of art in art education have been moving towards more flexible and open paradigms where the aim is to arrive at multiple and personal interpretations and to integrate our responses with creative ways of thinking and communicating. Guiding those conversations with enabling constraints would be helpful to visualize how those tensions and relations shape our understanding and how discovering new connections between those can expand our interpretative possibilities.

In the next chapter I will discuss how Design-Based Research (The Design-Based Research Collective 2003) was used as the methodology for this study, allowing me to create an exercise around these ideas through an iterative process of three workshops. In each workshop, I worked with a group of students observing an image, or a collection of images, and experimenting with how we could talk about them. The exercise was adjusted from one iteration to the next to find enabling constraints that could help us creating those divergent ways of relating to images, those non-representational forms of interpretation that are at the core of this project.

Chapter 4 – Methodology

4.1 An iterative experiment talking about images

Talking about images is a common activity in art education, it happens constantly and in different ways. Reviewing relevant literature on how these conversations have been approached in the field made clear that our understanding of them is constantly transforming; over time, educators have wondered what skills should be developed when responding to images and how to create diverse and personal interpretations of artworks. Enabling constraints then, become helpful strategies to experiment with the structure and openness of these conversations in order to continue transforming them and expanding what they could mean and do in arts curricula. As discussed in the last chapter, these constraints need to be approached in complex ways rather than linearly opposing old and new ways of doing. That means generating other possible forms of interpretation to expand our ways of talking rather than replacing old forms of conversation with new ones.

In consequence, I explored the use of enabling constraints by developing a conversation exercise that was recursively implemented and adjusted throughout a series of three workshops. Design-Based Research was the methodology used in this project since it enabled an iterative exploration where each workshop was followed by a formative analysis of data that helped to make changes for the following. The second and third workshops were created looking at what needed to be different or what new ideas could potentially work based on the previous workshops. This methodology was complementary to the emergent curricular structure discussed in chapter two, where planning is done recursively and based on the possibilities and problems that arise while working. In this chapter I will describe Design-Based Research and its use in art education. I will also describe the three workshops and their formative analysis.

4.2 Design-Based Research

Design-Based Research was the methodology used for this project since it intends to develop interventions in the form of curriculum while also building general knowledge about learning processes (The Design-Based Research Collective, 2003). The uniqueness of Design-Based Research rests on how it, being an applied methodology, recognizes the complex nature of classroom settings, thus making effective links between educational theories and real learning

contexts (Barab & Squire, 2004). In this project, such methodology allowed to connect notions about complexity theory and emergent curricula with the development of workshops where Art Education student teachers explored *enabling constraints* to participate in *generative imaged-based conversations*. Unlike Action Research and other methodologies that also work within educational environments, "a critical component of design-based research is that the design is conceived not just to meet local needs, but to advance a theoretical agenda, to uncover, explore, and confirm theoretical relationships" (p. 5). Consequently, this project considered the particular characteristics of Art Education student teachers at Concordia University not only to respond to the local needs of this community but also to elaborate on existing theory about conversations around images in Art Education and their creative potential in visual arts curricula.

The literature on Design-Based Research is centred in curricular design as an iterative process where lessons are placed in action, revised, and re-implemented (Anderson & Shattuck, 2012; Barab & Squire, 2004; Castro, 2012; Collins, Joseph, & Bielaczyc, 2004; The Design-Based Research Collective, 2003). Data is collected from an initial experience and is attentively analyzed to re-design a new intervention making the necessary adjustments. Following this idea, the workshops at Concordia had three iterations through which the exploration of enabling constraints was refined. The qualitative data collected in each of the meetings was analyzed later to plan the following iteration. As a result, curriculum design unfolded from the process of flexible revision in which both researcher and participants were actively involved. Furthermore, the students' teaching experience was significant for the project as well as their internships in elementary and high schools where some of them implemented adapted versions of the workshop and observed how it played out in the school context. This was especially useful to link educational theory to realistic teaching practices.

Design-based Research originated from learning science research and emerged from the necessity to reduce the existing gap between observations in laboratories and actual teaching settings (Brown, 1992). Theory about this methodology has been developing since 1992 when *The Journal of Learning Sciences* published an article on Design Experiments by Ann L. Brown. Later, other journals including *Educational Researcher* (2003) and *Educational Psychologist* (2004) also discussed the characteristics and implications of this emergent methodology. In 2012, educational researchers Terry Anderson and Julie Shattuck analyzed a sample of the most relevant articles about DBR between 2002 and 2011. They observed that the effective use of

applied Design-Based Research had increased significantly during that decade, especially in K-12 settings. They also noted that 9% of the articles were related to teacher training. *Talking About Images* worked in between these two categories involving student teachers immersed in K-12 education through their internships. This conjunction made Design-Based Research especially appropriate for the project because, just like this methodology, student teachers were situated on the bridge between the theory and practice. They were constantly confronting the ideas proposed by the workshops with their experiences in the schools. This was reflected on many of the comments and questions that emerged from the workshops.

Anderson and Shattuck also noted that most of projects that use Design-Based Research are in the science education field. However, there have been significant research initiatives in art education using this methodology. Mary Erickson (2005), for instance, used DBS to develop an online art unit for secondary students where they were expected to transfer prior knowledge in the process of viewing, reflecting on artworks, and discussing them. Later, Ryan Patton (2013) also used Design-Based Research to implement a curriculum where 8-13-year old students created video games making associations between their art knowledge and their personal lives and reflecting on how systems could be formed.

A number of the projects that use Design-Based Research in art education are from faculty and graduate students at the Art Education department at Concordia University (Akbari, 2014; Castro, 2012; Lalonde, 2013). Juan Carlos Castro, for instance, has used this methodology to research about the use of social media in art education and its impact on the role of the teacher and the students in art education curricula. He found that using social media dislocates the identities of both teachers and students shifting the structure of the classroom and permitting the emergence of a collective learning system. In this system, "the definition of teacher as a singular individual needs to be expanded to include images, objects, events, encounters, and so on" (p. 165). It is in the relations between these elements and in peer-to-peer interactions that learning is possible. In a similar way, and informed by Castro's research, in this project I consider students and teachers as co-builders of webs of meanings in image-based conversations. Unlike other projects that use Design-Based Research in art education, this thesis is not focussed on the use of digital technology but on the affective relations between images and interpretations in conversations in the classroom.

Although the use of Design-Based Research has been effective in many instances, it has also been criticized for not using isolated variables, control groups, and fixed procedures to prove the applicability and validity of its findings –as learning science research would. These methods are not used in DBR because multiple interrelated variables and distinct contexts matter for this methodology and cannot be disregarded. Curricular interventions need to be specific to their contexts in order to be valid and meaningful in real teaching settings: variables in the social complexity of real classrooms cannot be controlled and are always interrelated and dynamically evolving (Juarrero, 2002). In the same way, conversations around images in education need to be understood as complex phenomena with multiple and constantly changing relationships. Certainly, a great challenge of Design-based Research is to account for unique learning environments while simultaneously attempting to build general knowledge about education. However, generating valid knowledge about how people learn –or about how people relate to images through conversation– does not imply creating replicable or predictable teaching methods. Even more so when "accounts of complexity-informed research can never be offered as events to be replicated or even held up as models" (Davis & Sumara, 2009 p.42). Alternatively, Design-Based Research favours the generation of adaptive theories that provide insights about learning processes while also recognizing the complexities of each particular context. It is within such paradigm that this project looks at possible ways of creating conversations articulated with creative processes in which relations between images are explored.

4.3 Procedure and ethics

This study was done after receiving a certificate of ethic acceptability for research involving human subjects from Concordia University Human Research Ethics Committee[1]. It had three iterations; the first with ten students registered in the class ARTE 424/425, the second with four students from that same group, and the third with eight students registered in the class ARTE 420/421. The students were invited and decided to participate voluntarily. It was not related to any of their academic work and their performance was not evaluated in any of their classes. Each student signed a consent form authorizing me to use their work in these workshops as data for the study. Some students authorized me to use their name and some others preferred

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[1] See Appendix I

to be anonymous. For that reason, some of the names in this document are pseudonyms. It is not specified which names are attributed and which are students' real names.

	Number of Students	Time	Number of Images
Workshop #1	10	45 min	1
Workshop #2	4	45 min	20
Workshop #3	8	45 min	30

4.4 Data collection and Analysis

Collins, Joseph, and Bielaczyc (2004) differentiate between two stages of data analysis in Design-Based Research: formative analysis, which refers to the revision that occurs from one iteration to the next, and summative analysis, which alludes to an overall evaluation of the curricular design in relation to the initial research question. Since the objective of this methodology is to optimize educational design, formative evaluation is necessary to revise and reformulate it 'until all the bugs are worked out'. But how is it different to refine the design of a simple product than to refine the design of a complex learning experience? Fixing the bugs in the design of a simple piece of furniture seems reasonable. Even when the form could change significantly through the process, the designer would be able to predict the outcome with some accuracy from the beginning. On the other hand, complexity theory strives for "the emergence of the as-yet unimagined" (Davis & Sumara, 2009 p.38). The form of the outcome cannot be foreseen even when the learning objectives are defined. For this reason, when framed in complexity theory, formative analysis in Design-Based research needs to be attentive to how the intervention is making possible –or not– those conditions for emergence. With this in mind, the objective of formative data analysis is to identify key elements of the design and evaluate their implementation to determine which need to be changed in the next iteration and why. Some aspects to be observed include the interactions between participants, general climate (cooperation, engagement, participation), effectiveness of the resources, and cognitive impact of the activity (Collins et al., 2004). For this stage, the data was analyzed using a simple tagging system to identify responses to each one of these aspects. The data observed included lesson

plans, video and audio recording of the sessions, written feedback from students, notes, pictures, and the material produced during the workshops.

Summative analysis, on the other hand, is the comprehensive study of data in relation to the initial research question: *how do constraints applied to conversations about images enable pre-service art education student teachers to develop divergent ways of relating to images in visual art curricula?* Summative analysis observes how the question is being answered throughout the workshops and is also useful to refine the question itself. Summative analysis was helpful to establish relations between the research question of this project and complexity theory and to develop a more precise understanding of how *enabling constraints* work and what the meaning of those *divergent ways of relating* is. The data included the lesson plans from the three workshops, notes, material produced during the meetings, audio and video recordings, pictures, and a final questionnaire[2] where the students narrated how they had adapted the workshop in their teaching internship. This set of information was analyzed with a simple tagging system in order to identify aspects of the workshops related to complexity, enabling constraints, responses to images, and the emergence of new images.

4.5 Formative Analysis

The use of enabling constraints for experimental image-based conversations was explored throughout three workshops with two different groups of art education students. The first iteration began with a rather simple use of constraints to diversify interpretations. This later opened up into more complex uses of constraints in the second and third workshops, enabling a wider web of interpretations and relations.

The first workshop was designed based on observations from a pilot project that took place during the winter of 2013. Two groups of graduate students from the Art Education department were invited to talk about their artworks following prompts that aimed to diversify interpretative possibilities and expand the vocabulary often used to describe artworks. Some examples were: "talk about this image without using any adjectives" or "talk about this image as if it was a still-frame from a movie". During the workshop, the participants noticed a higher level of empathy and a greater sense of reflection towards the artwork. One of them said she had truly looked at the image and found her own words to express what she saw rather than repeating the

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[2] See Appendix III

discourse she had learned in art school as she often did. It was also observed that the group could design prompts, auto-regulate their use, and moderate the discussion. The pilot also left information that was useful to prepare logistic aspects of the first iteration of this project. For instance, the use of visual aids like mind-maps and postcards needed to be implemented in order to display and collect information. In terms of time, participants needed at least ten to fifteen minutes to respond and develop a consistent adaptation to the prompts. This information was used to design the timeframe and supporting material used in the first iteration.

4.5.1 Workshop #1 - The opposite of revenge

Figure 5 - Skoglund, S. (1981) *Revenge of the Goldfish* [Color photograph]

This first workshop was structured around the use of constraints developed by psychologist and artist Patricia Stokes (2006). In her work, prompts are designed to preclude old ways of doing and promote new creative solutions to increase the variability of the outcomes. I opened the workshop with a brief introduction to the research project, the history of art criticism in art education, and the usefulness of constraints to trigger variability and creative thought. With this in mind, the participants were invited to engage in a discussion about a picture while also taking notes about the characteristics of the conversation. Later, they would create constraints

that could preclude the trends they had observed and open new directions. The image selected, *Revenge of the Goldfish* by Sandy Skoglund (1981) (Figure 1), was challenging enough to initiate an interesting dialogue and provoke multiple interpretations. I began by giving a short introduction to the artwork and asking questions about what they noticed in the picture and what interpretations could be made. Then, in groups of three, students discussed the patterns they had identified in the discussion and thought about a prompt that could either prevent or exaggerate those patterns. They noticed that the conversation was generally in first person and present tense. Also, it usually revolved around the formal elements of the image and then moved towards interpretations based on personal experiences and narratives. They came up with the following prompts to shift those trends: 1) "No description of the present; can only discuss what happened before and after" 2) "Do not describe the image using the colours you see but imagine the image as black and white and describe it" 3) "Disconnect the figures from the image, do not discuss the figures (people)" 4) "Describe what you think would be the opposite of this image." After, they exchanged the constraints they had created and had a small group conversation about Skoglund's picture but this time following the prompt they had just received. Finally, each group gave feedback to the group that created the constraint talking about what different ways of interpreting the image had emerged or what problems were encountered.

4.5.2 Formative analysis – Workshop #1

This first iteration left positive feedback and the prompts designed by the students produced diverse interpretations that would not have been encountered without those constraints. Overall, the workshop was successful in creating a comfortable atmosphere that favoured collaboration and dialogue. The students enjoyed the activity and found it useful to have more awareness of the patterns that are usually followed when discussing artwork. They enjoyed designing new 'rules for the game', exchanging constraints, and following someone else's rules. In terms of logistics, it was observed that the timeframe had to be adjusted for the next workshop so as to give a shorter introduction and more time for collaboration; this, given that the most dynamic part of activity was when students worked in small groups and exchanged rules.

The prompts diversified the interpretations of the artwork and students had fun working with them. However, this paradigm of constraints was not entirely satisfactory because only one of the prompts resulted in a radically new approach to the image. Constraints one, two, and three

dealt with formal and narrative aspects of the interpretations and were prescriptive in their structure; this were not constraints that enabled but constraints that disabled (Castro, 2012). As Juan Carlos Castro explains, disabling constraints are those that prescribe solutions, outcomes, and ideas. Since this model of constraint functions by prohibiting old ways of doing to replace them with new, it creates a dialectical relation between old and new. This relation operates in a simple cause-effect mode that does not reflect the dynamic network of relations that characterizes conversations where new ideas emerge. It generates, instead, simple prescriptive solutions. The students observed that even when the responses to these first three constraints opened certain possibilities, some information was lost and the nature of the responses was still similar to those identified in the original conversation. Even when these rules did in some way shift the initial interpretations of the artwork, they were not sufficient to expand the conditions for emergence of new ideas, relations or images. Paradoxically, the only constraint that did not operate in terms of opposites was the only that contained the word *opposite*: "Describe what you think would be the opposite of this image." The response to this prompt generated new images and not only included formal and narrative observations but also the students' affective relation to the picture. What could it become? The opposite of Revenge perhaps.

As discussed in Chapter 2, Terry Barrett had already worked with Sandy Skoglund's images in the 1990's giving prompts to students in order to arrive to new interpretations. In his article "About Interpretation in Art Education" (2000) Barrett described the use of writing prompts to help students reach new personal interpretations of the artwork. Similarly to the constraints created by students in this first workshop, his constraints were more related to the interpretative framework than to the structure of the conversation. For example, he would ask students to "assume the point of view of a person, animal, or object in the picture and to write about the picture using first person singular" (2000 p.13). This was important for him because he was thinking about the multiple possible interpretations that could be made in response to an artwork. Even more, it was meaningful in terms of art education curricula because it was giving value to personal and multiple interpretations instead of reproducing the role of the art critic in the classroom. Building on Barrett's work, the next step would be not only accepting or respecting personal interpretations, but also integrating them in more-than-personal networks of meaning. The structure of the next workshop would need to enable the visualization of relations between interpretations, express affective responses, and generate new ideas and images. The

paradigm of constraints needed to shift from disabling constraints that worked in terms of opposites (i.e. precluding the old ways of doing to enable new ways) to enabling constraints in terms of complexity.

4.5.3 Workshop #2 – Making connections

"If there were 1000 of me, they would all be right here"[3]

The emphasis of the intervention changed radically after the first workshop. The second workshop was planned thinking about constraints that could not only encourage multiple interpretations, but also help students visualize the connections between those interpretations and allow the emergence of new structures and images. The paradigm of constraints changed from Stoke's approach to one defined as *constraints that enable* (Castro, 2007; Davis, Sumara, & Luce-Kapler, 2007; Manning & Massumi, 2014) –understood as strategies to initiate relational and complex discussions.
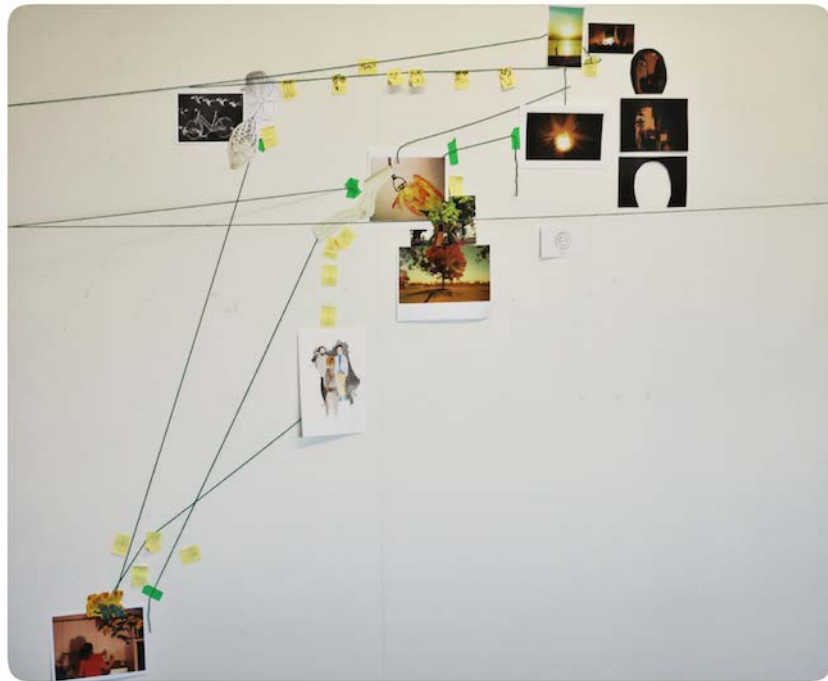

Figure 6 - Map Detail - Workshop #2

Four students from the previous group participated in this second iteration. The workshop began presenting a set of images[4] and asking the students to collectively map the connections

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[3] From participants' anonymous written feedback

between them by using the architecture of the classroom as the surface for a spatial mind map of relations. They worked placing the images in different parts of the space and visualizing the connections with string, tape, and post-its. After around fifteen minutes of work, the group organically began conversing and each of them explained the connections they had encountered: Why they had decided to place the images on the map in a certain place? How had they tagged the connections with the post-its? Throughout that conversation, new connections were added to the map. After, they had a moment to make adjustments and add post-its naming the connections that had not yet been named. Making the map was the first constraint they followed. Afterwards, they were also asked to create new constraints to continue talking about the map they had created. These constraints, contrary to the ones they had created in the last workshop, were not intended to ban old ways of doing. They were asked to think about constraints as agreements to expand the conversation they had just had about the map they created. The group came up with three prompts: 1) "Move a connection that is not yours and explain why" 2) "Explain a connection that is not yours" 3) "Draw or duplicate one of the images and place it somewhere else in the map." For the last half hour of the workshop, they took turns to respond to each of these prompts and they finished writing some feedback about the activity.
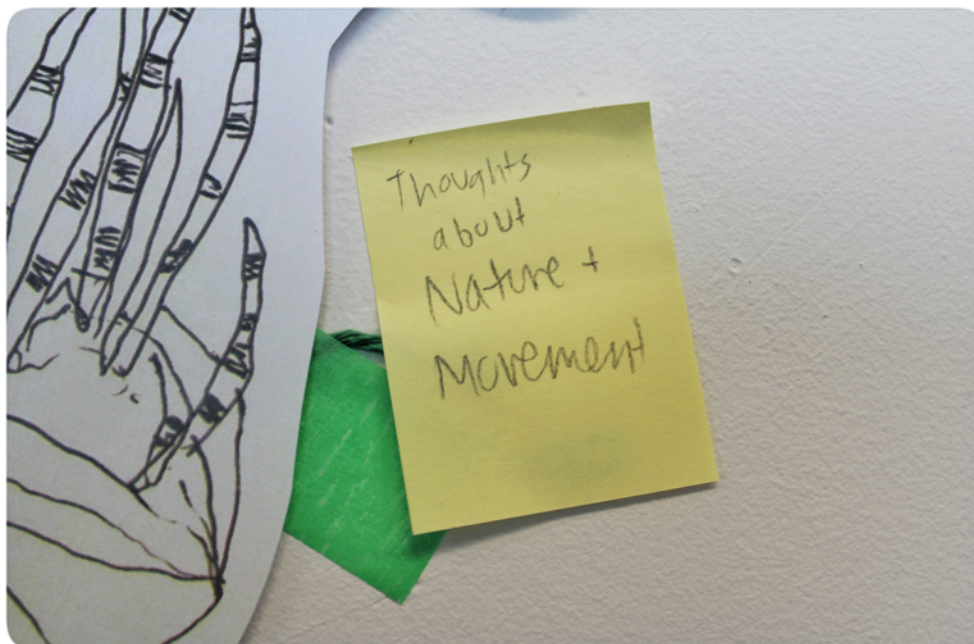
Figure 7 - Nature + Movement - detail map workshop #2

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[4] These were images that I had collected and that included drawings, found pictures, and texts.
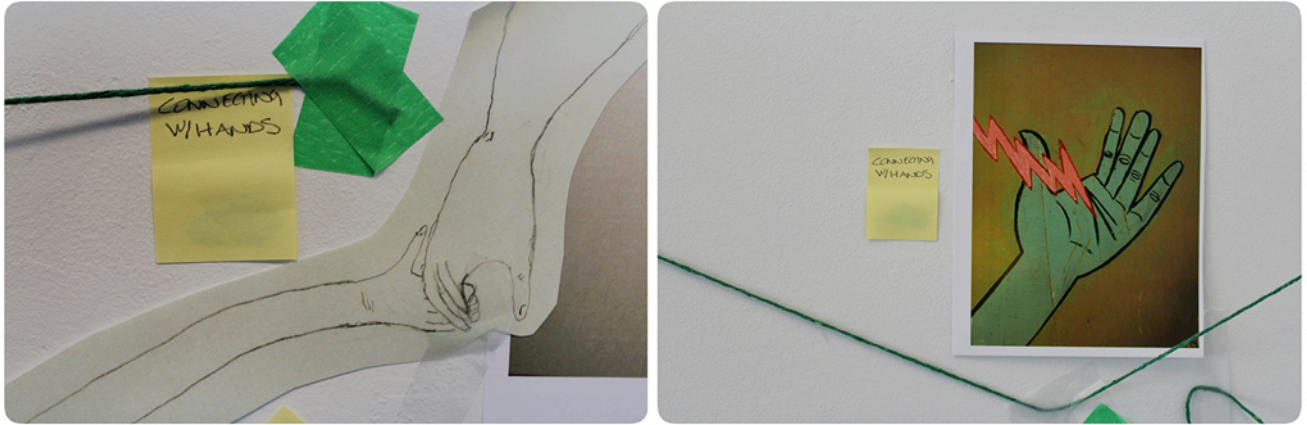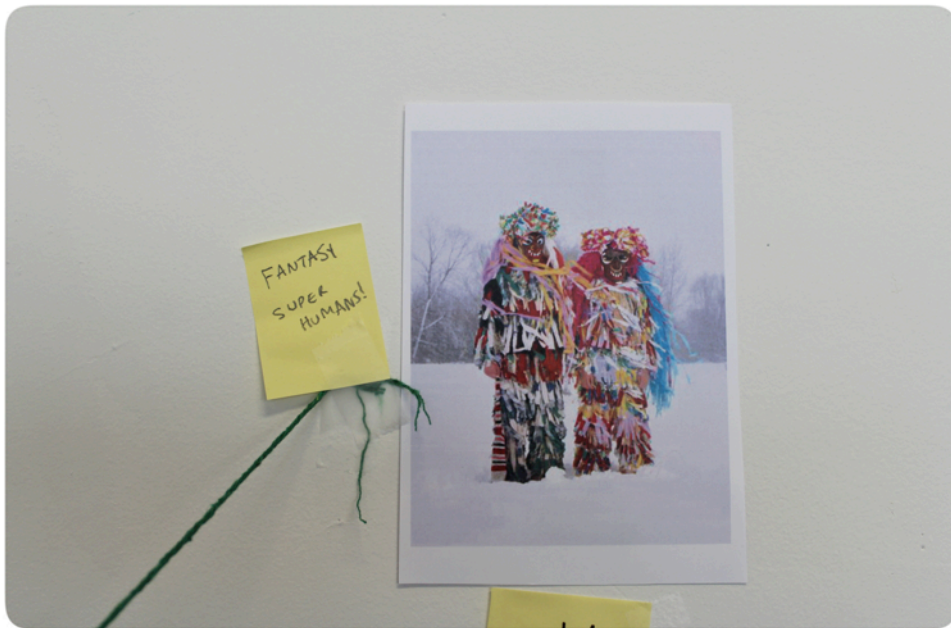
Figure 8 - Hands - Detail Map Workshop #2

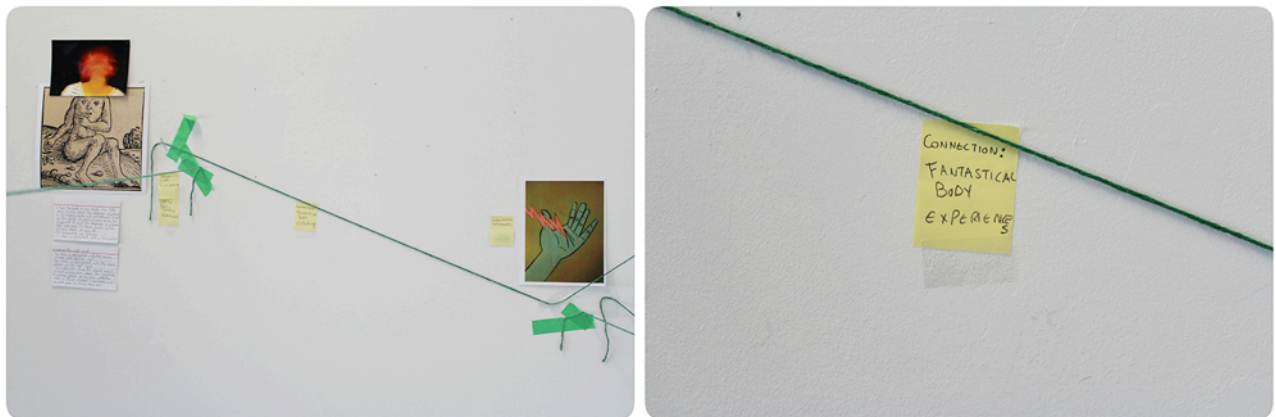Figure 9 - Super humans - detail map workshop #2

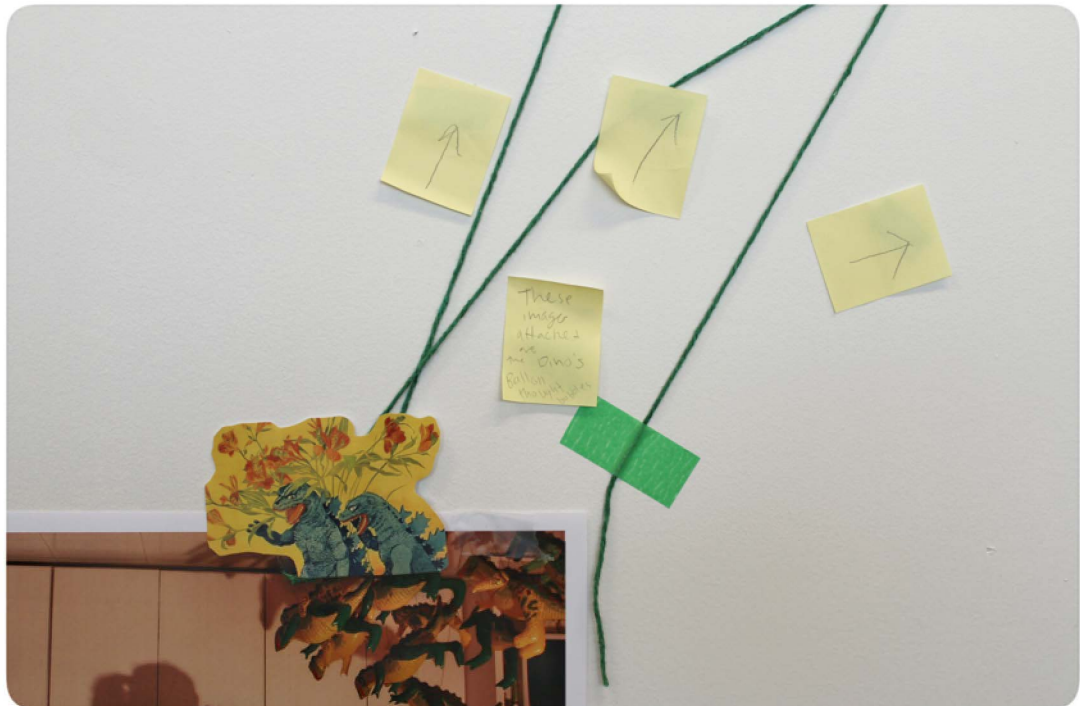Figure 10 - Fantastical Body Experiences

Figure 11 - Detail map - Workshop #2
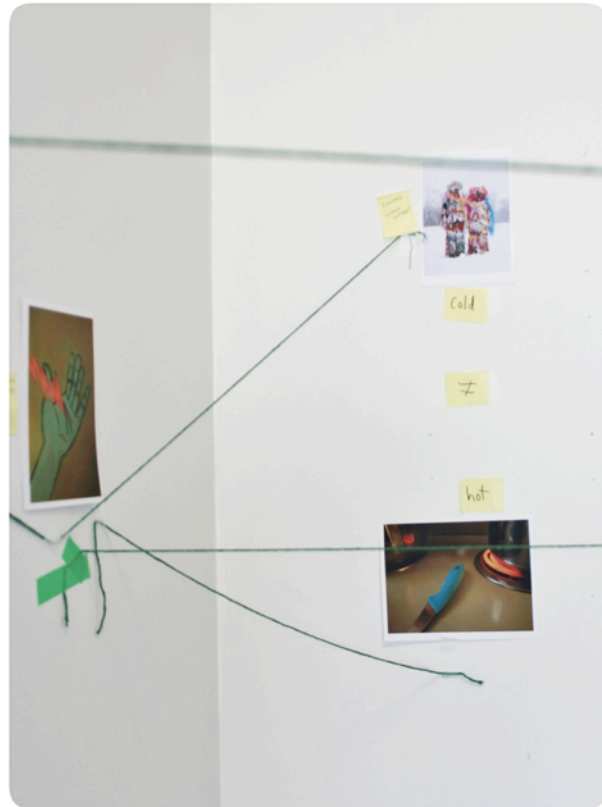

Figure 12 - Dinosaurs - detail map workshop #2

Figure 13 - Detail map - Workshop #2

Figure 14 - Detail map - Workshop #2

4.5.4 Formative analysis – Workshop #2

The second iteration marked an important shift from individual to collective work. Creating a relational map together made possible a conversation where students not only observed and interpreted the pictures but also thought about how the images affected them and affected each other when juxtaposed. As in the first workshop, the feedback was positive. They were also more personally involved in responding to their peers and there was more organic conversation during the activity. Instead of simply accepting other meanings as valid, they were able to feel empathy and relate other meanings to their own. Their interpretations were connected with other interpretations both visually –through the strings and tape– and verbally. Elise, commented: "at first I had to be in my mind zone not saying anything but just connecting with the images (…) but then gradually I started looking around at what other people were doing and that is when I did connections to other groups (…) and even more so when we were talking about it, other peoples' ideas influenced my ideas and I changed what I had…". The map, as an enabling constraint, made possible a complex web of meanings beyond personal interpretations, which also changed the structure of the conversation. In the same way, the prompts created by the students towards the end of the workshop, for example explaining someone else's connection, also created a feeling of empathy and enabled interactions between students.

Another strength of this second workshop was that it integrated visual, embodied, and verbal forms of thought. Mapping on the space helped students develop affective relations to the place and the pictures. A participant said: "I feel because we all touched [the images] and cut them and moved them around (…) the memory of those images is so much stronger." As discussed in the literature review, other art education scholars had also recognized the importance of embodied knowledge in art appreciation. Olga Hubard (2007), for example, had developed strategies for museum education based on the physical gestures people performed in front of artworks at the museum. In this case too, movement expanded the possibilities for relation and understanding.

According to the feedback received, some parts of the workshop could work better with more guidance, especially the progression of individual work to group work. From the beginning, participants were asked to create a collective mind map and they all found shifting from personal interpretations to collaborative work quite problematic. They also mentioned this could be complicated with younger students since they are often more attached to ownership and

could have a hard time accepting someone else's intervention in what they had done. Even though they were university students, the participants did not feel comfortable changing what someone else had done or seeing someone changing what they had done until they created the prompts that explicitly asked others to make interventions to the map. Making the progression explicit could help students understand the process and feel more comfortable collaborating. Giving more guidance could also help to concretize ideas that seemed too abstract or ungraspable, which can be challenging when the instructions ask students to represent affective and relational responses that are often difficult to express concretely.

4.5.5 Workshop #3 – From individual to collective work

Eight students from the class ARTE 420/421 participated in the third and last iteration of the project. The general structure of the workshop was similar to the second iteration but the progression from individual to collaborative work was more guided, new images were added to the set, and the activity closed with a round of questions. Working with a different group was helpful to understand how the workshop changed with different students.

Like in the second workshop, the group followed two different layers of constraints: one included the instructions to collectively create a relational map with their interpretations and another included the prompts they created later to talk about such map. As suggested in the previous iteration, the shift from individual to group work was more explicit and directed. The collection of images was displayed on a big table and the activity began by walking around the table, in silence, and thinking about the relationships between the images. After, they were asked to choose the connection they had felt most strongly and paste it somewhere in the space using the room to represent how the pictures related. Placing opposite images on opposite walls, for example. When they were done, they used post-its to name the connections they had found and to add comments with observations about other people's relations. They did this in silence, walking around and observing each other's work. Then, they were asked to integrate the images left on the table either to their cluster or others' and to add links between each other's maps. They used string and tape to visualize the connections and scissors and markers to work with fragments or to intervene the images. The group slowly began making comments and having short interactions. After approximately fifteen minutes, they were asked to work in pairs and think about conditions or 'rules for the game' to talk about the map they had made. They created

the following prompts: 1) Move an image to another group and say why. 2) Physically interpret a portion or the whole part of the images 3) What are the similarities in each group? 4) Can you tell a story with one group of pictures? 5) Can you associate any artist or art movement with a group of pictures? 6) Explain someone else's connection 7) Take a picture, someone else has to pick another picture that feels totally opposite and you have to create a connection between the two 8) Make connections to images where there are none 9) Describe the images but you are not allowed to use the words *like*, *not like*, *beautiful*, or *juxtaposition*. Following this, the participants took turns to pick one of the prompts and respond to it. Finally, each one asked a question, either to the group or to an individual, reflecting on different aspects of the activity. Some of them asked about concrete moves or decisions other people had made in the elaboration of the map. Some others asked general questions about the form of the map, questions relating the exercise to curatorial practices, and questions about this research project and past workshops.
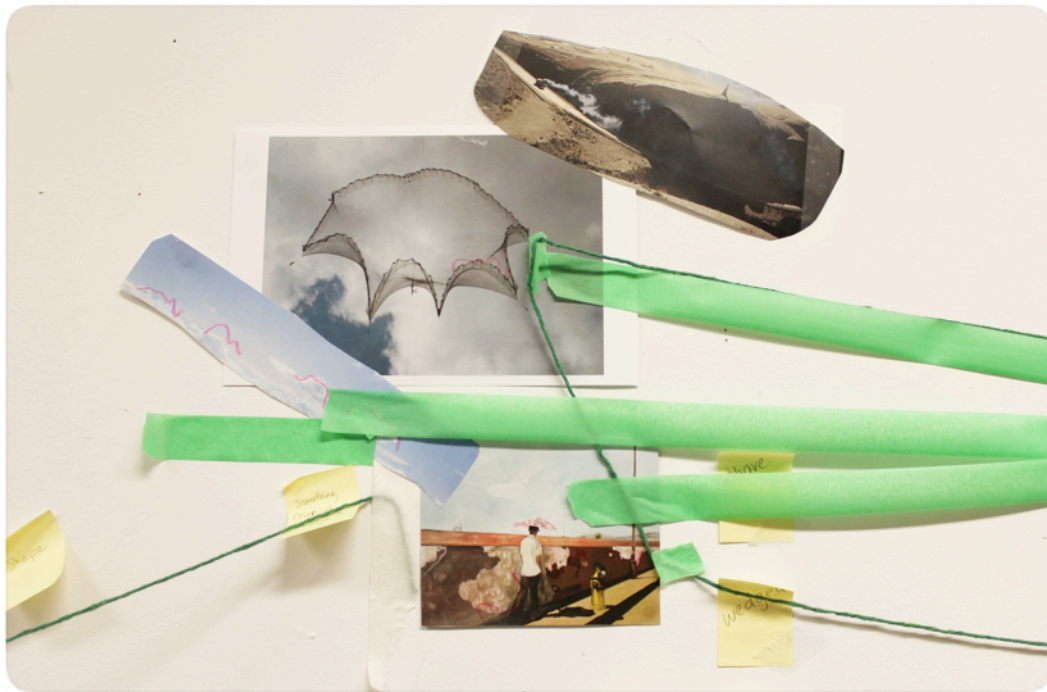

Figure 15- Detail map - Workshop #3

Figure 16 - Detail map - Workshop #3

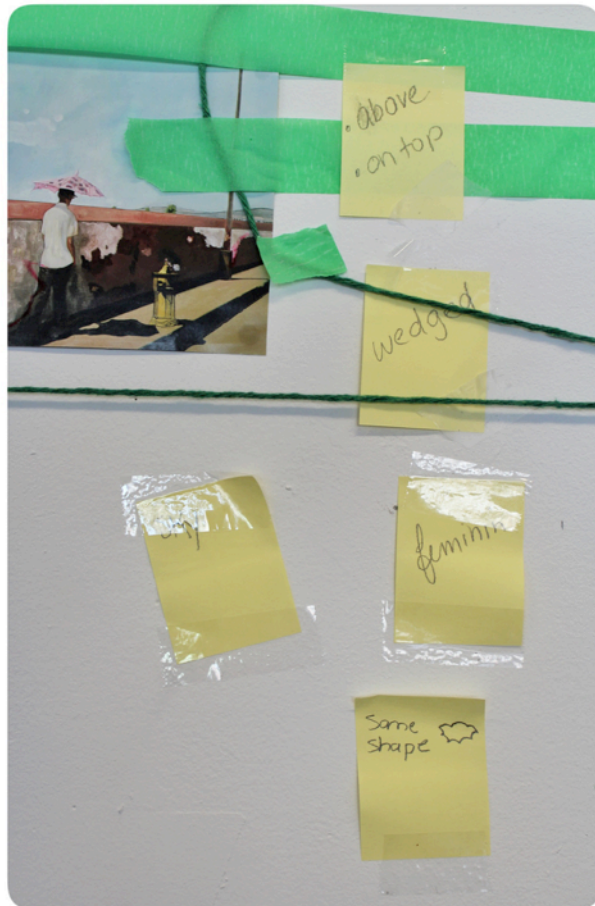Figure 17 - Detail Map - Workshop #3

Figure 18 - Detail map - Workshop #3

Figure 19 - Detail map - Workshop #3

4.5.6 Formative analysis – Workshop #3

In this third workshop, the transition from individual to collective work was more straightforward and guided, which was helpful to create an atmosphere where students felt more comfortable collaborating and interacting with each other's work. This might have also been aided by the relationship the group already had. The feedback was positive and the group was very engaged. The time frame and supporting materials worked well. A few more images were added to the collection to give more variety and this led to the diversification of interpretations. Although some of the prompts created by the students were not open ended, most of them enabled interactions between students, embodied forms of dialogue, and the emergence of new connections and mental images. Unlike the first group, this group did not receive information about enabling constraints before the activity and did not have any background about the project. However, they enjoyed generating and exchanging these 'rules for the game' and the prompts helped them to observe the map with closer attention. Their observations from the work with constraints were key for the questions at the end of the session. These questions were the most productive in terms of interconnected meaning and reflection.

4.6 Formative analysis conclusions

From workshop to workshop, the exercise changed developing more complex constraints to guide the conversation. The first workshop, conceived to generate divergent conversations in opposition to traditional ones, began as an activity where I contraposed old and new ways of doing. At that point, I was intending to create change at a conceptual level but without changing anything in the way the students interacted with the material, with each other, and with myself. For the second and third workshops I realized that the divergent and non-representational forms of interpretation I was looking for could only be found by shifting the interactions taking place within the class. Thus, I decided to bring a collection of artworks rather than one image and proposed the elaboration of a map of relations between these. The instructions to create that map were the main enabling constraint to initiate conversation. They were later complemented by instructions that the students gave each other to find more connections after making the map. This helped them to visualize relations between their interpretations and to find relations that were not apparent.

In the next chapter I will discuss how these enabling constraints made possible different affective and generative ways of relating to images, how they changed the curriculum's structure, and how talking became a creative process. I will also begin to outline how similar exercises could be implemented in art education.

Chapter 5 – Findings

5.1 Summative analysis

In this project I was interested in creating an exercise that explored alternative forms of conversation about images in visual arts curricula through the use of enabling constraints. I used Design-Based research since it is a methodology that develops interventions in specific educational contexts while also producing general knowledge about learning (The Design-Based Research Collective, 2003). In DBR, curricular interventions are created through an iterative process where each implementation is analysed to refine the design and to make adjustments for the next. Following this methodology, I developed a conversation exercise where the students created a map of relations between images and between interpretations attending to their formal and affective qualities. After, they created instructions to intervene the map and find connections that were not apparent. In the previous chapter I described each of these three workshops and their formative analysis.

In this chapter I will discuss the summative analysis of the data looking at how these maps of connections enabled divergent ways of relating to images. As defined by Collins, Joseph, and Bielaczyc (2004), summative analysis in Design-Based Research deals with the general study of data in relation to the initial research question, in this case:

> *How can conversations about images guided by constraints enable pre-service art education student teachers to develop affective and generative ways of relating to images in visual art curricula?*

The findings of this project are divided in four sections where I will discuss relational conversations, curricular structures, creative practices, and adaptations for art education. In the first section I will look at the use of constraints to enable peer-to-peer learning and physical interactions with the space and the material. In the second section I will consider how this exercise made possible decentralized and emergent curricular structures. In the third I will discuss how talking became here a creative act, a form of making and thinking where students could have unmediated encounters with images. Finally, in the fourth section I will present some general reflections about the application of similar exercises in formal education by looking at

activities that two participants –based on these workshops– adapted for their high school students.

5. 2 Relational conversations

One of the ways in which structuring dialogue through a spatial mind map enabled divergent ways of engaging with images was by creating a relational conversation. Although all conversations involve *interactions* between interlocutors, they are not all necessarily *relational*. As defined by Brian Massumi (2008), "the back and forth [of interaction] is an action of reaction" (p.7). Each converser listens and *reacts* to the other; their exchanges are subjective, instrumental, and driven by a specific purpose, perhaps understanding the meaning (or meanings) of an image. Contrary to interaction, Massumi understands relationality as co-causal: actions are generated by the affective relations in and around the collective, like an ecology of causes. Thus, a relational conversation would not be held in relation *to* images but *with* and *in-between* them. Myriam, one of the participants in the second workshop, said: "building the map in silence was already a conversation going on without words". Facing the pictures and observing the tensions they produced was our starting point even when it took us about twenty more minutes to start talking.

Considering the relational quality of these conversations is also important to continue the work done by other art educators who have advocated for a pedagogy that allows students to build personal interpretations of artworks (Barrett, 2000; Garber, 1990; Hubard, 2007a; White, 2011). Their work has been essential to acknowledging the students' voice and their capacity to create meaning and to explain and support their ideas. Thinking about these conversations as complex phenomena allows us to see them as spaces where students not only learn to support their opinions and respect others but also to understand how they are affecting other's responses to images.

5.2.1 Conversations and complex learning systems

Since the map represented the network of connections between different elements in this conversation, it made visible some of the characteristics of complex learning collectives. For instance, the different layers of connections illustrate well their nested structure. In this structure, networks contain and are contained in other complex networks (Davis & Sumara, 2006). Here, each cluster of images contained links and at the same time each was linked to other clusters.

Even more, some groups of clusters were connected to other groups. The associations within each of these levels were not fixed because their meanings shifted and influenced other connections. For instance, a student explained: "I made this connection just because of the point on light, it was just visual." A second student placed another image just below to show that it was "an extra almost conceptual point of light" and suggested a connection. In this example, someone's perception was made communal and a new link was formed beyond formal resemblances.
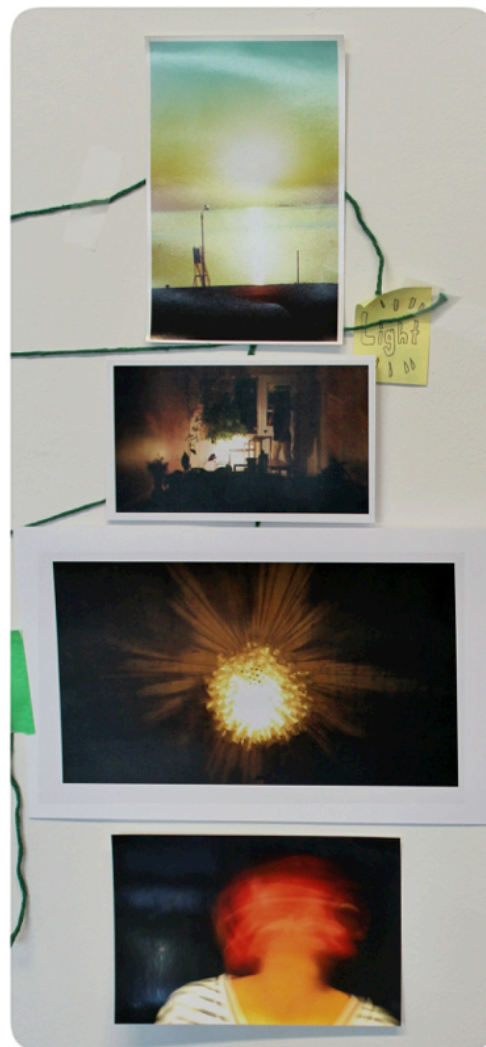

Figure 20 - Points of Light - Pictures by Raul Toca
(Top) and Laura Wiesner (bottom)

Complex systems are also characterized for a balance between *internal redundancy* and *internal diversity* (Davis, Sumara, & Luce-Kapler, 2007). Redundancy refers to the similarities

amongst a system, which make possible its cohesion. Diversity refers to the differences amongst the system, which make possible alterity and variations in its responses. The redundancy in this exercise was present in the common codes of representation students used to map relations and in the common references (i.e. the collections of images) they used. This redundancy made possible some agreement and empathy amongst the group. At the same time, there was also enough diversity of responses and interpretations to activate the discussion. The balance between redundancy and diversity was also at play in the tensions between familiarity and strangeness provoked by the images. These made possible relations that felt possible but also uncanny and that felt like "Seeking the familiar / seeking the unknown at the same time", as a student wrote after the second workshop.

5.2.2 Peer-to-peer learning

The conversations generated in this exercise were also relational in how they favoured collaboration and peer-to-peer learning. Myriam, a participant in the second workshop, observed: "the connections were pushed forward because we were a group, we can make a mind map by ourselves but it is not as enriching." During the first workshop with the same group, when the map had not yet been proposed, the responses to different opinions did not go far beyond agreement or disagreement. In contrast, in the second workshop, new understandings were provoked by the dynamic interactions between students. As Juan Carlos Castro (2012) explains, this dynamic interactions are the continuous exchanges between students that make "meaning exists in relations and dialogues" (p. 158). The participants were not necessarily used to experiencing the permeability between their interpretations and they enjoyed having a space that explicitly allowed them to be influenced by others' thoughts and vice versa. Elise, a participant in the second workshop noted:

> "I was thinking about how interesting it was to do it as a group because (…) first I had to be in my mind zone not saying anything but connecting with the images from my own so I started doing that and then gradually I started looking around at what other people were doing and that's when I did connections to other groups (…) other people's ideas influenced my ideas".

Working side by side, they integrated different perspectives despite their alterity. Visualizing and materializing these relations, how ideas resonated or repelled each other, helped to make sense of them.
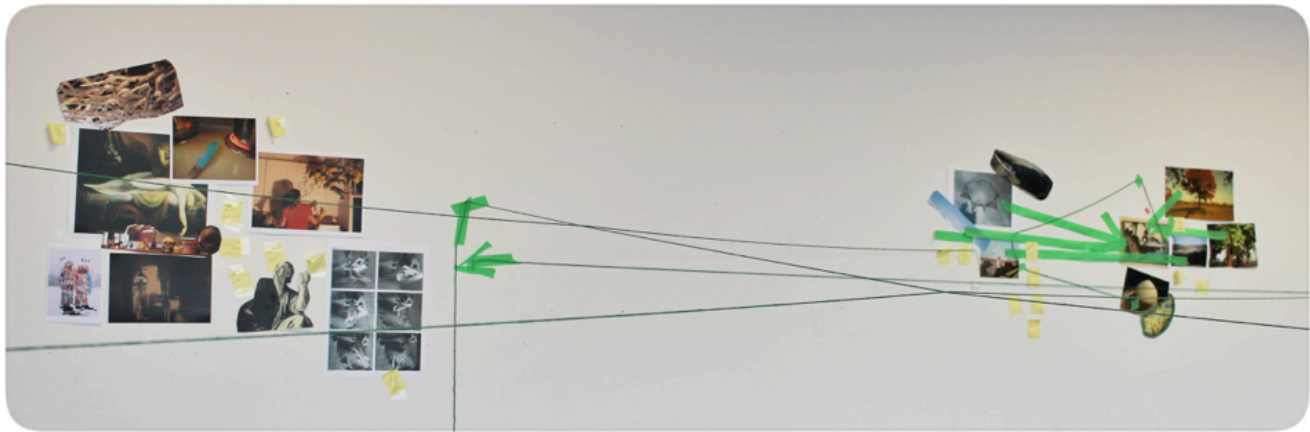
Figure 21 - Map Detail - Workshop #3

5.2.3 Mapping connections

Why mapping connections? Because, as Claudia Ruitenberg (2007) noted in her article *Here be dragons: Exploring Cartography in Educational Theory and Research*, the networks of interrelations that characterize complex systems can be represented well through maps. Unlike a linear text[1] or a chronological narration, maps emphasize spatiality over temporality and can show many ideas at once giving a general sense of how they relate. Additionally, "maps require the creation of a spatial order, the selection of symbols, and the establishing of boundaries" (p. 15) which imply critical thinking. Furthermore, as she notices, the act of mapping does not merely represent relations that already exist. On the contrary, as one builds a map one creates those relations. In that sense, she says, mapping is a discursive practice in which knowledge is performed and in which associations are not fixed but constantly changing.

In consequence, in the second and third workshops, mapping connections between pictures implied creating new interpretations but also transforming and expanding them. After establishing some initial links, the participants created instructions for their peers to alter the map. Some of these were: "move an image to another group and say why", "explain a connection that is not yours" or "create a connection between two images that seem totally opposite". In the example discussed in the introduction, for instance, the group linked two previously unconnected

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[1] The workshop at the MITAV program in Bogota, Colombia was part of a seminar on 'expanded writing' and explored how the maps generated in these exercises could be a non-linear form of text. See appendix III

areas of the map through the idea of change since they both evoked a sense of transformation. Ruitenberg explains that, while mapping, "one may discover other nodes and connections not previously realized, or one may question the position assigned to certain actors in the web" (2007 p. 18). Indeed, the instructions that participants created were fundamental to trace associations that had not yet been found and that later influenced other interpretations too.

5.2.4 Moving differently to talk differently

After the first workshop, it was evident that accessing other-than-rational forms of thought *through* rational thought was not sufficient. During that first iteration, the students observed a single image on a projection, followed the discussion, and thought (rationally) about constraints that could change their conversational patterns. These activities reproduced the fixed roles and forms of thought that are common in formal classroom structures. In consequence, most of the prompts generated were quite prescriptive and did not provoke alternative modes of relation. In order to establish a different approach to thought, the relation to movement and to the space also needed a radical shift (Manning, E. Personal Communication, October 2014). In her work in museum education, Olga Hubard (2007) has used embodied responses to allow interpretations that include different kinds of aesthetic experiences. She found that, by performing subtle gestures in response to artworks, spectators engaged with aspects of the work that diverged from rational discourse and were able to arrive at personal interpretations. Similarly, in the second and third workshops, elaborating a spatial map allowed the group to move and have physical interactions with the room, their peers, and the material. Zoe noted:

> (…) If you had just presented the images to us on a PowerPoint (…) how different that would have been (…) now I feel that because we all touched them and moved them around the memory of those images is much stronger.

In their physical interactions with the material and with the space they represented connections (by using strings, arrows, tape, etc.) where, as a student mentioned, "literal physical relations [were] made, like a web (…)". Other times, they used proximity/distance or intervened the originals segmenting or fusing them. Another student commented: "I was happy when you said we could cut because then I was like: oh I can actually merge the pictures together". Touching, moving, cutting, pasting, drawing on the material, resulted in more possible connections.

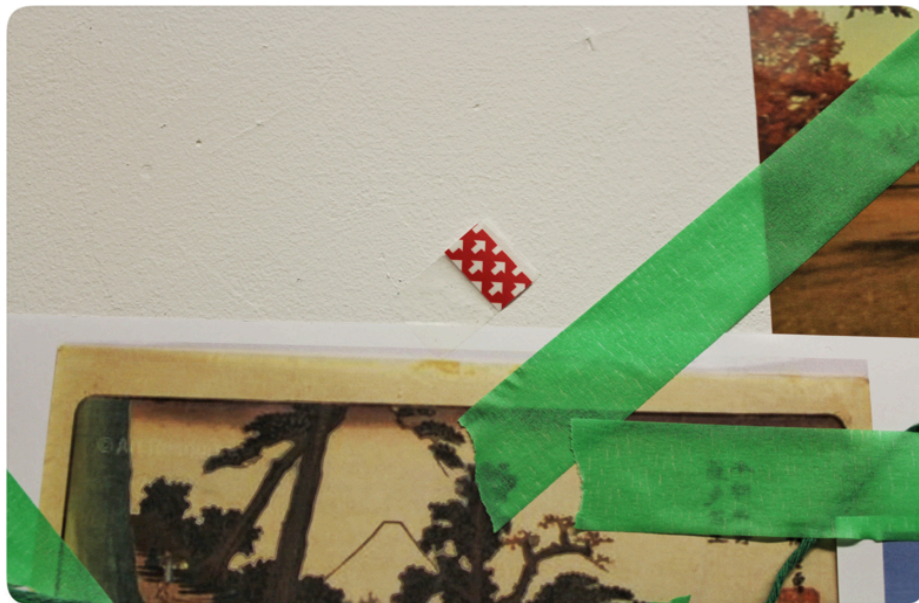Figure 22 - Detail Cutting and merging pictures - Workshop #2

Figure 21 - Arrows Detail - Workshop #3

5.2.5 Mapping connections onto the space

Finding affective and generative ways of relating to images did not only involve considering how our bodies entered and moved in the space but also finding connections to the classroom's architecture. In the second workshop, and even more in the third, several students included the room's architecture as part of the map. Looking at the work she had done on a window, Kanella explained: "I thought the images were kind of surrealistic so I thought having them against the infinite sky would be fun". "Celestial juxtaposition!" –Matthew joked. And a third student asked: "So do you think we should consider the buildings and everything we see outside as well as the images, *with* the images? (…) And with the changing lights too?" The discussion continued until the group realized that this 'celestial juxtaposition' was not gratuitous; the images did not only relate to each other but also to the building and the view. The rapidly changing lights in the sky at sunset seemed to make perfect sense with the dream-like drawings. Then, another student commented:

> "I like how you incorporated the outside and I hadn't really thought about incorporating the room but now that you are mentioning that, that's another way that you can incorporate ideas and pictures, like incorporating them with the physical space. So how would you use, lets say, that column with this picture?"

Figure 24 - Detail Window - Workshop #3

They decided to add an extra string across the room representing a meta-connection between this cluster and another cluster that evoked and idea of change since these images were in relation to how the light changed in the room. Talking about the images that were on the window opened interpretative possibilities that kept reappearing in the conversation thereafter.

Figure 25 - Clusters that represent movement - Workshop #3

5.3 Curriculum Structures

5.3.1

Decentralized curriculum

One of the ways in which structuring conversations through spatial maps allowed students to arrive at complex ways of relating with images was by changing the structure of the class and making it a decentralized space. I found that organizing the conversation around a central axis, a PowerPoint presentation for example, did not generate the divergent ways of thinking I intended because the discussions moved around that central axis reproducing its modes of relation. The first iteration evidenced that the discussion needed to initiate with an activity that could dislocate the centralized structure of the class and enable other forms of relationality. For that reason, these interventions could not focus on one artwork, one person, or

one idea. Instead, the diversification of the material and the form of the maps were proposed as a structure formed by several interconnected hubs rather than one; the first workshop worked around one photograph but the two later involved multiple pictures and centres of attention.

While in the first iteration the students faced the projection –the instructor's back towards the image and the students' backs towards the empty space–, in the last two iterations one could not turn one's back to the conversation because it was dispersed around the room. One could not point at the centre anymore. Is important to note that, as Davis et Al. (2007) explained,

> A pivotal issue here is the notion of 'center' – or the assumption that the center must be a person or object. A shift from a centralized structure to a decentralized one (…) is not merely a matter of shifting attentions from one thing to another. Rather, it is about decentering or displacing such attentions (…) the center [is] not the teacher, a student, or an object, but an emerging possibility (p. 200).

The map placed the possible connections between interpretations at the core of the curriculum. Shifting the structure of the workshop also changed our roles as students and teacher. I was no longer the expert because each student had worked on an area of the map and knew it well. Instead, expertise was found in collectively imagining the connections between these areas. As Juan Carlos Castro (2012) noted, while implementing visual arts curricula through social media that teaching and learning cannot be assigned to an individual entity in these decentralized structures since the complex networks of relation transcend any singular role and both teachers and students generate knowledge together as part of a broader system. The centre was not located in either role but in the understandings generated from visualizing dispersed relations in the network of interpretations.[2]

The prompts the students created to discuss their work further decentralized their work with the map. Setting rules for others to follow and following others' rules explicitly allowed them to intervene other clusters of the map and to welcome interventions to theirs. This marked a shift from individual to interconnected-work that did not replace independent work for group work but looked at the connections between individuals.

Myriam, a participant in the second workshop, mentioned that during her internships at elementary schools, she had noticed how collaboration was usually difficult for some students

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[2] These decentralized roles were explored more broadly in a workshop at the MITAV program in Bogota, Colombia. See appendix III

since they have a strong sense of ownership and they have been taught to work independently. In turn, having rules that ask them to see their thoughts in relation to others' and to play with others' work could favour collaboration instead of opposing individual and group work. As Davis et al. noted, working with enabling constraints "[is] not [a] matter of 'everyone does the same thing' or 'everyone does their own thing' but of 'everyone participates in a join project'" (2007 p. 194). As seen here, considering learning as a join project disrupts the role of the teacher as provider of knowledge and of the students as passive receivers.

5.3.2 Emergent curriculum

Emergence has been a constantly reiterated notion here. It is important to think about how the moments of emergence discussed in previous sections could open new possibilities for collaborative and creative work. What could happen, for example, by exploring the modes of relation found when a student realized that two images were connected by an *idea of change* rather than by their formal resemblances? Or what could happen by working with a text written by a student during the exercise? What possibilities could that text open for the collective? Where could a cluster of pictures merged to form a new composition lead? New images, ideas, and actions surfaced by visualizing the relations between a set of pictures. However, a more sustained exploration would be needed in order to develop this emergent work further.

The students in the three workshops were fast at identifying the possibilities these experimental conversations could open to initiate creative work but also felt a lack of general direction. Sophie, for instance, mentioned the map could be a good strategy for "brainstorming by collecting images, grouping them, and making new images." On the other hand, a student in the third workshop wrote,

> "I am confused [about] why we are connecting these images together but I really enjoy the tactile aspect of it getting me out of my seat and interacting with the actual images. It makes me wonder what I am unconsciously getting out of the experience".

She had some idea of exercise's potential but was also unclear about its pedagogical intentions. Indeed, the maps would make more sense if framed in a larger artistic or intellectual inquiry. Emergent curriculum, as discussed in the second chapter, can provide a model to structure such inquiry taking on the questions, images, and gestures that come up in the conversation and working with them. In that way, emergence would not be limited to brief interventions but could also lead to cohesive experimental work.

Emergent curriculum attends to what is encountered as teachers and students participate in a shared inquiry (Wein, 2008). Teachers plan an initial experience to introduce a question or intention and then plan possible paths to follow. In this project, the creation of spatial maps was that first experience whose intention was to explore the relations between a set of images through conversation conducing to collaborative creative work. However, the 45-minute workshops in this project, despite having generated new interpretations, were not consistent enough to make the new ideas and images visible to the group and develop them further. Thus, having a longer and more consistent space would give the time needed to collectively work with the map. A more sustained process is also important since emergence is not a magic trick and does not happen in isolation or as immediate-linear responses to constraints. On the contrary, it is a complex relational phenomenon and it involves processes of adaptation and re-structuring that occur over time (Davis et al., 2007).

Thinking about emergent curriculum as a platform for creative collaboration and experimental conversations implies that, rather than planning a conversation, teachers need to plan the initial conditions to enable relations while also planning strategies to take on what is generated. The initial conditions that launch the conversation are the constraints that enable emergence; the function of the curriculum is to develop creative work with what emerged while exploring those constraints. This form of emergent conversation could be an alternative paradigm to the discussions that are often planned and conducted by teachers in order to deliver content. An alternative paradigm does not mean a better or worst form of conversation but another possible form that expands the scope of what talking can do in art education. While the objectives of planned discussions are related to their content (they are useful to introduce a theme or discussing specific concepts), the objectives of these experimental conversations are related to the generation of creative work: they propose talking about images as a form of collective making.

5.4 Creative practices

5.4.1 Talking as making

The divergent ways of relating to images generated in this project were valuable tools to integrate *making* and *talking*, two areas of the curriculum that are often differentiated. The legacy of Discipline Based Art Education (Greer, 1993) marks a gap in how we think about

conversation and creation in art education. In DBAE, the curriculum was divided in four disciplines: aesthetics, criticism, art production, and art history. *Making* and *talking* were two distinctive areas of study. When discussing works of art, the role of the teacher was to introduce the vocabulary, methods of interpretation, and attitudes that a professional art critic would use. Since then, *talking* about works of art and *making* works of art have been understood as two different moments in a lesson and as two different aspects in the curriculum (International Baccalaureate, 2009; Ministère de l'Éducation du Loisir et du Sport, 2014). For instance, evaluating student teachers in their elementary school internships, I noticed that in all of their lessons had two moments of conversation (the introduction and conclusion) divided by a moment of 'creation' in between. The limits between these moments seemed clearly defined in every case. Discussion was used to introduce a theme, an art movement, or an artist and to close the lesson. While this is a valid structure, when it becomes pervasive it excludes other paths for processes that could reflect contemporary art practices better. The static talking-making-talking model can result in rigid limits between thought and action. On the other hand, exploring the permeability between talking, making, and thinking is an approach to artistic enquiry that could help students to interiorize interdisciplinary and expanded ways of working.

The Cartesian dichotomy between mind (thinking-talking) and body (making) that has been at the core of western thought and education does not seem productive anymore (Davis et al., 2007), not in the porous and uncontainable world of contemporary art practices. Is it effective then to separate *talking* from *making* in visual arts curricula? Or could dialogue be a way of making? Mapping a way of imaging? Conversing a way of generating? What opportunities for creation are lost when we compartmentalize these two actions? This project begins to outline an alternative structure that starts with a set of images to produce another set of images (or actions, objects, sounds) passing through conversation.

Another question to consider is: what happens with language when it is thought as a means for creation? I observed that, since these conversations were established by affective encounters with the images, the use of language also became more attentive to affective relations. As a result, the students' observations were very precise even when their language was apparently not. They described their choices with expressions such as "there was *something* about it that felt to me like it was also about dreams but it didn't feel like it belonged" which, although expressed with vague terms, described a very distinct feeling. The reason why language

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was imprecise was not because of lack of rigour but because affective relations are often hard to express with words. Regardless, there must be space for the inexpressible in creative work. Elise said in the second workshop: "(…) and then that one, when I looked at it, it felt heavy so I wanted it to be lower and so I put it here because it also felt separate and sort of like a mystery." Making these acute observations would not have been possible using only subject-specific vocabulary that favours rational analysis over other forms of understanding.

Using alternative forms of thought also provoked unusual ways of using written language in this context. After building the map, they were asked to write a 'stream of consciousness' reflection about the exercise, since writing could help them understand the work they had done better (Thompson, MJ Personal communication, October 2014). A student wrote:

> "That feeling (in dreams) where your teeth fall out, horns grow out of your head and your face slips down your body, that feeling (in dreams) where objects fly and you can't hold on to things you want. The desire to have supernatural powers… why? For safety? For domination? To explain why we feel apart from others?"

The familiar sensations of dreams, the monstrous-familiar, the feeling of solitude and fear. The language used is not the subject-specific language of art criticism. This text is another example of the work that could be taken forward in an emergent curriculum that explores writing. How could the class begin with images, move to text, and develop creative work?

5.4.2 Un-mediated encounters

Another way in which this creative dialogue enabled different ways of relating to images was by generating un-mediated encounters. A *mediated* encounter is, for example, when a teacher uses an image to introduce a topic directing students towards certain ideas and observations. The pedagogical function of the artwork is predetermined; the students' appreciation passes through that function even when the teacher encourages personal responses and opinions. Hence, the teacher acts as a filter between the artwork and the student. These mediated moments are useful because they help students to grasp abstract concepts in concrete ways and supported by visual analysis. However, it is important to allow some variability in the ways in which students relate to the material in order to open spaces for direct encounter; open spaces to practice being exposed to an image –to a moment, a sound, a text- beyond an extrinsically determined functionality.

As Paul Anderson (1993) noted when talking about criticism in art education, these un-mediated moments come from a conversation where the observers face the image, not to understand it, but to understand themselves in relation to the work. Similarly, for the artist and thinker Luis Camnitzer, responding to an artwork means joining a creative dialogue and a common research with the artist (Camnitzer, 2015). As Anderson, Camnitzer thinks about an interaction where the viewer has a direct relation to the work that is not mediated by the artist, the teacher or the institution. In that direct encounter, conversations become part of a creative process. Contrary to what one might think, this un-mediated and personal encounter does not imply isolation. While such experience is singular, it takes place in relation to other singularities. In line with that, and as Jan said after the third workshop, this exercise "felt like look[ing] for a mirror of yourself in the images"; she saw herself reflected in what others had created and interpreted in relation to the pictures.

5.5 Guidelines for art education

Design-based research aims to design curricula for a particular educational contexts while also building general knowledge about learning (The Design-Based Research Collective, 2003). Thus, this exercise cannot be linearly transferred and applied to another context even when it expands our knowledge of how conversations about images can be approached in education. Even more, it is never possible to *apply* a curriculum informed by complexity theory since it is in itself part of the learning system of the classroom and cannot be detached from it; its function is part of the structure rather than an instrument acting on it. People in every particular group would relate to each other, to the images, and to their surroundings differently in every particular moment. However, the project could give some general guidelines for creating the curricular conditions necessary to relate to images differently.

5.5.1 The role of the teacher: observer and consciousness

Throughout the workshops, my role as a teacher changed both because of the emergent nature of these conversations and the decentralized classroom structures they implied. As discussed in a previous section of this chapter, building spatial maps of relations between images dislocated the centre of the discussion and shifted my position as expert. Rather than conducting the conversation during the workshops, I created conditions to enable connections between different parts of the collective (i.e. students, images, responses) that were not previously

connected thus making possible the generation of new forms of interpretation that were not prescribed. Brent Davis (2005) notes that in complex learning systems the teacher becomes the 'consciousness of the collective' rather than the centre. The group itself is a learner who responds systemically to new information and the teacher is the consciousness that synchronizes its interactions keeping them coherent while also flexible. This consciousness guides the attention in the classroom and ensures diverse possible forms of interpretation but does not determine learning; in that way it is not centring.

Since this kind of conversation also generates an emergent form of curriculum, the analogy of the teacher as 'consciousness of the collective' also implies "that the teacher is responsible from prompting differential attention, selecting among the options for action and interpretation that arise in the collective." (Davis 2005 p. 87). The teacher is responsible for observing the possibilities that appear and deciding when and how the direction of the exercise needs to shift to develop those possibilities. Thus, during the workshops, as the students were attentive to the pictures I was attentive to how they related to the images and to each other and based my instructions on that awareness.

My role was also to enable direct interactions where the students' interpretations were as unmediated as possible. These unmediated interactions were not only important to consider talking as part of a creative process, as discussed in the last section, but also to rethink my function in the class. Like the philosopher Jaques Rancière proposed in *The Ignorant Schoolmaster* (1991), the 'explicative order' of education where the function of the teacher is to close the gap between knowledge and ignorance is disrupted when the students have a direct interaction with new material from where they are able to create new knowledge. This interaction creates an "egalitarian intellectual link between master and student" (Rancière 1991 p.13) and generates a horizontal relation between both, an intellectual partnership.

5.5.2 Attention to context – Planning and assessment

Classrooms are seen here as very distinctive networks of interconnection that are constantly adapting and changing. Attending to context is then essential both when planning the initial conditions for a conversation and when designing strategies to follow the potential paths it could open. For that reason, even if the same group met again in the same room to work with the same images, its structure as a complex system would have already changed and so would the possibilities their work could open. In a different moment, the system would exist differently, not

just because interpretation is always relative to context but also because each particular moment of emergence exists as part of the system's structure and changes its intrinsic qualities and because any new understanding is based on previous ones (Davis & Sumara, 2009; Piaget, 1974). For that reason, these conversations need to be planned and assessed in terms of process. The objectives and expectations need to address the way in which students engage with the activity and create meaning rather than evaluating pre-determined ideas and outcomes; this, since it is not possible to determine in advance what kind of connections will be made and what will they generate.

Attending to the context is also important to identify different interests that could be worth pursuing. In the second workshop, for example, the notion of home was a constant point of convergence: from connections that were labeled as "domestic intimate" to the use of the space to create a narrative around cooking, home, warmth, and shelter. In the third workshop, on the other hand, the group was especially interested in representing sections of the map through actions or movement. One of the prompts they created asked others to "physically interpret a portion of the map". How could their particular interests in each context be developed to generate more sophisticated ideas for creative work?

Figure 26 - Home - Map Detail Workshop #2

5.5.3 Enabling constraints

In order to activate thought in a complex learning system, constraints need to be equally complex; they need to enable relations within the system. Also, as Davis et al. (2007) explain, these constraints need to be expansive rather than prescriptive: they need to expand the possibilities of action rather than prescribe what must be done. In this project, both the initial

instructions to create the map of images and the prompts that the students created afterwards were enabling in that they drew connections within the system and then expanded those connections.

On the contrary, the instructions in the first workshop were not as effective because they were prescriptive instead of expansive. I asked students to identify patterns in the conversations about images that they usually have with their students and to create instructions to do the opposite. One of the groups, noticing that they centred their attention on the people represented in the artwork, asked others to talk about the picture without mentioning them. This instruction led to a couple of new ideas about the background and composition but did not generate new forms of interpretation. The instructions were prescriptive and produced limited responses; change was assumed to be a linear effect derived from a cause and not the result of many interdependent relations. Thus, the constraints to explore new forms of interpretation in conversations about images should acknowledge the inter-relationality characteristic of all learning systems; they should create links between ideas and allow multiple interpretations. Here, for example, the instructions were open enough to accept each participant's interpretation of what kind of connections could be made and what "mapping onto the space" could mean. The instructions need to be open yet structured.

5.5.4 Adaptations in schools

Thinking about how this project could be approached in formal school settings, the summative data analysis includes two cases where participants extended this exercise to their classrooms. The information in this section comes from a questionnaire that was collected several months after the iterations at Concordia University. Two of the participants in the project adapted this workshop for their high school classes using spatial maps of relations to activate conversations about images. In both cases, they decided to use the activity to introduce a new unit giving students a chance to interact with artworks directly and to understand new ideas based on their observations and previous knowledge. These adaptations also included using physical interactions with the material, making connections, and making choices in relation to the images. It was interesting as well how the diagrams made tangible the students' mental structures and how observing, discussing, and modifying the maps helped to reconfigure previous knowledge and set the base line to begin a new unit.

Elise, who participated in the first and second workshops, printed out small reproductions of paintings by The Group of Seven without identifying them and gave a set to each group of students. With her first class, she asked them to sort the pictures out in whichever order they considered and to explain the process afterwards. Seeing that most of the students decided to organize them by colors, –although she wanted them to look at other formal qualities as well, she asked the next group to sort them out imagining which paintings had been made by the same artist and to explain why. Elise commented:

> "[this] worked much better, because when they explained, they were talking about the way the images were painted, and using words like detail, cartoon, simple, etc. I think this activity was enjoyable for them, and since it was an introduction to a unit, it helped them to make links to other activities later on."

In this way, the map prepared a common ground, a common vocabulary and knowledge, from where Elise could introduce the unit and build other activities. She also changed the way in which the connections were represented and used the surface of the table and the proximity between images to visualize the connections –without needing any other materials.

In another adaptation, Clara, who participated in the third workshop, asked students to create a map of similarities between artworks; this was the introduction to a unit on Surrealism with her ten/eleven-grade combined class. She explained:

> "I used the format in the workshop of grouping together similar images. Students then attached string from their images to other students' images [when] they found something similar in them. The images were taped around the art classroom."

In this case too, the students began the new unit with a conversation based on their direct experience of the artworks. Clara noted: "Students were physically engaged in the activity and it made learning more dynamic and experiential even though the ideas that came out from the activity were cerebral." Here, the exercise was also useful to build a common ground and launch a new unit.

In these two cases, mapping similarities among artworks functioned as an introduction to new topics. The student-teachers saw in this activity an opportunity to allow personal approaches to new material from where they could work later. They also felt a need to integrate the exercise with other projects in the curriculum. For Clara, for example, "this exercise was the springboard to having students create surreal collages". For her, in order to make sense, the map needed to be

complemented by other activities later on. Hence, she asked her students to make a surrealist collage finding new pictures to create scenes. However, she wrote later: "I would have encouraged students to use those same images". She noted the continuing work from the map could have been more productive than beginning a new activity from scratch. Although in Clara's case the activity was complemented with creative work later, the map has not yet been implemented to merge talking and making in an experimental and creative process beyond its function to deliver content.
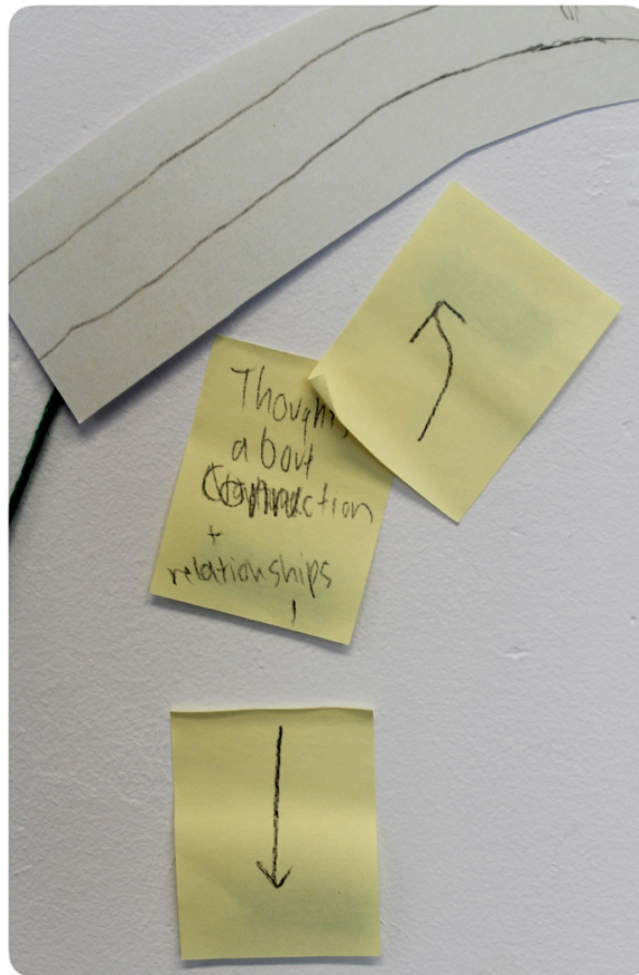

Figure 27 - Connections + Relationships - Detail map - Workshop #2

5.6 Conclusions

In this project, I wanted to experiment with what talking could mean and do in art classrooms and beyond. A central idea was finding strategies to amplify the potential of conversations to enable the co-creation of new forms of interpretation in relation to images. After analysing the data from the three workshops, I realized that such potential laid in the complex interactions that were at play when talking and that visualizing them could help students to make new kinds of connections and to understand qualities of the images they had not seen at first sight. Furthermore, creatively exploring these connections by mapping them and then shifting and expanding the links in the map could lead to the creation of new images –in the broadest sense of this word.

The capacity of these conversations to highlight the affective relations between interpretations and between images emphasized the underlying interconnectedness from where new insights were formed. This interconnectedness (interdependence) resulted in more attentive and empathic responses to others' opinions since their ideas were not just valid but were also part of a common network of interpretations. Seeing and understanding this interconnectedness also led to a collective experience where learning depended on the dynamic exchanges between students (Castro, 2012). It was neither an individual exercise where each student worked independently nor a group exercise where students had to agree on a single interpretation or outcome. This kind of collective work could potentially –but not necessarily–lead to creative collaborations.

Another important finding of this study was that in order to generate divergent forms of conversation it was necessary to transform the interactions with the material and with other students in order to decentralize the curricular structure of the class. For that reason, the exercise included physical interactions with the pictures and considered the classroom's architecture as a resource to represent ideas and generate new responses. These physical interactions shifted the centre of the curriculum from the teacher, or the students, or an image, to the web of connections between them and between multiple images.

I also found that this exercise could work well as part of an emergent curriculum. One that would start by planning the initial conditions to structure the conversation and that would unfold in different directions depending on the new images and thoughts found in the process. In this emerging structure, the curriculum would be conceived as a creative enquiry rather than as a

static plan (Wein, 2008). However, I also found that in order for it to work, such curriculum would need to be framed in a more consistent pedagogical space –since a single workshop did not provide enough time to develop emergent ideas.

Another important implication of this study was that conversations about images in visual arts curricula could be approached as part of a creative process where talking and making could be integrated. Talking could be a form of making (it led to creating new images and interpretations in the workshops) and making could be a form of talking (mapping became a way of conversing). Even more, these exercises were not only a way of making because the participants physically created a map but also because the act of mapping (and conversing) are inherently creative; mapping is not a passive representation but a performative creation of meaning (Ruitenberg, 2007). Hence, in these maps the students not just identified the relations between pictures, but they also created those relations as they worked. This could provide an alternative to curricular structures where conversation and creation are differentiated. Moving fluidly between these two –conversation and creation– would help students to understand better the interdisciplinary, permeable, and experimental practices that are characteristic of contemporary art. Additionally, it will enable them to experiment creating new forms of conversation.

5.7 Recommendations and future directions

The findings of this research will be disseminated through scholarly and independent publications, presentations, and workshops with artists and teachers. Since this is the beginning of an interdisciplinary research, the project will extend in several directions in order to develop different aspects from different perspectives. One of the paths I would like to pursue is working with teachers to create similar –or wildly different– conversation exercises and looking at how they could transform the spaces of conversation around images in education. It would also be necessary to consider how these exercises could function as a consistent curriculum in relation to academic standards in formal education or how they could be explored in alternative pedagogical spaces such as maker spaces (Halverson & Sheridan, 2014), creation laboratories, or teaching-artists residencies. I am very interested in continuing studying the implications of complexity theory in education and in working with teachers to develop strategies for building curricular structures based on attention to relationality and to emergence. I would also like to take on some

of the questions that surfaced through this experience from an artistic perspective working around the crossovers between talking and making, seeing and showing, and independent and collective learning. I will do this especially through drawing, performance, and curated events.

<div align="center">**References**</div>

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Appendix I – Certification of Ethical Acceptability

UNIVERSITÉ **Concordia** UNIVERSITY

CERTIFICATION OF ETHICAL ACCEPTABILITY
FOR RESEARCH INVOLVING HUMAN SUBJECTS

Name of Applicant: Lina Moreno

Department: Faculty of Fine Arts \ Art Education

Agency: N/A

Title of Project: Talking About Images; Possible Conversations in
                        Art Education

Certification Number: 30002771

Valid From: April 01, 2014   to: March 31, 2015

The members of the University Human Research Ethics Committee have examined the application for a grant to support the above-named project, and consider the experimental procedures, as outlined by the applicant, to be acceptable on ethical grounds for research involving human subjects.

Dr. James Pfaus, Chair, University Human Research Ethics Committee

Dear _____,

Once again, thank you for your participation in the workshop *Talking About Images* and for your contribution to this graduate research project.

Hoping you had opportunities to expand this experience, I'm sending below a simple questionnaire asking how have you adapted this workshop for your students. Feel free to skip or add any questions.

• Have you had the opportunity to explore conversations about images with your students using the strategies developed in the workshop?
• What specific strategies have you used?
• What problems have you encounter?
• What benefits have you noticed?
• Do you think this experience changed the way you or your students relate with images? If so, how?

Thanks a lot!

Lina Moreno

Appendix III – MITAV

How do images relate to other images and share a common time and space? How does the presence of an image –a strike of vision- affect other images, bodies, and times? How are these images (always connected an in movement) a form of writing?

A way of talking? Of whispering that which cannot be expressed?

In-between images and words

In-between sense and intuition

In-between me and you and us

How do we move from silence to conversation?

How do we move from individual to shared universes?

Can conversations be contained?

Can we really experiment? Aren't they experimenting with us?

Could we build a common cartography of the images in our dreams?

A map to what we haven't found yet?

Figure 28 - Detail map - Expanded Writing Workshop - MITAV

In Winter 2015, I was invited to work with a group of MFA students in the Theatre and Live Arts program (MITAV) at the Universidad Nacional de Colombia where we experimented with mapping images as a form of expanded writing. For this event, each student selected a role to perform; they could change or swap roles as many times as desired. The roles included being in charge of proposing how to move from silence to conversation, proposing how to represent connections, documenting, asking questions, etc. Besides, the map was created with images produced or collected by the students in their creative process. This not only helped disperse attention from one image to several but also from one visual universe to several.

Figure 19 - Detail map - Expanded Writing Workshop

Figure 20 - Detail map - Expanded Writing Workshop MITAV