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Urban Permaculture Educational Business

School Gardens, Permaculture and Business Design: An exploration of school gardening obstacles and solutions

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Foreword

If I wanted to select only one concept I learned in my Popular Education for Social Change classes during my studies, it is the unbelievable power of story-telling. Stories matter because they help us make sense of our present, our decisions and our outlook on life.

The last chapter of This Changes Everything by Naomi Klein (the book[1] we reviewed in my Ecology, Ethics and Education class in Education Faculty) was my favorite of all chapters exactly because of the personal story telling. I believe everything is personal to us. Behind every humanitarian, "love others" statement, there is a hidden personal reason. Those of us who understand that a war on the other side of the world impacts us on this side are the ones fighting against it. When I tell my daughter that I want the best for her, I am telling her the truth. But when you dig deeper you will realize that, seeing anything less than her having the best in life will break my heart. MY heart! At the end, it is about me really.

So here I tell you my story to explain what inspired me to start teaching our next generation how to grow food and train their teachers as well.

I was born in Iran one year before the Islamic Revolution, into a modern, open-minded, loving and caring family who cared about the whole world.

I grew up witnessing social, cultural and environmental degradations in my country, in the Middle-East and in the world, due to wars over resources, especially oil. In fact I spent eight years of my childhood in the war with our neighbouring country, Iraq. I remember countless times hiding under the staircase of our apartment building, or the bunker in our school, waiting for the bombardments to end. I remember the horrifying sounds of explosions and the bitter sweet feeling of being lucky to hear them while knowing some other child is not, after each bombardment.

During that war and many years after, I have witnessed scarcity, international sanctions, internal oppression, aggression and fierce competition. To keep this brief, I will not go into details about any of it. After immigrating to Canada in 2001, me and my husband started a "normal" life, found jobs in our fields of work (I was a software developer back then), bought into a mortgage, had two children and kept on living our lives, while greatly appreciating the opportunities we had in this beautiful country (still do). While on maternity leave for my second daughter, six years ago, I joined social media and came across the Zeitgeist trilogy and coincidentally at the same time, Permaculture. Both of which, although very different in style, resonated with me deeply and connected to each other in intriguing ways in my

[1] Naomi Klein, *This Changes Everything: Capitalism vs. The Climate* (Canada: Alfred A. Knope, 2014)

mind. Both of them together finally gave me clarity on why things are the way they are and most importantly how things could be positively different if we changed the way we do things.

Everything changed after that. I could no longer live a "normal" life. I had to start working towards creating the type of abundance the Resource Based Economic model (described in Zeitgeist: Moving Forward) and Permaculture both aspire to. Growing food, for me, was where the two intersected. One quick look at my older daughter's education (6 years old at the time) showed me a huge gap in this area. Our children are not learning how to work with nature to grow their own food and someone had to do something about that (Of course, I later found out that a few were doing wonderful things about that, but at the time I felt alone). Food connects to every other problem on this planet and those all connect to food. To me, food is such a central piece of it all. Fast forward to today, I started growing some of my own food, got my Permaculture Design certificate, started turning people's yards into food forests, founded Urban Guilds Permaculture Devolutionary[2] business, designed gardening curricula and started teaching it in schools, founded Kids' Growing City Devolutionary business, quit my job as a project leader of software development at Scotiabank, enrolled in this Master's program and essentially that is how I ended up here.

Putting my life experiences, my expertise as a Permaculture Designer and an Edible Gardening teacher and my work experience with schools and teachers, together with the desire to work towards creating food abundance (in relative terms) for our future generation has inspired me to work on this project. As mentioned in my plan of study, titled Urban Permaculture Education, I wanted to know more about the obstacles of Edible School Gardening in Greater Toronto Area, challenge Permaculture to help me provide some solutions to those obstacles, and as much as time allowed test some solutions to examine the impact.

Throughout this project, I have worked with 8 schools, building school gardens (using Permaculture techniques where possible) to perform experimental research. I also taught edible gardening via my spring and fall 10-week curricula that I offered as part of the services of Kids' Growing City (one of my devolutionary social enterprises mentioned above). I also examined teacher and student behaviours and reactions to the program as well as the gardens using observational techniques.

I interviewed experts, teachers, administrators and principals of these schools to find out more about their challenges and obstacles.

[2] Refer to Essay: thoughts on a devolutionary business model

As a response to one of those challenges and obstacles, lack of knowledge, I redesigned an in-person teacher workshop, as an assignment for one of my courses (appendix 1) and designed and built an entire online course for teachers called D.C.P. School Gardening Formula as a means to empower them to teach edible gardening to their students and build successful and sustainable school gardens. This course is available as part of services Kids' Growing City offers to teachers and schools.

This document reports and also reflects on the experience and the results of this major project. It looks at the goals of the project and examines success factors, short comings and sets future improvement plans. It also attempts to offer an answer to my research question (mentioned in my Plan of Study): How might an Urban Permaculture Educational Business operating within the Devolutionary Regenerative business model, assist urban and suburban schools in eliminating the barriers to edible school gardening?

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Thanks to my kids, Niusha and Neekta, for being, since their love keeps my eyes on the future, carries me forward and gives me a reason to be.

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And thanks to the Faculty of Environmental Studies at York University for this multi-disciplinary program, their open minds and supportive outlook.

Work Done in Schools

During this major project I worked with eight schools and one partnering daycare, running my spring and fall gardening curricula, building school gardens and training teachers. These schools included four private and four public schools in the Greater Toronto Area. While these schools had many similarities, since each had its own specifications different from others, below, I am reporting about each school separately (School names are codified to keep confidentiality):

MM Public School

This school found out about my work through the online advertisement video series[3] I released last year for my D.C.P. School Gardening Formula online course for teachers.

They enrolled one teacher in the course and hired Kids' Growing City to run the spring program with a group of 10 high school students in the Personalized Alternative Education Department.

At their Earth Day event, the students and I built a hugelkultur[4] keyhole[5] bed which we then planted in the spring program. I presented the idea of Permaculture to students and their teachers at this event. The presentation was recorded and made available on Kids' Growing City's YouTube channel[6].

At this school I also interviewed two of the teachers who worked with me in the gardening program, the results of which are included in the interviews section of this report.

RA Private School

This school found out about my work through an in-person workshop I facilitated in October 2015 in partnership with York Region Nature Collaborative. I recorded this 3-hour workshop and made the videos available on Kids' Growing City's YouTube channel[7] in 10 parts. Also I redesigned this workshop later, as part of my Popular Education for Social Change II class work (redesigned workshop is attached in the appendix).

This school hired Kids' Growing City for my spring program as well as my fall program the next school year (2016-2017) for their toddlers and grade 3 students in spring and then for their grade 4 students in fall.

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[3] http://kidsgrowingcity.ca/howtoschoolgardenobstacle1

[4] Hugelkultur garden beds are a Permaculture soil building and water conserving technique utilizing the Permaculture Principles of "Slow and Small Solutions", "Catch and Store Energy", "Produce no Waste", "Embrace Edge", "Integrate rather than Segregate".

[5] Keyhole gardens beds are a Permaculture space saving garden pattern utilizing the Permaculture Principles of "Embrace Edge", "Design from Patterns to Details" while maximizing garden bed to pathways ratio

[6] https://www.youtube.com/watch?v=xD0XRZvi7is

[7] https://www.youtube.com/watch?v=SVTlcqlN_aw

I interviewed two teachers who worked with me in the gardening program, the results of which are included in the interview section of this report.

CYM Private School

This Montessori school was the first program I offered, three years ago, as an after school program[8] that was paid for by parents. My daughter went to this school back then and the amazing staff enthusiastically embraced my original idea of running a gardening program. My programs have been running for 7 seasons in this school.

As a part of this Project, I interviewed the Head of the Academics for Casa and Elementary.

CMH Private School

This Montessori school is another branch of CYM Private School. My programs have been running in this school for 6 seasons, as afterschool programs paid for by parents.

As part of this project, I interviewed two of the main Administrators/Heads of school in this school.

CThH Private School

This Montessori school is a third branch of CYM Private School. My programs have been running in this school for 6 seasons, as afterschool programs paid by parents.

As part of this project I interviewed the Principal of this branch.

BF Public School

This school found out about my work via an announcement email I sent out to the schools in York Region District School Board, regarding Kids' Growing City's partnership with the board. This announcement email also contained information about the online advertisement video series[9] I released last year for my D.C.P. School Gardening Formula online course for teachers, which I suspect attracted their attention to Kids' Growing City even more.

This school hired Kids' Growing City for spring and fall programs for their grade 5 students in spring and grade 6 students in fall, nominated three grade 5 teachers for in-person training and enrolled them into the online course.

As part of this project I interviewed the Principal as well as the Vice Principal of this school.

[8] Kids' Growing City's after-school programs are generally paid by the parents on a per child basis (on a voluntary basis). KGC runs the program independently, usually at the end of the day, after school hours or on lunch time. There usually is a cap on the number of students to 15 and there are no teacher involvements.

[9] http://kidsgrowingcity.ca/howtoschoolgardenobstacle1

SH Public School

This school found out about my work in a presentation I gave (as a parent) to the parent council. The manager of the partnering daycare in this school who was present in the meeting approached me after and proposed to hire Kids' Growing City for a summer program that year. This partnering daycare paid for 5 raised beds and later shared them with the school. The school principal then hired Kids' Growing City for the following fall program and my programs have been running as in-school programs[10] in that school ever since, two years for grade 1 and 2 students and the third year for the kindergarteners.

No teachers have been trained in this school yet but one has expressed a strong desire to do so.

As part of this project I interviewed the Principal as well as one of the kindergarten teachers who worked with me in the program.

AG Public School

I became acquainted with an enthusiastic teacher of this school, Michael Frankfort, while participating in a nature-based event (Building Nature Connection) that he coordinated April of 2015. He then invited Kids' Growing City to the same event in 2016 (BNC II) and also to run a 1-day gardening workshop for 80 students of his school in April of 2016. Kids' Growing City has been invited to the same nature-based event in 2017 for the third time (BNC III). We are negotiating to run the spring and fall program in his school in 2017 and train him as well.

As part of this project I interviewed Michael Frankfort.

[10] Kids' Growing City's In-school programs happen during the school hour with the presence of the teacher of the class. It provides a shadowing opportunity for that teacher to learn how to run the program and if combined with the online course registration (which Kids' Growing City provides for free to these teachers) gives them a more comprehensive training that combines hands-on experience with knowledge that is acquired online.

Interviewing School Staff

I have been working with schools for 7 seasons now and have been exposed to their challenges and obstacles from the point of view of an outside vendor/program provider. In order to find out more about the obstacles and challenges of school gardening from the perspective of teachers and school staff, garden coordinators and experts, I undertook a series of interviews with many people, as detailed below. Although the main focus of these interviews was obstacles and challenges, since I designed the interview as a chat and included many open-ended questions, naturally other related topics were discussed which helped shed some light on the following as well:

- What school staff considered successful
- The students reactions and interactions with the garden
- How the parent community has responded to the programs
- Teacher's confidence after shadowing me while running the programs

I am therefore including brief reflections on these topics on top of analysing the main focus of these interviews; challenges and obstacles.

Who was interviewed

Three of the interviewees are people I consider experts in this field. These people have already been involved in building gardens in schools or communities and have many years of experience doing this:

1. Rita Filichetti is a high school art teacher in the TDSB who is a certified Permaculture Designer and has built Permaculture gardens in her school.
2. Mahnaz Ghalib, is one of the founders of a non-profit community organization called Dallington Pollinators. Mahnaz has built a community garden beside the Dallington public school. The space is shared with the school and Mahnaz herself as well as teachers in the school run occasional gardening workshops there.
3. The third person is the owner of a non-for-profit charity that performs outstanding work in the field of school gardens in Toronto. Her name is not mentioned for confidentiality reasons.

On top of the three experts above, the following participated in the interviews:

4. Six teachers
5. Four non-principal school administrators
6. Four school principals and vice principals

Obstacles to School Gardening

Throughout these interviews, many challenges and obstacles were brought up by experts, teachers and principals. People with many years of experience and tons of expertise in this field, teachers with almost no experience and principals with a completely different set of obligations than teachers surprisingly have a lot in common although all have their own perspective about the challenges. The following is a summary of those similarities of opinion, what I kept hearing again and again from very different people.

Lack of Knowledge

Almost all interviewees, other than the three experts, emphasised the important fact that they did not know how to grow food or teach it to their students, even those who have built school gardens and are really trying hard to incorporate it into their school culture. And the experts, although they know how to grow food themselves, they indicated that the other teachers they interact with on a day to day basis, either don't know how to grow food or have just recently started to experiment with the idea. Rita Filichetti said: "A lot of teachers had no idea what those vegetable [that we grew] were! They would come and ask me. One teacher said, 'I have 2 grandchildren that I want to teach this skill to. But my granddaughter asked me where seeds come from the other day, and I did not know the answer. Can you tell me how seeds are made?' At first I thought she was kidding but the whole time I was telling her where seeds come from she looked at me with a straight face. So she was really not kidding! … I had this comic I was sharing with [my high school] kids; there are two little tulips in a room in front of a TV, on the TV, there is a bee in a flower, next picture there is a big tulip knocking on the door saying: 'hey what are you guys doing in there?', in the third picture they shot the TV off and yelled 'Nothing!!!!'. So I am laughing and the kids are like, 'why is that funny?' so I explained it to them. Then I told this story to a teacher about the fact that these kids did not get the joke and the teacher was like 'to tell you the truth I don't get it either!'" There is this overwhelmingly apparent notion between all interviewees that we have been deskilled when it comes to growing food for many generations and not only our children are increasingly disconnected from the origins of our food, we can't seem to be capable of helping the situation much, simply because we are disconnected too.

Research also shows "Lack of knowledge" as the second most important barrier to using a school garden[11] in Ontario.

[11] Sunday Harrison-Vickars, "*Kids Growing: Implementing School-Community Gardens in Ontario"* Academia.edu (2009): 54, accessed October 2016 https://www.academia.edu/8156633/Kids_Growing_Implementing_School-Community_Gardens_in_Ontario

Perceptions vs. realities

Many interviewees who were not experts and were interviewed before building a school garden were thinking maintaining a school garden would be too difficult, too time-consuming, would require too much hard work from the care-takers or teachers, would create problems such as attracting animals, rodents and vandalism, and their conclusion was that it would not work at the end.

One of the experts (Rita Filichetti) confirmed similar experience before she built her garden: "Care takers told me I was crazy. People told me that it would be a waste of time and money. And these are people that never garden. So I don't know why they thought they could tell me this. Initiating it seemed like a big task. At first, people did not know how much I knew about growing a garden! Authority was built as the garden started to be successful…. People were like: "They are watering cardboard?![12]" I had everyone's curiosity while we were building the [Permaculture] garden. And when things started growing, people started to keep an eye on it and ask questions about the techniques… They were worried that we need to put up a fence. I resisted! Some junior kids threw some tomatoes around once. But that was all the 'vandalism' our garden got. People were worried about people walking their dogs in the garden. Care taker told us that the local animals will come and eat everything. They did not! There was a lot of harvesting when we were not around. But that is why we wanted the garden. This is a community that needed help!"

Making Curriculum Connections with the Garden

Since Edible Gardening is not part of the mandated curriculum in Ontario, for teachers to be able to spend time in the garden, they have to be able to connect it with what they are mandated to cover in their curriculum. According to many interviewees, this is an issue for those teachers who are not willing to go the extra mile of making those connections and it is particularly an issue in the secondary school since the connections are not as obvious as they are in primary schools.

An expert (anonymous) said: "In elementary curriculum there are lots of garden links in all subjects. If you are a teacher who wants to check off your curriculum boxes using a garden you can do it. It is not that difficult. It gets harder on the secondary unless you are on the Food Share model, running a school farm. At the secondary level that kids are more ready to think more deeply about food system issues [and] the curriculum is very minimally related and non- controversial. They are trying to make no enemies."

[12] Refers to a permaculture technique called sheet mulching in which the gardeners cover grass with wet cardboard to supress weeds and disintegrate grass for soil improvement and then cover cardboard with soil or mulch.

A teacher who built a school garden in MM High School this spring and has been trying hard to encourage other departments such as math and science to use the garden said: "Curriculum connections in high school is more difficult. Science should see biological and biodiversity connections. But they don't see how to do it. If there is a lesson plan that is tide to your program then they might think about it. If not, they don't come outside. They won't make the lesson plan. I did presentations about the garden that we built, but no one has come up to me and said, I can see this, how can we make it happen? There are 80 teachers in this school and no one came to me! … Gardening does not readily fall into the curriculum. It should! But it doesn't! This is modern learning… It should be a no brainer! How can the science department not see the connection?!"

An elementary school principal in Toronto District School Board connects this issue with the issue of lack of time (discussed more below). Since Edible Gardening is not in the Ontario curriculum and does not have time specifically allocated to it by the Board, she believes the only way a teacher would be willing to spend any time on it is when she or he can cover the mandated curriculum topics while using the garden. Otherwise, there is simply no time for it.

Summer Maintenance

Another barrier that comes to mind for every interviewee who had not experienced a successful school garden before the interview was summer maintenance. Some schools the interviewees worked in were closed during summer and since summer is considered the "growing season" they were concerned about watering, weeding, harvesting and vandalism. Those schools that run summer programs and had to utilize a staff person during summer time to water their garden noted it as hard work and preferred that this chore not exist.

Research also shows this to be one of the top barriers to using a school garden[13] in Ontario.

Amongst the interviewees, the only school that had no issues with watering during summer was BF Public School. The way they managed this task was through incorporating it into their summer program, performed by the students and not as a chore that was done by the staff. Essentially watering was no staff's "responsibility" at this school. It was naturally and automatically done by the students as part of the summer programming.

Looking beyond these interviews into my own experience when presenting Kids' Growing City's programs to parent councils, almost all the time one parent asks about how the garden would be

[13] [13] Sunday Harrison-Vickars, "*Kids Growing: Implementing School-Community Gardens in Ontario"* Academia.edu (2009): 54, accessed October 2016 https://www.academia.edu/8156633/Kids_Growing_Implementing_School-Community_Gardens_in_Ontario

maintained during summer time. Almost every principal asks this as one of the very first questions. This issue seems to be at the top of people's concerns and is often quickly used as a means to stop the project right off the bat.

A quick search on the internet shows an apparent presence of this concern between school gardeners[14].

Lack of Time and Monetary Resources

This issue came up with many interviewees, in many different contexts and from different points of view.

Michael Frankfort, a teacher in the York Region District School board looks at this issue from the perspective of teacher training which relates directly to monetary resources. He believes that if we want elementary teachers to learn how to teach their students this skill, we need to be able to get them released for those hours of training; meaning that we should have the funds to hire supply teachers to cover those hours and that is the most expensive aspect of such endeavor in his opinion. What his experience of years of interacting with teachers tells him is that most teachers, unless highly passionate and motivated, would not spend their personal time on professional developments and therefore the most efficient way to train them is to get them released from duty.

A principal of an elementary school in the Toronto District School Board has a very similar opinion. She believes that to get teachers trained would mean releasing them from duty which requires funds. As mentioned before in the curriculum connections section above, she also believes that no teacher would spend time in a garden unless there is an apparent curriculum connection. Because teachers already feel they don't have enough time to fulfill their academic curriculum requirements, to make more time for something else seems impossible to them and also unfair to expect. She said "Teachers say 'do you want me to go out and water or do you want me to do math?'"

Policies

Comparing obstacles mentioned by private school gardeners with those mentioned by public school gardeners shows an apparent difference in the sense that educators in public schools view their school board policies and procedures as a huge barrier to their success whereas educators in private schools don't feel such limitations.

[14] http://healthyeatingatschool.ca/take-action/school-food-gardenschallenges-barriers-and-how-to-overcome-them

"A major obstacle has been the school board. They told us our project was too large and too ambitious. They rewrote the rules for all school gardens based on our project. Restricted number of garden plots under cultivation for all schools going forward based on a fix square footage per school. The size does not reflect the number of students in the school. We wanted elementary schools that are close by to adopt plots and also classrooms in the school to adopt plots. Some of that I am hoping happens but it cannot be anywhere close to our original plans. You cannot have a school to walk 40 minutes to just have 1 plot. No one in the board said 'how can we help?' They only said 'you cannot do this… not that… won't let you do this or that. See you later!' They kept putting up road blocks. Once it is started you really have to make it work. Because they drive up to your garden the same day it is dry and they take pictures and they send them to you and say… 'See what happened here? You failed!'" said a high school teacher of the York Region District School Board who built a food garden in his school last spring.

Another teacher in the same board said the following in response to the question, what is the number one obstacle you see in the way of school gardens? "The school board! Lots of regulations about what can and cannot be built…. We have been at a crossroads with them…. They are not familiar with what we are capable of. They are not willing to consider individual school's capabilities in their decisions. If they look at our previous projects they would know that we can do it. They have valid concerns and I understand where they come from. But they throw up a lot of road blocks… There is a lack of vision and a lack of trust. There is no working collectively and doing it together… lots of roadblocks!"

An admin working with the TDSB said: "It takes years to get things done with the board… getting a hose will take forever!" A TDSB school principal said the same thing about installing a hose: "It won't happen. You know that, right?! The board is cutting budgets and this does not have priority over falling bricks and breaking roofs."

When it comes to curriculum policies many administrators, principals and teachers in private and public schools, strongly believed that inclusion of edible gardening in the curriculum as an important life skill would be necessary to open the road to possibilities. They think current curriculum does not allow enough room for teaching this skill especially at high school levels. And even at elementary level, since teachers' and students' performance is not measured based on these life skills they are not considered important by the teachers neither by parents and therefore not considered as important by principals. "EQAO is not measuring gardening" one principal simply said.

"If it is built into the ministry curriculum we would get the support from the board. It would have its own 6 weeks of curriculum unit for example" said a TDSB principal.

Community Support

Many interviewees mentioned the importance of community support for a garden project. Some wished for parents and people in the surrounding community to be involved, but most were concerned with teacher engagement.

A BF Public School's principal said the following to the question, 'what is the number one obstacle you see in the way of school gardens?': "Commitment from one teacher or parent; someone who would take it on. If only there was a passionate person, that one person who loves it to death, who sticks around!"

A teacher from a high school talked most of the interview about his challenges with attracting other departments' teachers to the garden. He did not seem to be able to do that even after his team built an impressive food garden in the school. He sounded really disappointed that other teachers could not make the curriculum connections to bring the students outside in the garden. He was also disappointed about the fact that, despite his constant announcement of his departments' willingness to share the garden with the whole school, other departments such as family studies thought they had to build their own garden to use the food in their cooking programs!

An expert said: "The research shows that a garden coordinator is a pretty necessary individual for sustainability. A garden coordinator is the link between the school and the community, they can help bring community gardeners in to help with maintenance, they can manage the crop selection to have a consistent relationship with teachers as they change."

Teacher engagement is not only an issue in public schools. Some private schools cannot get their teachers engaged either. An administrator said: "The number one obstacle is that the teachers are not interested." A Principal said: "it would work well if staff were interested… it cannot be a one person job… Need to be able to depend on your staff."

Some private schools have a tough time engaging the parent community with the gardening program. An administrator said: "Also we need to educate parents to know the value of it. There are other countries that moved away from teaching agriculture, and now it is too late. We need to teach [the parents] that agriculture is the future and not industrialization, to get their children reconnected to the earth and get them re-grounded."

Even public school principals seem to be looking at what parents want for their children, on top of what is mandated by the curriculum. A public school principal said: "gardening is not assessed by our tests and parents don't know the value either." In another part of the interview she emphasized: "resources are not given for a gardening program… Parents have to value it… they value more computers… How do you change that concept? Kids have to like it so that parents start liking it."

Research also shows the important role of community partnership in the success of school gardens; "this study suggests that while most school gardens are undertaken without a formalized community partner, gaps in school garden implementation including teacher training, curriculum resources, time for maintenance and summer care could be partly addressed by having such a partner or partners.[15]"

Our dream school garden

One of the questions in the interview was: "If there were no obstacles in the way of your dream school garden, how would you see it? What would it look like, feel like, sound like? Who is or isn't using it? How is it or is it not used? Describe your dream school garden." The following is some quotes in response to this question.

"A place where children would go to see things growing, see the cycle of agriculture from seed to food. It is a beautiful garden. Children have responsibility and appreciate agriculture. It feels empowering. Kids see it as a reward to their work. The food would be used in school lunches. It could be used to raise money selling it to parents, teach kids how to utilize money. It is a good way of preparing them for life."

"Ideally we would have a little more parent involvement. Parents would come in and make food with the harvest, connecting it to a kitchen program… Healthy snacks… We could take and wash them and feed them to kids… It is a place for the kids to see the cycle of seeds to food… It is very important to us that the kids eat the food they grow in the garden. We will expand the garden next year to have more food."

"My dream garden helps with biodiversity and supports pollinators. It is designed with hugelkulturs and curved beds. It looks very beautiful. It is a place to meet one-self… It accentuates mindfulness. A mandala garden would be nice. My dream garden brings the community together. Mental health issues and wellbeing issues that tie into achievement are addressed in this garden. So

[15] Sunday Harrison-Vickars, "*Kids Growing: Implementing School-Community Gardens in Ontario"* Academia.edu (2009): 112, accessed October 2016 https://www.academia.edu/8156633/Kids_Growing_Implementing_School-Community_Gardens_in_Ontario

many of the lack of opportunities could be fulfilled with a garden. It provides answer to the question; how do you give students and teachers the space in which they can connect with themselves in an environment that you can do positive things, or just sit down and relax and be comfortable in that space."

"People from the community coming in … enjoying the space and using the space… students and different departments have a stake in the garden… students spend time next to and in the garden… good for the mind and good for the soul… attracts them to its beauty… community working communally collectively with each other… people are more respectful because they have a part in it…"

Community Interaction with the Gardens and Garden Programs

This part of the report is extracted from the interviews done with those interviewees who had experienced a successful school garden. Most of these gardens were built by students in Kids' Growing City's programs and one by Rita Filichetti's students as part of her garden project. This part also reports on my observations in the garden and what I heard from teachers, parents and school staff while running the programs.

The teachers in RA Private school said: "It was great to see children starting to plant at home and apply what they learned in the program. The connection with plants and animals was great in the program. They see ants and they say 'we cannot step on them… the garden needs these other creatures'… Sharing their knowledge with their parents was amazing… Parents told us the kids tell them: 'oh no you need to do it this way. Ms. Leila told us to do it like that.' The hands-on part of it was huge for them. They thoroughly enjoyed putting their hands in the soil. They have started a project on a series of how-to guides to help them mentor kids in the next year's program." At this school the learning did not stop with the Kids' Growing City's program. Teachers incorporated the learning from the program into discussions and projects afterwards. They specifically emphasized that "all the curriculum expectations were met in the program." Teachers said that they were learning right along the children: "I learned a lot about the strategies and techniques… It was great to have a mentor through this whole process. We would not have been able to do all this if we did not have the program. Before we had gardens but we did not plant them with the children… Growing an edible garden with herbs it is all new to this school."

BF Public School VP said: “When the lady came from the Eco schools, she was very impressed with what the kids had done. And the kids ran the whole thing and gave her a garden tour. They were so proud and knowledgeable about the garden that she was very impressed.”

A parent in CYM Private School told me that her daughter hates Fridays because of the food and she only comes to school on Fridays just because of the gardening class. “As soon as I remind her that she has gardening today, she jumps out of bed.” Another parent told me with teary eyes how her 6-year old son holds on to all the seeds of the apples he eats saying that there is life in there and we should not throw it away. Teachers ask me from time to time if it is ok if they harvest some of the herbs for their lunch, to which I answer yes, of course!

When we built a Hugelkultur keyhole bed in MM High School, as part of the Earth Day community event, not only the students had a blast building it, but they also felt proud about doing something that was attracting a lot of parents’ and teachers’ curiosity. And when that garden performed very well, everyone was even more impressed.

Rita filichetti said: “We have a teacher whose job is to deal with kids that have some special issues or social issues. They go to her when they are upset and angry. That teacher told me once that with one of these kids she ‘ended up in the garden and it was weird that the garden calmed the kid down right away and attracted his attention to the tomatoes and that was a way to completely take away the conversation about something else rather than the issue.’ This teacher decided to use the garden more often as a means to calm these kids down.” She also talked proudly about the high school students who were helping in the garden: “Kids who know what it means to struggle are the ones who came to help. They would stay until 7 pm some days voluntarily to finish the work. And this attitude impressed many teachers as well as the principal… People in the community or from the school started to come by as soon as the garden started to look nice. The crossing guard who told me later that she used to grow up in a farm, said that she was dying to get her hands in the soil again. She started volunteering in the garden and brought her kids too. Kids from the close by junior school came and started helping. The parents never helped and were nervous about their kids getting dirty. High school kids worked with them as a team and parents liked that aspect of it! Their parents were shocked that the carrots were coming out of the ground. Parents were happy to see the kids willing to try the vegetables. There was a sense of ownership. Once a parent pulled out her camera and took pictures to send to her mom to show her that her kids are connecting with nature in the city. Apparently the grandma was worried about the fact that the kids don’t connect with nature in the urban area. We kept meeting new people from the community. A church group approached us for their projects. Students

who had graduated years ago stopped by. Community happened just by us standing around in the garden. People started telling stories about the place, about the legend of the ghost that used to walk around the premises at night! We made so many nice connections."

While sitting in the interview with a teacher at MM High School, we were facing a window that opened into the garden. Although the teachers in this school were not very happy with other departments and teachers reaction to the garden and expected more engagement from them, we witnessed many staff and students coming by the garden (they could not see us sitting inside), staying around and interacting with the plants. At some point the teacher said: "I am impressed how much people naturally gravitated towards this garden. Before this garden, this part of the yard was always empty. If this wasn't here, these people would not come here."

Reflection on In-Person Teacher Training

In two of the schools that work with Kids' Growing City and run its programs, RA Private School and BF Public School, I have teachers who are committed to learning how to teach the programs. These schools hope to run the programs independently and not need to hire Kids' Growing City in the upcoming years. This also aligns with Kids' Growing City's devolutionary goals[16].

When I interviewed teachers in RA Private School right before summer, after the spring gardening program was complete for grade 3 students, the shadowing teacher (grade 3 teacher) said: "We have documented a lot for our gardening program. We have seen how it is done. I feel very much confident to do it next spring. Next step would be to learn how to do the fall program. But we know how to start a garden in spring. We needed you to show us. Now we know how to do it! We plan to expand the garden next year hoping to get more classes involved."

Near the end of fall program (it ran for the same group of students now in grade 4), the new shadowing teacher (grade 4 teacher) told me they would like to have me back next spring since the grade 3 teacher is no longer as confident and is having doubts she can do it all on her own. I told her that I would not mind coming back another year but this time maybe not to run the program but to mentor and coach their grade 3 teacher to empower her to run it on her own. I also truthfully assured her that I am sure they will soon get on their own feet. On the last session of the fall program, the teachers informed me that despite their doubts the school principal decided it was time for them to do it on their own now that they are trained. This meant that they would not need my services in spring of

[16] Refer to Essay: thoughts on a devolutionary business model

next year which made me utterly happy; this shows I am in the right direction to fulfill Kids' Growing City's Devolutionary[17] goals. I offered free consultation via email and phone to the teachers during spring in case they needed my help.

As for BF Public School, they paired the same teacher with me for their spring and fall program, running it for grade 5 students in spring and for grade 6 students (same student group) in fall. This teacher seems very much committed and is quite capable to run the show on her own next spring.

I consider this in-person shadowing very effective and will offer it to all new schools I consulted with for next year's program. Although the performance of my trainees is still to be evaluated next spring, and I expect to have to retune the training, based on these results, I feel proud of how it was done so far and consider it a success.

[17] Refer to Essay: thoughts on a devolutionary business model

Permaculture in Schools

Permaculture has a lot to offer when it comes to changing people's perception about school gardening, both by introducing a different view point and its practical results. Its Principles and Ethics open the path to inclusivity, tolerance for mistakes, and regenerativity in conceptual terms. And practically, it creates less work, requires less fighting against nature and its elements, produces more yield using less resources, in comparison to what I call conventional school gardening described below. Permaculture gardens are also aesthetically more pleasing in my personal opinion which I will not discuss here because this is a subjective topic dependant on personal taste.

What I refer to as "conventional school gardening" is what can be found in guides such as the one developed by LSU AgCenter Pub., called "Steps to Growing a Successful School Garden.[18]" Although such guides do contain some good information, as can be quickly noticed from the table of contents, conventional school gardeners believe that in order to have a successful garden, schools need to "find a group of volunteers", suggesting that school gardens are a lot of work, "Find Funding", suggesting that school gardens are expensive, "Take a Soil Sample" suggesting the need for professional tests to know exactly what nutrients are missing, "Remove All Grass and Weeds from the site" perpetuating the fight against nature as well as suggesting the need for lots of labour, "Amend the Soil According to the Soil Lab Recommendations", suggesting that growing food requires a lot of scientific knowledge and money needs to be spent for complicated soil tests and expert reports. Also, it perpetuates the soil-amending paradigm which can be skipped by applying the Permaculture principle of Use Small and Slow Solutions to soil building (also recommended by soil biology researcher and microbiologist Dr. Elaine Ingham[19]). "Install Irrigation" suggests the need for expensive equipment.

The truth is, using Permaculture in my school gardens, I have been able to successfully build lush and productive food gardens with no volunteers, no funding, not removing any grass nor many weeds, not amending the soil with the usual amendments bought from the stores, not professionally testing the soil to find out about the nutrients and not installing any expensive irrigation. To be clear, I am not against testing the soil or drip irrigation systems. What I am trying to say here is that these are not necessary for success and my experience proves it in many schools and I believe I owe this success to Permaculture.

[18] http://www.lsuagcenter.com/NR/rdonlyres/5345334A-2839-4A66-9343-A68F6A528C06/73491/pub3145schoolgardensHIGHRES1.pdf
[19] Elaine Ingham, *The Soil Biology Primer* (1999)

Permaculture Principles in action

I use Permaculture principles in my programs and school gardens and the following briefly describes some examples of the results I see:

Observe and Interact Principle

When we build a school garden from scratch, I always guide the students to observe and respect what is already there before we build the garden. For example when we built a butterfly garden in BF Public School, we observed the existing vegetation and decided which one of the "weeds" we wanted to keep and which ones we wanted to sheet mulch. Never in my programs do we attack the garden to do any blast type of work. We always observe and interact with the garden to design our work (weeding for example) in a way that works with nature to contribute to our longer term benefit.

This shows the kids a different way of looking at the world, creates awareness of their surroundings and respect for what is already there, awakened design of what they create today and appreciation for what comes after.

Catch and Store Energy Principle

Whenever possible, in my schools, we build soil by capturing the energy of existing vegetation such as grass, via techniques like sheet mulching. I design the gardens to catch the wind's energy to increase edge effect, capture rain in barrels, create heat traps by arranging taller vegetation on the north side of the garden and use slopes to direct water to our benefit. We also use floating row covers in fall to capture the heat and light for our vegetables.

Depending on the age of the students, sometimes I explain the reasons behind these techniques hoping they learn that by working with the natural elements and designing the garden properly they can easily multiply their success while spending very little energy. For example, conventionally to turn grass areas into garden beds, people tear up the turf and import soil. What my students learn is to appreciate the energy and nutrients that already exist in the grass and utilize it to improve the soil by sheet mulching on top of the grass. This technique not only captures and stores the existing energy, it eliminates the need to use energy to tear the grass up (which is a very difficult task especially for kids) as well as eliminating waste (torn up turf) or a need to pay for labour.

Obtain a Yield Principle

Having an eye on the school schedule, I always select short maturing vegetables such as radish and leaf lettuce to ensure the kids obtain a yield in spring before they leave for summer (see Fig. 1 and 2). Although we do replant with longer maturing vegetables and fruit such as tomato and cucumbers for

the kids to come back to in fall, I arrange things in a way that they get one good harvest in the spring program to taste the successful experience of harvesting the fruit of their labour without having to wait too long.

Figure 1: Swiss Chard, Marigold, Kale, Radish, produced on BF P.S. Hugelkultur Permaculture garden, spring of 2016

Figure 2: Radish and Spinach, produced on CYM Private School's raised bed gardens, spring of 2016

In my fall programs, while we gradually harvest fruit, vegetables and seed that we come back to after summer (see Fig. 3), we also plant new short maturing cold crops such as spinach and arugula to have a second season harvest before freeze.

Figures 3: Milkweed and Sunflower Seeds, Fruits, Vegetables, edible flowers produced at BF P.S. and RA Private School's Permaculture gardens, fall of 2016

We also cover our long maturing cold crops such as kale with floating row cover to have some moderate harvest even during winter (see Fig. 4).

Figure 4: BF P.S. Floating Row Cover on Keyhole Permaculture garden, fall of 2016

When it comes to yield in schools, Permaculture offers more than just food. Discussing its Ethics and Principles makes way for educational yields. Students are introduced to not just a different way of gardening but a different way of living and looking at the world. The seeds of change that can be planted

in students' minds are plenty which sets the stage for unprecedented amounts of positive change in the world in the future and this is another type of yield that although because of its qualitative and longer-term result nature is difficult to measure and prove, is certainly notable (see Fig. 5).

Figure 5: Activities showing students and staff involvement in KGC's gardening programs, fall of 2016

Apply Self-regulation & Accept Feedback Principle

This principle is something my students learn as they see me accepting "failures", talking about the lessons learned and tweaking the plan with a positive attitude throughout the year. Some "failures" can be corrected and some others should just be accepted and learned from.

This is what I am very adamant to teach since what I mostly see in our culture is the opposite. The mainstream formal education, as well as our society in general, teaches the next generation to constantly compete to be number one and that, mistakes should not happen and failure is not acceptable. This is such a dominant attitude that you can see it even in adults inside our education system. An example of that is this quote from the interviews that I repeat here: "Once [the garden] is started you really have to make it work. Because they [(people from the school board)] drive up to your garden the same day it is dry and they take pictures and they send them to you and say… 'See what happened here? You failed!'"

Use & Value Renewable Resources & Services Principle

As an example of renewable resources I try to include, whenever possible, perennial plants in the garden and I always have one session, usually in spring program, about annuals vs. perennials (and depending on the age group biennials and self-seeders).

Seed saving is part of my fall program and one of the lessons that can be learned from seed saving is the renewing capability of seeds of course.

Where possible and when a school is ready, I set up a compost bin for them to start renewing their food scrap resources into soil for next seasons' plant food.

Produce No Waste Principle

Vermicomposting and composting are topics I teach in my programs and whenever possible we set up these systems in my schools.

I also teach about the 5 Rs (Redesign, Reduce, Reuse, Repair and Recycle) usually in the last session of my spring program when I teach about the Earth and how we can "save" it.

Depending on the age I speak to the fact that in nature there is no waste and waste is a human problem that shows we have not been very smart. And that it is smart to build our systems in a way that they don't produce any waste. We also sometimes talk about systems thinking and how all things are related to each other.

Design from Patterns to Details Principle

I observe the traffic flow patterns as well as the natural element patterns of the school yard and use those patterns to design for the school garden.

Integrate Rather than Segregate Principle

I refuse to put up a fence for my school gardens because I want the kids and the surrounding community to be able to interact with the garden and make it part of their day-to-day life.

Also my school gardens are planted in a multicultural fashion and usually in a checker board pattern. We intercrop for companion planting and never have rows and rows of the same plant in large areas.

Use Small & Slow Solutions Principle

Vermicomposting and composting are examples of tools I use to teach this principle to my students.

We also almost never build a garden bigger than 30 square feet. I always start with a small garden and encourage my schools to expand a little bit each year. I believe that if we want to build a big garden and do it fast, our “failures” will be bigger and they will come at us faster. And depending on the age, I teach this to my students as well.

One of the schools I worked with, MM High School, already had a huge garden designed and had submitted the design to YRDSB for approval. I believe many of the approval issues and roadblocks they had to face were because of the size of the project. If they had built a smaller garden the first year and built their case for a bigger garden based on their success in the first year, they would have faced much less resistance and would have received much more acceptance.

Use & Value Diversity Principle

Bio diversity is one of the topics I cover in my programs. Sometimes we build butterfly gardens but almost always we have a session in the program dedicated to the concept of biodiversity and we discuss how important it is to invite beneficial animals and insects into our garden. They can help us to maintain our garden and how building an ecosystem with many species of plants and animals inside the garden and inside the soil and this is the ultimate goal of gardening, above and beyond just food production.

Use Edges & Value Marginal Principle

The gardens I design are almost never in straight rows, unless we have severe limitations in terms of space. I increase edge in the garden shapes by using design patterns such as spiral, circles, waves and curves.

Practical Permaculture Results

Before this project, my focus was more on building and enhancing Edible Gardening curricula and most of the schools that I was working with were those with very limited space for gardening and their circumstance only allowed for container gardening in a limited amount of space. For this project, I started building school gardens in bigger spaces that provided the opportunity for teaching more students at the same time. Therefore I personally have only had the chance to test Permaculture's practical results for one and a half seasons (last spring and this fall). I am also drawing from Rita Filichetti's experience with her Permaculture school garden which is one season older than my Permaculture gardens. Although this is not sufficient time or data to properly draw empirical conclusions, below I would like to share practical results of Permaculture Techniques, based on my experience and observations and when relevant connect them with the obstacles mentioned in above sections, as solutions:

Hugelkultur Garden Beds

Hugelkultur is a type of Permaculture garden bed that builds soil and conserves water. It demonstrates many Permaculture principles including Catch and Store Energy, Use Small and Slow Solutions, Use Edge, Value Diversity, etc.

To build a Hugelkultur bed in my school gardens, we covered the grass with wet cardboard, placed wood and twigs in the center and topped it up with compost.

These pictures are taken from BF Public School's Hugelkultur bed (see Fig. 6). This bed was built entirely by students of grade 5 in this school. The school paid $0 for material since they sourced everything locally and from the city. All the plants were started by the students from seed indoors and no transplants were purchased.

Figure 6: Steps and results of building BF P.S. Hugelkultur Keyhole Permaculture garden, spring of 2016

Although the water-conserving and soil-building properties of Hugelkultur beds are usually more apparent in the second year, this bed performed very well during last summer requiring less watering than non-hugelkultur beds beside it. It is important to note that last summer was the driest season so

far on record[20] in Ontario which made me very nervous and worried for my school gardens. Compared to my raised bed school gardens and regular school gardens, the Hugelkultur gardens withstood the drought significantly better. These gardens also fed the plants sufficiently without the need for manual fertilization during summer. This means Hugelkulturs would be a good tool to bring summer maintenance, namely watering chore, down in schools.

Rita Filichetti's Hugelkultur school garden (Picture below) was built in spring of 2015, one year before BF Public School's garden. Summer of 2015, compared to 2016 in which we had drought, was a normal Toronto summer in terms of the amount of rain that we received. Rita got preoccupied with tending to a close family member who came down with a serious illness and therefore had to suddenly leave without any opportunity to arrange for summer watering of the garden. She also got no chance during the summer to set foot in the school due to her family situation. Although the water tap was completely shot during that summer and therefore, no one from the community could water the garden either, her Hugelkultur garden not only survived without any watering but even flourished in such a way that completely stunned her when she went back to school in September (see Fig. 7).

Figure 7: Rita Filichetti's Hugelkultur Permaculture garden, fall of 2015

No nutrition deficiency was observed in any of these gardens. In the Hugelkultur bed we built with high school students at MM Public School (pictures below), no nutrition deficiency was observed while the sub-irrigated planters the school purchased and placed beside this bed, although using the

[20] https://www.theweathernetwork.com/news/articles/drought-conditions-worsening-throughout-eastern-ontario/69534

same compost, showed signs of severe nutrition deficiency in tomato plants (Blossom-end Rot). It is worthy of notice that the Permaculture bed cost this school only the compost which was also used in the sub-irrigated planters but the planters cost approximately $100 each, at a discounted price, which summed to thousands of dollars. This is a very good example of Permaculture techniques being able to reduce the monetary resource required for building school gardens (see Fig. 8).

Figure 8: Steps and results of building MM H.S. Hugelkultur Keyhole Permaculture garden, spring of 2016

Sheet Mulch

As observed in pictures above, applying the Permaculture Principle, Integrate Rather than Segregate, the Hugelkultur technique is integrated with Sheet Mulch technique. This technique eliminates weeding at least in the first season which obviously worked in my school gardens. This technique also applies Produce no Waste, Use Small and Slow Solutions, Catch and Store Energy principles of Permaculture which practically translates to less weeding, not having to tear the grass up (no need for hard work) and not having to deal with the torn up turf. As a matter of fact, in MM High School, we were building the sheet-mulch Hugelkultur bed at the same time as another team building the sub-irrigated planters platform. The other team were tearing up the grass and we were only covering them. This was a very tangible experience for the students to see the difference. They constantly complained about the hard work they were enduring tearing up the grass. Not only that, we incorporated some of the torn up grass from their project into our Hugelkultur bed project since they had a hard time figuring out how to get rid of the torn up turf.

D.C.P. School Gardening Formula Online Course

Kids' Growing City is offering an online course for teachers, which I built during my studies in my Master's program. This is my first online course and as a first experience requires a lot of improvements described below. To get access to the course material, go to http://yescourse.com and click on "members" button on the right top corner, and then sign into the site by inputting username and password, provided to you beforehand.

Why online teacher training

My interaction with teachers and school staff in general has exposed me to some of their day to day struggles and was also confirmed in the interviews by many of the teachers and principals (detailed in above sections). It seems that time and scheduling complications as well as funding for teacher release are three of the main obstacles when it comes to in-person teacher training for edible gardening. Commuting takes time, and in-person workshops and courses require commitment to fixed schedules. Since teachers are hesitant to spend their free time on professional development, this fixed time is preferably scheduled within school hours and that requires funds to release teachers from duty. Also teachers generally do not have basic knowledge about gardening (again confirmed by all of the interviewees, detailed in the above section). Providing comprehensive training on a topic such as edible gardening in schools, to which teachers are being exposed for the first time, requires laying the foundations first and helping them to gradually progress towards becoming skilled. Most basics need to be explained in the context of the school environment and this all requires patience and time. If the more than 13 hours of video that I included in the online training was to be offered in-person, it would have required commitment to many days of instruction with many logistical challenges in the area of time, scheduling and funding. And this would make it difficult to pull off.

From the perspective of the trainer, in-person trainings fall under the category of "trading hours for results". Although it is not impossible to deliver training to thousands of people in large conference room settings at the same time, it is logistically very difficult to pull off efficiently for 15-hour training. A more doable in-person training that is reasonable for a business like Kids' Growing City to manage, would have a lot less trainees present. In such training settings, the trainer is trading her or his time for training less people than an on-line course could potentially have. An online course could potentially have no restrictions on the number of people it can serve (no caps for registration). The time spent by the trainer to prepare the material, although more than required to run it in-person one time is significantly less than the time it would require to run it for the same number of people who can be trained online. The initial investment of time by the trainer is big but the potential increased outreach is significant.

Online training has one additional significant positive attribute and that is the availability of material to the trainees for a potentially infinite amount of time. This creates a situation in which the trainees can go back, watch the videos or read the material later based on their ever changing knowledge level and needs for years to come. In an in-person workshop, note taking usually is done in relation to the trainee's knowledge lever and what the trainee deems important at the time of training. This means that a lot of in-depth discussions that could help the school gardener in future years might be missed and the related learning opportunity lost.

From the perspective of the trainer, updating and upgrading the material as well as fixing possible mistakes online, can be easily done and trainees can be easily informed via email. If the trainer makes mistakes in in-person training and discovers them later on, there is no possible way to go back in time and fix those mistakes.

Course Style

As my first attempt on building an online course, I have a lot of reflections on what worked with the current style and what didn't. Below I will explain how I went about choosing the style and building different pieces, how I applied what I learned during my Master's program, what I could not apply and why and also what I am planning to improve upon in future iterations of the course.

Design

The Popular Education for Social Change course changed significantly my perspective about education, training and workshop design. Previously viewing education as an expert giving lectures to a crowd of "ignorant" people who need to be indoctrinated on a topic, I turned into someone who looks at education from the perspective of participatory collective knowledge creation. Comparing the workshop I facilitated in October of 2015 (recorded video series available on YouTube[21]) with the same workshop that I redesigned (Appendix1) can to some extend demonstrate this change of perspective.

The creation of this online course started before my exposure to participatory collective knowledge creation. So originally I started with what I "knew" teachers needed to learn based on my own experience in designing school gardens and curricula and planning for running my programs.

What I then saw missing was a lack of structure around school gardens. Edible Gardening is not a separately designated topic in Ontario curricula and schools are not mandated to teach it as a separate topic. Teachers are not trained on it in their teacher training and they have not been taught how to grow food when they were students decades ago. This has been missing for multiple generations from the

[21] https://www.youtube.com/watch?v=SVTlcqlN_aw

formal education people received and urbanization, which created a physical separation between us and the farms, has perpetuated the situation. Teachers who try to build school gardens usually are quickly discouraged, facing many obstacles and challenges (some of which are discussed in sections above).

My programs on the other hand provided a straight forward approach that fits very well with the current school structures in terms of logistics and scheduling. And this is what I am teaching in the D.C.P. School Gardening Formula course. The course material is tightly connected to how to run programs in local schools. The three main pillars of my success are based on my attention to 1) School garden permaculture-influenced Design 2) Focusing on delivery of comprehensive Curricula and 3) Planning (D.C.P.). This is in my opinion the "formula" to successful and sustainable school gardens. Since I believe these three deserve equal attention, I designed 3 modules for each of these topics making the entire course to add up to 9 modules.

For each module I determined a series of topics that I deemed necessary to cover, and then divided those into a series of lessons. The order of lessons was determined based on the progressive deepening of knowledge, starting with the basic essentials and progressing towards more in-depth optional concepts that might only apply to some situations.

I then made slides for each lesson and recorded my voice over those slides. This was done on the fly, without a script and editing was what eventually brought it all together by cutting out repetitions and moving sections around to create a better flow.

As reviewers of the course could quickly point out, the structure and style of this online course is currently mostly derived from the "expert" paradigm, me being the "expert" giving speeches on how I think teachers should teach edible gardening and build school gardens.

There is a benefit to building these type of courses; that most people are still living in this paradigm, most online courses and even in-person workshops are of the expert type and therefore trainees are used to it and since it is inside their comfort zone, there are no objections to it. People are used to sitting in rows and listening to "experts". Also this approach helps people to quickly identify with and accept the "expert's" authority and therefore are more open to hearing that persons ideas and trying their suggestions in applicable situations. In this case, people are more inclined to start school gardens with the straight forward step-by-step process that the "expert" explained because they have quickly trusted the process to be the best way of doing it solely based on the fact that they heard it from an "expert".

The problem with the expert approach is that "learning begins with the expert[22]" while ignoring the collective current knowledge and experience of the learners. "Teachers have the information consumers need to succeed[23]" which perpetuates consumerism in our education system. "Success means conforming to the role model, which means becoming like the experts; in other words, supporting the status quo.[24]" Since the main goal of my entire work is to change the status quo from a state where edible gardening education is non-existent to one where every school teaches this skill and has a successful and sustainable school garden, I cannot afford to enforce a learning method that ignores existing knowledge and relies only on my own personal experience and expertise.

But while I was learning about the new educational paradigm of collective knowledge creation, I tried to incorporate some of it into the existing course structure and style while trying to maintain a balance between the two poles.

In my experience, participatory design proved to be trickier in the online world than in in-person workshops for the following reasons:

- People are not physically present in the same space and time, collectively. In an in-person workshop, people can interact with each other in games that could be designed into the schedule. In an online course of this style, in which participants can learn on their own time and at their own pace, designing activities in which individuals interact directly with one-another is extremely tricky and would require help of instructional designers as well as software developers who can create experiences usually not readily included in the out-of-the-box features of an online course building software. At this time, I do not have the resources to engage instructional designers, but will build it into my future plans.
- Being physically present and seeing the presence of other participants in an in-person workshop creates encouragement to participate in activities as well as in providing feedback. I have seen this type of interaction in online courses' comment sections and closed groups of social media only in courses with 300+ participants. If 10% of participants are initially willing to interact, comment and provide feedback, in a course with 300 people, this means 30 people will almost immediately start conversing. These 30 people could originally create the momentum and enthusiasm that is required to

[22] Rick Arnold, Bev Burke, Carl James, D'Arcy Martin, Barb Thomas, *Educating for Change,* (Ontario: Between the Lines 2002), 37
[23] Arnold, *Education for Change,* 37
[24] Arnold, *Education for Change,* 37

bring in more people into the discussions. But when an online course only has 15 people on it (the current number of participants in my course), creating this type of social proof to break the ice and bring the shy 90% is very difficult and requires access to expertise of instructional designers that have experience with online engagement improvement methods.

- Online courses of this style (with life-time access to material) are easier sells because of the apparent convenience they carry – no rush to go through the course and learn right now if your life does not allow you to – but they have less participation exactly because of this convenience. If people are not given a deadline and know they have forever to start learning, they will most likely give preference to most urgent matters in their lives and put the online course on the back burner and even though they might have paid a lot of money for the course, might never get around participating in learning.

To give some structure to this analysis I categorize participation into two:

1. Participation in activities that raise involvement and facilitate interactive learning (Interactive Learning Participation)
2. Participation in the creation of the course material itself (Course Creation Participation)

Interactive Learning Participation

It was planned from the beginning (a plan which due to lack of time has not been implemented in the course yet) to include quizzes at the end of every module to give participants the chance to find out about how much they have learned from the lectures in the course.

At the very end of the course I have also planned to include a final assignment in which they would apply what they have learned in Design, Curriculum and Planning modules of the course in a real life situation. This assignment would be submitted to me for review and a certificate would be issued for those who successfully complete this assignment. This part of the course was not done due to technical incapability of the online course building software that I used. Although they have quizzing and examination features that tie to issuance of the certificate, apparently they do not have a feature which allows the course creator to mark students as successful based on an offline assignment. In order to make this part of the course happen I have to change provider.

My future plans for this course include using the assistance of instructional designers to increase participation in learning as well as more interaction between participants, as mentioned before.

Course Creation Participation

I placed a survey at the beginning of the course to find out a little bit about the knowledge level of participants.

I also designed surveys at the end of each module, to gather feedback about that module to find out areas of strength and areas that require improvement. These surveys were not part of the course at the beginning. I attempted to gather feedback on individual modules as part of this major project but unfortunately the timing aligned with when teachers are busy with report card and evaluation writing and therefore I was not able to gather enough feedback to include in this report. That is when I decided to include these surveys at the end of each module.

The plan is to incorporate the feedback gathered over time from these surveys into the course so that it serves the audience better.

Course Material

In this section I will attempt to report on my thoughts and reasoning for the specific sections and the material I included in the course.

The purpose of this online course was to share my "formula" for Edible Gardening in schools. This formula is derived from my reflection on the success in the school gardens I have built. There is an unfortunate overall perception about school gardens that they don't work. Part of this comes from a myth that was briefly discussed in previous sections (perceived challenges) but another part of it comes from the fact that contrary to an overall desire among teachers and school staff to build school gardens, not many are successful. The ones that are successful are dependent on huge budgets to pay for labour or have to rely on volunteer work. Some of these successful school gardens such as the ones built by FoodShare[25] are very admirable and have an ample amount of positive social impact[26]. But implementing such school gardens in every school requires lots of funding as well as staffing arrangements which in my humble opinion makes them beyond the reach of most schools or partnering organizations, including FoodShare itself. My school gardens are successful without a huge budget, without relying on volunteer work and without labour from any teachers, school staff or school caretaking department. And in this online course I am sharing the formula to do exactly that; build successful and sustainable school gardens with not much.

[25] http://foodshare.net/
[26] http://foodshare.net/program/schoolgrown/

This formula is also based on my opinion of the purpose of school gardens, which I announce and strongly emphasize in the course. I am fully aware of the difference of opinion among school staff, parents and community partners about school garden purpose. Some look at school gardens as a means to grow food for the community. Some look at it as a means to create sales and marketing opportunities as well as youth employment, some look at it only as a means to invite nature into the lives of urban students, and so on and so forth. I feel strongly that the main purpose of a school garden is to teach students how to grow food. And I believe this simply because these gardens are set up in schools and they can be quite logically used as an educational tool to fill the gap we desperately have in our curriculum; that is teaching such life skills. Looking at the purpose of school gardens from any other angle, makes us miss out on this very important educational opportunity. Also having other purposes for school gardens contributes to some obstacles discussed in previous sections. For example, looking at school gardens as a means to grow food for the community could completely put the burden of labour on the shoulders of the community or a garden coordinator, if the monetary means to hire such person exists, or on the shoulders of community volunteers, people who due to their busy lives are not reliable for such a task. If the center of school gardens are students and the purpose of it is to teach them how to grow food, naturally they will be involved with all the chores as part of their education which eliminates the need for community labour for most of the season.

I have called this formula, D.C.P. because I believe any school gardener needs to pay attention to Design (D), Curriculum (C) and Planning (P) in order to build successful and sustainable school gardens.

Design: My school designs incorporate a lot of Permaculture techniques and that is why I include Permaculture related lessons in the design modules of this course.

Curriculum: I strongly believe that school gardens need to be built, planted, taken care of and harvested by the students and the students alone (under supervision of teachers of course). A school garden belongs to the students and has to be first used as a learning tool to teach them how to grow food and only if this purpose was fulfilled, then a school garden can be shared with the community to fulfill other needs (as long as those do not interfere with the main purpose; teaching kids how to grow food). In order to make sure that the garden is built, planted, taken care of and harvested by the students and they are taught how to grow food in the process, we need a well-designed curriculum. A lot of school gardens are built on the basis of sporadic one-time events. This approach lacks ownership within students and the parent community which in turn guarantees neglect. Also students do not learn much about growing food during these events. The curricula I encourage the students of this online

course to write are for a certain learning level (learning levels are described in the course lessons) and not to mix those learning levels together. These curricula especially at the elementary level are meant to teach students in their regular classrooms as part of the normal scheduling of the school. They are not meant to be taught at club levels (eco-club for example), which could potentially include students from all grades.

Planning: Execution of such well-designed curricula and implementation of such well-thought out Permaculture designs requires planning which is covered in the Planning modules of the online course.

Future of D.C.P. School Gardening Online Course

My future plans for next iterations of this course includes an overhaul of its entire design in order to use the Spiral Model instead of the Expert Model, the concepts of "Naming the Moment"[27] as well as "Seizing the Moment"[28] that I came across in my Popular Education for Social Change courses in my studies. As such redesign completely overhauled my in-person workshop (refer to Appendix 1) I expect it to do the same to my online course.

In these future iterations, I will include more feedback, tests and quizzes as well as assignments to encourage more participation in the course.

I will also add hands on activity lessons in forms of videos. I will add more of my school garden pictures to act as supporting material to Permaculture techniques.

An idea brought up by one of the teachers in the interviews (and also confirmed by my marketing coaches outside this program) was to create smaller courses more focused on practical topics and offer those courses to teachers first. Then those courses could act as pre-requisites of a more advanced course such as D.C.P. This would help get teachers make small commitments and move towards a more comprehensive course after they are encouraged and their confidence built by small successes. He believed that an online course with so many hours of video and so much material would not be easily accepted because of the huge time commitment that it requires. I will examine this idea more and might pursue it as a strategy.

[27] Deborah Barndt, *Naming the Moment: Political Analysis for Action* (Toronto: Jesuit Centre for Social Faith and Justice 1989)
[28] http://www.catalystcentre.ca/consulting/seize-the-moment/

Essay: thoughts on a devolutionary business model

Introduction

This write-up introduces an idea for a business model different than a regular for-profit business that has the main goal of staying in business forever. I am practically currently applying this model to the two social enterprises- Kids' Growing City as well as Urban Guilds Permaculture- that I have founded.

This idea is by no means completely thought through. Tons of research needs to happen before I can announce it as something that could work. It is a very high level hypothesis. It is something that is rooted in my beliefs about what is wrong with this world and how capitalism perpetuates it. It is more of a hunch than anything else, a raw idea that feels right, something that yet needs to be developed, tested, examined and evaluated.

This idea is obsessively intriguing to me. As soon as it sparked, it never left me. No experience, news, or other ideas, conflicted with it and no one I talked to has been able to argue me out of it. It has been many years since the idea came to me and all my experiences, all the things I've heard, discussed with people, and learned in my Master's degree program have reinforced its validity in my mind. The more I think about it, the more I am convinced that this is something worth paying attention to. Is it a valid idea? I honestly don't know yet.

Poverty means not having access to the necessities of life. It means scarcity of resources. Wars are all about competing over scarce resources or establishing and maintaining power in those regions "blessed" with those resources. And most crimes are a direct or indirect result of poverty. If we all had access to everything we physically and emotionally needed in past generations, it only seems logical to think that we would not need to compete in order to gain access to those necessities of life. You might argue against this concept by reminding us about those greedy people who no matter how much they have, always want more, are never satisfied and would commit horrifying crimes in order to maximize their power over others. While the existence of such people in our societies is not up for debate I would argue that greed is an artifact of growing up in a competitive society. When resources have always been scarce and we were always taught to compete in order to survive, some of us don't know any other way of life. In our societies, for many generations, we have in many ways incentivised competition.

As Schumacher suggests in his book[29], Small is Beautiful: Economics as if People Mattered, "If human vices such as greed and envy are systematically cultivated, the inevitable result is nothing less

[29] E. F. Schumacher, *Small Is Beautiful: Economics as if People Mattered*. Reprinted by arrangement. (New York: Perennial Library Harper & Row, Publishers inc., 1973), 31

than a collapse of intelligence." We have done exactly that in the 40 years since he wrote this book. We systematically and proudly raised competitive kids! One glance at a toy store such as Toys R Us, tells us the whole story. Last time I checked, there was no cooperative board game in that store. None! Not one! All board games were competitive. We make our kids play musical chairs for heaven's sake, in their birthday parties, a game where we intentionally and systematically create scarcity and make kids nervously compete over access to chairs. As a child I hated playing that game. One of us always would end up so frustrated that would either kick and push others out of the way aggressively or burst into tears as a result of being kicked or pushed out of the way. What a fun game to make kids play! It is not like we don't have enough chairs in the room for all of the kids! What are we teaching them? That it is a dog-eat-dog world out there and if they don't aggressively compete they will be perceived as losers. No doubt of course, in such a society we will have people who are obsessed with winning, competing and accumulating wealth.

Schumacher[30] talks about the economics of Permanence and he says: "No one is really working for peace unless he is working primarily for the restoration of wisdom." He then asserts that "[wisdom] can be found only inside oneself. To be able to find it, one has first to liberate oneself from such masters as greed and envy.[31]" And then he suggests that to "disarm greed and envy" we have to "resist temptations of letting our luxuries become needs… stop applauding the type of economic 'progress' which palpably lacks the basis of permanence…work for non-violence: as conservationists, ecologists… protectors of wildlife…[32]" Although I agree with this, his suggested solution, although useful, seems incomplete to me.

As much as I agree that we should work from within, I don't think we can succeed if the systemic outside pressures that work against us are too much to bear. Knowing that we did not follow his sound advice over the past 40 years begs the question, why did we not? Of course there have always been honorable people who have sacrificed their lives to work for such things. As a matter of fact, while I am writing this, there are people in North Dakota camping as water protectors to shut down the black snake (Dakota Access Pipeline) construction. And without a doubt, without such work we would have been in a much worse situation than we are today. But looking at the state of the world today, I think generally we did not follow this advice! The reason might be partly because maybe not everyone agreed with it. But I want to suggest that maybe it was too much to expect of us to do it even if we agreed. The perpetuation of greed and envy is systemic! When people are inside a system and their entire livelihood

[30] Schumacher, *Small Is Beautiful: Economics as if People Mattered*, 32
[31] Schumacher, *Small Is Beautiful: Economics as if People Mattered, 38*
[32] Schumacher, *Small Is Beautiful: Economics as if People Mattered, 39*

depends on that system, expecting them to solve problems by working on their internal greed on an individual level, it is in my opinion too much to ask for change. Success depends on large scale implementation of individual actions. And to expect the majority to make such sacrifice, is definitely too much to expect!

I believe this type of change needs to be supported at the systems level. As Naomi Klein[33] suggested in her book, This Changes Everything, the answer lies in systemic change! We have a system that forcefully and inherently perpetuates greed, which in turn creates competition, war and inhibition of "restoration of wisdom" and wisdom is what we need for manifestation of peace and permanence. But it is not only that greed inhibits permanence. It is also that inhibition of permanence creates more greed. We need to start innovating in order to break this vicious systemic cycle. Let's imagine a society in which for many previous generations we all had access to all our physical and emotional needs, would we still have greedy people? Although we can never prove this at this point in time, I believe we can agree that "no" could be placed in the list of logical possible answer to this question. We always looked at greed as a given; an inevitable part of human nature that has to be tamed with spiritual work. Maybe we need to also look at it as a result of systemic violence and poverty.

Assuming we are convinced that scarcity is "the problem" or at least we agree that it is a huge problem, working towards elimination of it would be a positive step forward towards a less problematic society, less greed, less envy, less competition and more restoration of wisdom, and then the question becomes: what is the solution to this "problem" of scarcity?

To play the games of opposites, like what my daughter would play when she was 4 years old, the word abundance comes to mind as the opposite of scarcity. What if we had abundant access to all our physical and emotional needs; food, water, shelter, health care, clothes, love, entertainment, etc. In such a world, there would be no poverty, war or even most forms of crime (such as stealing or all forms of financial fraud). Employment, money, weapons, armies, jail or even police would be automatically eradicated. No borders and no separation. Utopia would be created on Earth! Then why on Earth have we not reached this state of abundance? Is it because resources are in actuality physically scarce? I believe it is because we THINK resources are scarce. We are imagining the scarcity or better to say we take it for granted; we accept it as a given. Our economic theory is based on the concept of scarcity and the fact that absolute abundance does not exist. We are so accustomed to scarcity that we simply cannot imagine a world without it. But that does not mean such a world cannot exist. Don't get me wrong! I am not delusional that poverty doesn't exist. Resources are most certainly practically not

[33] Naomi Klein, *This Changes Everything: Capitalism vs. The Climate* (Canada: Alfred A. Knope, 2014)

available to the poor or they would not be in poverty. But in many cases, in the current world, the required resources to bring everyone out of poverty, physically exist or could exist, in abundance. Instead, they are artificially made scarce in the name of monetary gain and ownership.

When Schumacher wrote Small is Beautiful, 40 years ago, there were serious doubts about whether we had enough resources on the planet to sustain us without damaging our habitat. Today we know we have enough! He brings up the example of fuel consumption. Today we know we don't need to consume as much fossil fuels as he suggests in his example. And we know we don't need dangerous energy production facilities such as nuclear[34]. We have "enough" resources that if coupled with different systemic practices of sharing[35] (libraries for example), could quite possibly lift us all out of poverty.

As a simple example that I imagine here, the electricity I use to light up my computer could be generated at a central place using environmentally, socially and monetarily expensive material, processes and procedures (such as fossil fuels). Obviously in order to have access to this "dirty" type of electricity, not only we are destroying our own habitat, but I have to make money (submit to some sort of employment or commerce) in order to pay for it. And if I don't have that money, I would be considered poor. But if I was generating the electricity using the power of the sun that is shining on my roof or the wind that is blowing through my yard, my monetary strength would have nothing to do with my ability to light up my computer and therefore I would not be poor. You could argue that in this case, I still had to make money to pay for the computer or the technology that generates my electricity. True! But the point is that the same concept can be expanded even more; If I could have access to a computer conveniently without having to exclusively own it (a practice highly perpetuated by consumerism in our capitalistic societies), for example through a library of computers, and be connected to a clean energy source that is shared by the community, then maybe I did not need to make money to pay for it. Would the original computers in the imaginary library or the solar panels that are shared by the community need to be paid for? Thinking inside the box of our monetary system, yes, originally they would. But a library or sharing system makes it much more accessible to all and if everything was made available in this manner, then we would transition closer and closer to such accessibility level that would lift us all out of poverty. And if those computers were not built with the principles of obsolescence in order to

[34] The article in this link (http://www.alternet.org/environment/are-you-ready-100-percent-renewable-energy) which references, *A Plan to Power 100 Percent of the Planet with Renewables*, written by Mark Z. Jacobson, a professor of civil and environmental engineering at Standford University, in 2009, suggests that "Wind, water and solar technologies can provide 100 percent of the world's energy, eliminating all fossil fuels" and also defines a plan to reach this state. It is important to note that since 2009 renewable technology has significantly advanced which suggests this might be doable even more easily today.

[35] The Toronto Tool Library is the first large scale project of The Institute for a Resource-Based Economy (IRBE), a registered Canadian non-profit organization based in Toronto providing the opportunity for sharing tools similar to a book library: http://torontotoollibrary.com/

maximize profit (another concept widely practiced by manufacturers in our capitalistic system) for their makers, they would be built to last and would be compatible with repair and upgrades.

What I am trying to demonstrate by this example is that there is a way to lift us all out of poverty. The resources are there and the physical and social tools to reach a state close to relative abundance are also there. What it takes is to let our minds open to possibilities and solutions, to be curious and to reset our goals towards reaching such state.

Let's explore another example with food. If my food was easily produced in my local community in a self-regenerative food forest, I would not need to make money to pay for it. This write-up is not about promoting or defending any particular solution. I am not saying that food forests can feed human population all over the world. I do accept that it might be possible though! And leave it to empirical research to find out if it is. These are just examples of ideas from a social entrepreneur. As we all know, these ideas should be evaluated to find out if they are good opportunities or not. But when it comes to food, even before considering any out of the box innovative idea, we should note that in this world we are already producing enough for all of us[36]. And we also know that it is our food systems to blame for the fact that lots of us are hungry. The physical existence of "enough" food is not up for debate any more.

Looking at any of the basic human needs, if we look closely, with open minds and outside the box, we could quite possibly end up with the same conclusion that we have, or using proper practices could easily have "enough" for all.

The reality today is poverty, war and crime all over the planet. Creating systemic change has to be done in many different areas and no one solution would suffice to save the world! I want to be very clear that what I am suggesting below can only be viewed as one small step forward towards creating a new system that could help us break the cycle of greed and restore wisdom into our ways of life which in turn would help to implement the economics of permanence.

As a social entrepreneur, I am all about innovative ideas that use the tools of this system (the master's tools), to create a new system in which the problems of the current system that inhibit real progress towards creating permanence do not exist.

The specific problem the following innovation, if it can be called that, tackles is this: The main business model currently practiced in the majority of businesses is based on the desire to stay in

[36] http://www.huffingtonpost.com/eric-holt-gimenez/world-hunger_b_1463429.html

business forever. I have more on why this is a problem below. But let's see if this statement is even accurate.

Is there any business in the world that is ok with going out of business after a while? Does any businessman or woman every say, "I am going to serve society with so and so solution for only 5, 10, 20 years and then I am completely ok with going out of business?" There are business men and women who know about the realities of business in this world, such as the capitalist forces of "creative destruction". But the idea of "creative destruction" is viewed as a negative concept to those who are making money from what is being destroyed. For example, smart phones killed the market for many things. From regular cell phones to MP3 players, regular cameras, wrist watches, calculators, voice recorders, etc. We might agree that smart phones are a better solution. Because instead of using all those devices we will be using only one which means our material throughput would be significantly reduced. Of course this is debatable, in details, when a thorough analysis of the material life cycle of smart phones is done. But for the sake of this example we assume it would reduce our throughput. Again, I am not promoting any specific idea or product in this write up. These are hypothetical examples. The main point is that, although the manufacturers of those outdated devices would start using smart phones simply because it is a smart solution, but they still don't like the fact that they are going out of business as a result of it. If they could, they would have done everything in their power to stop that from happening. Wanting to stay in business forever hinders progress. It is not the only thing that hinders progress but it sure contributes to it.

There are also a few entrepreneurs who design something that would later be swallowed up (sold at a very good price) and destroyed by big companies. But that does not mean these people start their work with the intention to eventually go out of business. This usually happens by luck and not by design.

Do not-for-profits that work on a social mission start with the intention to cease operations after a certain period of time? Maybe they hope so for the sake of the cause. But they don't intentionally design their organizational model around ceasing to exist. And simply because they don't intend it, since it is generally considered a failure, these organizations will sooner or later fall into the habit of doing the same thing.

The only place I read about intentional demise of a business by design was in the book, Regenerative Enterprise: Optimizing for Multi-Capital Abundance[37]. In this book, the authors suggest

[37] Ethan Roland and Gregory Landua, *Regenerative Enterprise: Optimizing for Multi-Capital Abundance,* (Boston: The Permissions Company, 2013), 52

demise as one of the principles of what they describe as regenerative enterprise. They argue that "in ecosystems, no organism lives forever. The niche that the organism occupied will be filled by another organism, or change its function as the overall system evolves. Design the demise of your enterprise from the beginning so that its dissolution redistributes capital for the benefit of the whole ecology." Roland and Landua imagine enterprises as part of a what they call "regenerative ecology" and suggest that such enterprise "will not 'sustain' forever, but will instead design its own eventual demise in a way that feeds the other enterprises in the system. The system itself continues to grow and evolve, but businesses should gracefully live and die – developing multiple forms of capital throughout their life and in their death.[38]" The idea discussed in this book is the only thing I could find that shows similarities to the idea discussed here. But it still remains an abstract concept to be seen if it would be implemented in real world.

So what is wrong with wanting to stay in business forever you might ask?

To return to the computer analogy, what is happening today is that our electricity usually comes from dirty sources because the fossil fuels industry needs to grow and make profit in order to stay in business forever or want to be in control of any other type of energy that makes the dirty type obsolete before they allow the transition to happen (still stuck in the paradigm of scarcity and greed). Manufacturers of computers and software companies practice planned and intrinsic obsolescence to maximize profit. They also do not want us to share because that would mean less of us buying from them which means they cannot grow and maximize profit which eventually means that they could go out of business at some point. They need us to think that everyone of us needs to buy our own computer. And they need us to think that computers should eventually break and be outdated. We are imagining these scarcities because they have been systematically ingrained in our social behaviours by advertisers of regular for-profit businesses with the fear of going out of business due to the society becoming so self-reliant that we would not need to buy from them.

When it comes to food, today, most of us in urban and suburban areas of the world rely heavily on big supermarkets to access food resources. To buy the food, we have to make money to pay for it. This food is grown, prepared, packaged, advertised and distributed by the food industry while destroying our habitat in the process. The food industry is a combination of many big, medium and small food companies with a regular for profit business model and the main goal of staying in business forever. And if that means lying and cheating and deceiving consumers into buying their so called food, in order to survive as a business, then they will do it.

[38] Roland, *Regenerative Entreprise,* 40

Let's talk healthcare. The main goal of a privately owned hospital which operates as a regular for-profit business is to keep the lights on, make money for its shareholders and continue to stay in business and of course in the process, provide healthcare to patients. Similarly a pharmaceutical company needs to stay in business forever. As a regular for-profit business this hospital or the pharmaceutical business, needs customers and the customers are obviously sick people. In simple terms these companies do not want a society in which no one is sick. You might argue that we will never have such a society in which everyone is always healthy. And this is another form of thinking, imagining or accepting scarcity (of health in this case) as a given, as something that we will always be struggling with simply because we always struggled with it in the past. This type of predicting the future based on the past limits our imagination of the future and keeps us unprepared for breakthrough possibilities. Maybe we can never have such an abundance of health in our societies. But this type of business approach in a hospital or a pharmaceutical company is not only problematic in absolute terms. It is also problematic in relation to scientific breakthroughs in preventing or curing single diseases. For example if someone comes up with a prevention strategy or even a cure for cancer that is outside the patent industry and cannot be exploited through our monetary system, would this hospital or pharmaceutical start using it instead of the multimillion dollar chemotherapy drugs? No they would not! Why? Because it could potentially create relative abundance of health, in a multimillion dollar area of medicine that makes that kind of money off sick people. They would not allow it to happen. They would lobby against the research and shut it down if they could. But shouldn't a hospital's or a pharmaceutical company's mission be something along the lines of positively contributing to the health of society? But they cannot uphold such mission if they need to stay in business forever as a regular business.

People who think regular for-profit businesses can solve the world's problems if only they applied social and environmental responsibility strategies (known as CSR) in their businesses, are taking a limited view of the extent of the problem. Making sure your workers are treated better and your supply chain does not violate human rights, sourcing your material from clean sources and eliminating child labour from your manufacturing, will help move things in the right direction. But it will not eradicate the main problems because as long as the main purpose of a business is staying in business forever, not only can it not solve the world's problems, but it also will be automatically perpetuating or creating those problems. This is evident in comments made by Chouinard, the founder of Patagonia, one of the most important environmentally responsible for-profit businesses. He worried that Patagonia could "never be completely socially responsible,"[39] and this anxiety motivated him to push for

[39] Forest Reinhardt and Ramon Casadesus-Masanell, eds., *Patagonia* (Harward Business School Publishing: 9-711-020, October 19, 2010) cited in Course Kit for BSUS 6500 BUSINESS STRATEGIES FOR SUSTAINABILITY at Schulich School of Business York University directed by Associate Professor Mike Valente, 67

implementation of a new initiative in which Patagonia would tell its customers to buy less and think twice before they purchased a garment. Such an initiative goes against the basic principles of running a regular for-profit business. And in the face of challenges that implementing such an initiative naturally created for Patagonia, Chouinard said: "I'm kind of like a Samurai. They say if you want to be a Samurai, you can't be afraid of dying, and as soon as you flinch, you get your head cut off. I'm not afraid of losing this business."[40] And he also says: "Sustainability is a bullshit word unless you live in a cave. We're never going to get down to zero environmental impact – if you think we're making clothing and saving the planet, you're wrong. There are no perfect solutions."[41]

Although all companies should be solving some sort of problem, there are problems and then there are problems! Someone not being able to feel happy because they don't own the most luxurious car on the planet is a problem for that person. And starvation is also a problem of a completely different scale. What was described above even applies to those companies whose main operation is clearly all about solving a "real" problem. For example in the area of waste management, a recycling company is effectively contributing to reducing garbage in the landfills. But since it has to stay in business, it would not do anything to reduce the amount of recyclable material that is used by society. So if someone comes up with a sensible solution that completely eliminates all recyclable materials and turn all the packaging into a biodegradable material, those recycling companies would go out of business. The fact that the company's entire operations rely on the existence of a problem, is problematic; simply because, if someone else came up with an innovative solution to eliminate that problem, said company would fail.

If you're business is about fixing a problem, shouldn't you design it to disappear once you are successful? Or shouldn't you be happy that someone else came up with another solution to solve the problem? Shouldn't you embrace that solution? But if you are planning to stay in the business of solving that problem forever, wouldn't that automatically prevent you from solving that problem?

What about not-for-profit businesses you might ask? Can those provide solutions to the world's problems? Yes, they can provide intermediate solutions but they cannot completely solve them if their goal is to stay in business solving them. I have a lot of respect for founders of charities and non-profit organizations as well as anyone who works for and with them. Most of these people are heart-centered, concerned people who argue that for-profit businesses are destroying humanity at many levels. I agree! But I don't think the reason is greed or the regulatory and structural attributes of for-profit businesses. It is not because for-profits are not regulated like non-profits are. It is not because they are not restricted.

[40] ibid
[41] Ibid, 76

It is because instead of trying to solve problems, they are trying to stay in business. Non-profits are considered a failure if they cease operations too! Non-profits too, if not intentionally design their own disappearance while they solve the problem they are tackling would start to do everything they can to stay in operation. So if they achieve 100% of their mission and completely eliminate the problem they were tasked to eradicate, or if another business, group of businesses, person or group of people eradicated that problem, they will become irrelevant; they should close shop and let all employees go home. And that is considered a grand failure. Why is that problematic? Because even non-profits are not able to completely solve problems unless they are ok with eliminating the problems at such levels that would eventually make their services not required and therefore make them completely go out of business.

We will not be able to solve the world's problems if we want to stay in the business of solving them.

This is a contradiction, a systemic flaw that we need to realize and address first, before we can even imagine going after tackling world-wide problems such as poverty, war and crime. We should come to terms with the reality that solving those problems will take us out of the business of solving them. Or we will keep perpetuating them, causing more of them, competing with each other instead of collaborating to create or adapt the best ideas no matter whose ideas they are, while fooling ourselves into thinking that we are working to solve those problems. Not only will we not solve our problems but we will BE the problems since we will perpetuate the vicious circle of greed and scarcity. We will continue to inhibit wisdom and therefore stay in the paradigm of scarcity and greed.

The Proposed Business Model

What if instead of trying to stay in business of solving the world's problems, we would solve them and move on? What if we would create companies not with the mission to stay in business forever, but with the mission to go out of business within a clearly defined period of time (target dates) due to, and this is important, solving the problems they were tasked to solve or creating a society in which the company's products or services are no longer needed? I call this new business model Devolutionary, a business that intentionally works on its own devolution by making itself obsolete.

Since we do not have this type of model in a wide-spread manner, and therefore I cannot use that many real-life examples (other than my own newly founded enterprises, Kids' Growing City and Urban Guilds Permaculture), I am going to offer some imaginary examples. None of these are completely thought through. It is up to the entrepreneurs, creators and out-of-the-box thinkers of this world to create such real solutions. But as you must have suspected by now, I am a strong believer in

innovation. Some of these ideas might sound impossible or far-fetched but I want to invite you to open your mind to the world of possibilities. Fifty years ago, most people could not imagine a world in which we could print houses in 24 hours with fraction of the cost[42], see and talk to each other over something called the internet from across the world, bring back a rocket and make it sit back on its own fire[43], create Nano-robots that could travel in our veins and directly target cancer cells[44], and so on and so forth. But we are doing all of that and much more, today. What seems far-fetched today could be normal tomorrow. As the famous saying goes, "People who say it cannot be done are usually interrupted by those who just did it." (anonymous)

While admitting that I am a fan of technology, I would like to also mention that to me technology is a tool and could be harmful if used by the wrong people. I am not a "technologist" but am a huge fan of the possibilities it brings to us. Having said that, I want to remind you that the work I am doing in my two Devolutionary Enterprises is not in the technical fields at all. I build school gardens and Permaculture Urban Food Forests. I am only one entrepreneur and it is up to the entrepreneurs of this world, in non-profits, charities and for profit businesses to come up with out of the box ideas (technical, political or social) to solve the world's problem. None of the below ideas are real (other than Kids' Growing City and Urban Guilds Permaculture). They are figments of my imagination and are presented here to promote not the specific ideas, but the idea of Devolutionary Business Model.

Let's imagine a Devolutionary shoe company. For this company to be successful it should find a way for the society to either not need shoes at all or have a way to have shoes without having to buy them from this or any other shoe company ever in the future. An interim solution they could come up with could be to make affordable shoes that anyone on the planet could buy for their babies and it would last forever and grow with the children's feet (wildly out of the box! I know!). Or another solution could be coming up with a home 3D printer of shoes which would make new shoes out of your old shoes. Or pair up this 3D printer with the growing-with-baby-feet solution so everyone can make new shoes for new born babies too!

A devolutionary pharmaceutical company would be one that invests in research and technology in easy-to-make-at-home drugs as well as preventative medicine, eradicating all diseases and creating such level of health and access to natural medicine that no one needs to buy its drugs anymore.

[42] https://www.youtube.com/watch?v=JdbJP8Gxqog
[43] http://www.cnn.com/videos/tech/2016/04/08/spacex-historic-falcon-9-rocket-landing-vstop-orig-cws.nasa/video/playlists/space-launches/
[44] http://singularityhub.com/2015/01/08/can-dna-nanobots-successfully-treat-cancer-patient-first-human-trial-soon/

Or a technology company that comes up with such a food producing gadget that grows a lot of food in a small scale, with very little input that never breaks and lasts forever; or a food producing company that teaches people how to grow their food in their urban or suburban yards in a regenerative manner that they never need their services again. Or an energy company that makes self-energy-generating technology so accessible, sharable and upgradable that after the first purchase, everyone would have energy forever and no one would need to buy from them ever again (what Tesla seems to be doing is close to this[45]).

As noticed in the definition above, a Devolutionary company's mission statement is radically different. And therefore, all its decisions, strategies, techniques and tactics, its short and long-term goals, its human resources strategies, its rate structure, the type of products or services it offers, the way it choses its clients and partners, and the way it treats them, as well as the way it advertises will be radically different. Every decision must be made to achieve a completely different mission and therefore every decision could be entirely different.

For example, my company, Kids' Growing City is founded to teach the next urban and suburban generation how to grow their own food and build successful and sustainable school gardens. I develop curricula and programs which can be used to teach edible gardening in schools and build school gardens that are successful and sustainable. If my mission was to stay in business forever, I would approach my clients in a completely different manner and I would provide a completely different set of services. For example, I would strategize to maximize repeat business. Those schools that have already experienced my programs and loved them would easily want me to go back and run the program again next year (especially those schools in which my programs are paid by the parents). It is easier for me to go back to the same schools and run the same program year after year than to find new schools and convince them to try my programs. Instead of going after repeat business, I train teachers in my schools and empower them to do what I do so that I can move on to more and more schools and teach this important life skill to more and more kids. This means that I will have teacher training included in my services, which is a service that I would not have developed if I wanted to stay in business forever. Why replace myself with my clients if I want to stay in business? Teaching others to do what I do will contribute to Kids' Growing City's mission to eventually go out of business due to the knowledge it spreads and self-sufficiency that it created in the society through its' own services.

You might be thinking why not do this type of work on a voluntary basis for free? Well, first of all, in today's society we cannot change the world and solve its problems while starving. More

[45] https://www.youtube.com/watch?v=dRqSkR4ENAg

importantly though, an organized business, compared to an unorganized voluntary endeavor, would bring revenue which can then be used to expand, extend and scale the operations and have a bigger and faster positive impact towards solving the problem it is tackling, as well as towards achieving the mission of going out of business. I cannot go out of business unless all teachers or at least one teacher in every school knows how to do this and all kids are learning this important skill in their school. As long as this abundance of knowledge does not exist in society and my services are required, I still have not solved the problem and therefore I cannot go out of business (achieve my mission). To create such an impact in such a huge scale my business needs to make money to hire people, advertise and constantly scale the operations by collaborating with school boards and other organizations. Obviously I cannot achieve that with such a small scale operations which runs on a voluntary basis and does its work for free.

Such radically different mission statement would also completely change the way I select my clients. If I were to stay in business forever, I would go to privately owned schools and chase school paid-by-parents programs with limited number of students and higher charge per child. But instead, I seek those schools that are willing to enroll 8 to 10 times more of their students into a program and charge rates that are 8 to 10 times lower per child. Although the profit margins will be smaller with such schools, the impact is much greater.

How would I feel if someone stole my programs and copied my company? Honestly it depends on their mission. If they do a good job of making themselves go out of business in a devolutionary way, and in the process help me reach my devolutionary mission faster, I would not mind it at all. This changes the way I look at competition. If a powerful school board takes my idea and implements it on a large scale without including me I would not mind it as long as they do a good job of it. Would I like to be acknowledged for being the brain behind the programs? Yes, on a personal level I would feel sad and cheated if they ignore me entirely. But at an organizational level, I would be happy because if this work is properly done by some organization, such as a school board that has the power to have a much greater impact on implementing my solution, it will help me reach my mission faster. I have trademarked my logo and had some of my programs copyrighted because I am afraid of my work ending up in the wrong hands. I am afraid of going out of business without achieving my mission. If my programs are ran improperly or by people who want to make money off of them, then I could go out of business without solving the problem I was tasked to solve in order to go out of business properly. A devolutionary company is not suicidal. We have to live well and in prosperity and also need to scale up to the level of the problem at hand, until the mission is achieved and it can peacefully go out of business. Going out of business while the problem is still not solved is obviously a failure. And therefore it seems to me at this point, in order to protect the mission, putting proper intellectual property

protection in place for the company's product and services and having the right patents, copy rights and trademarks in place is crucial for the company's success. Devolutionary companies should have the freedom to share the result of their hard work with whomever they consider capable to collaborate to achieve a similar mission, whomever they see fit for the task. This means that a devolutionary company has a different approach to choosing its partners and collaborators.

The decision to use patents or not, needs to belong to the owner of the idea. For instance, Tesla decided to open up its patents. To be clear I am not claiming that Tesla is a devolutionary business or that Elon Musk is a devolutionary entrepreneur. This is what Elon Musk had to say about his decision to share his patents: "Tesla Motors was created to accelerate the advent of sustainable transport. If we clear a path to the creation of compelling electric vehicles, but then lay intellectual property landmines behind us to inhibit others we are acting in a manner contrary to that goal. Tesla will not initiate patent lawsuits against anyone who, in good faith, wants to use our technology.

… but too often these days [patents] serve merely to stifle progress, entrench the positions of giant corporations and enrich those in the legal profession, rather than the actual inventors.

At Tesla, however, we felt compelled to create patents out of concern that the big car companies would copy our technology and then use their massive manufacturing, sales and marketing power to overwhelm Tesla. We couldn't have been more wrong. The unfortunate reality is the opposite: electric car programs (or programs for any vehicle that doesn't burn hydrocarbons) at the major manufacturers are small to non-existent, constituting an average of far less than 1% of their total vehicle sales.

At best, the large automakers are producing electric cars with limited range in limited volume. Some produce no zero emission cars at all.

… Our true competition is not the small trickle of non-Tesla electric cars being produced, but rather the enormous flood of gasoline cars pouring out of the world's factories every day.

We believe that Tesla, other companies making electric cars, and the world would all benefit from a common, rapidly-evolving technology platform.[46]"

In short, Tesla had patents because it feared that the car companies would take advantage of its technology to inhibit it from reaching its goal of "accelerating the advent of sustainable transport" but then it decided to share its patents not worrying about going out of business as a result. Tesla is more

[46] Elon Musk, "*All Our Patent Are Belong To You,"* last modified June 12, 2014, https://www.tesla.com/en_CA/blog/all-our-patent-are-belong-you?redirect=no

worried about going out of business before it has reached its goal and looks at scarcity of sustainable transport as its main competition.

But wouldn't it be irrational to devolve a company? What would happen to the people who are making their living being employed in that company? Wouldn't they be out of jobs?

Yes they would. It would be in a gradual manner as the society becomes gradually self-sufficient as the result of the company's and its collaborators' operations. Even if as a result of a breakthrough technology for example, the problem was solved and the company's operations were no longer needed, suddenly, we have to ask the question; is that necessarily a bad thing that those people are our of jobs? Schumacher asserted, 40 years ago, that work is increasingly an enforced concept by the rulers of the rich societies who have an "almost universal refusal… to work towards humanisation of work." He says: "That soul-destroying, meaningless, mechanical, monotonous, moronic work is an insult to human nature which must necessarily and inevitably produce either escapism or aggression, and that no amount of 'bread and circuses' can compensate for the damage done-these are facts which are neither denied or acknowledged but are met with an unbreakable conspiracy of silence-because to deny them would be too obviously absurd and to acknowledge them would condemn the central preoccupation of modern society as a crime against humanity.[47]"

Schumacher suggests, and I agree, that "Above anything else there is need for a proper philosophy of work which understands work not as that which it has indeed become, an inhuman chore as soon as possible to be abolished by automation, but as something 'decreed by Providence for the good of man's body and soul'. Next to the family, it is work and the relationships established by work that are the true foundations of society. If the foundations are unsound, how could society be sound? And if society is sick, how could it fail to be a danger to peace?[48]"

I believe that having to live in a society in which we are forced to submit to employment and in many cases perform jobs that not only do not solve any problems but could even perpetuate and increase or even BE the problem, only because we have to make money to be able to survive, is inhumane. This can be called paid slavery. If there is no need for a job to exist, it is inhumane to make a human being spend their life performing that job to earn a living. We have gotten to a point in our societies that we are in a constant state of creating meaningless jobs to survive. As David Graeber

[47] E. F. Schumacher, *Small Is Beautiful: Economics as if People Mattered*. Reprinted by arrangement. (New York: Perennial Library Harper & Row, Publishers inc., 1973), 38
[48] Schumacher, *Small is Beautiful,* 37

suggest in his article "Why Capitalism Creates Pointless Jobs[49]" we have gotten to such state of widespread meaningless jobs that those of us who have meaningful ones are somewhat discriminated against in society because others envy us for having a meaningful job. Having a meaningful job is becoming a rare thing!

Wouldn't the founders and owners of such enterprises stop making money? Yes obviously. But what is money? Doesn't money exist to give us the ability to purchase what we need to survive and thrive? Would we need it if we already had what we need to survive and thrive? We don't need money. What we need is what we purchase with it.

Now imagine a world in which devolutionary companies had devolved in the area of food, energy, health, housing, clothing, etc. would we need to be employed? Would we need to make money? Would we need to compete to exclusively own things that are abundantly shared and available?

I am not pretending that there is a smooth path to utopia and all it takes is a few social entrepreneurs to devolve a bunch of devolutionary businesses and we will live happily ever after. On the contrary, I believe that the path ahead is a very long difficult one with many setbacks, bumps in the road that require accepting and reflecting on failures, revisiting models and getting back on our feet and heading back into "the game". What I am trying to convey is that we need to know what "the game" is and what is it that we are trying to achieve as social entrepreneurs. We should revisit the basic definitions of "success" and "failure". And we should not submit to what everyone else had considered a viable business model in the past.

What I am trying to say is that a business model in which we desperately try to solve problems and at the same time try to stay in the business of solving them just does not make any sense. It has a structural hole in it that inhibits real progress in solving the real problems of this world. I am trying to say that we can define another model in which solving a problem is considered success and going out of business could be a positive indication of that success. And if we all do it, as well as other things that help us move towards a post-scarcity world, we could be soon living in societies in which we are all living healthy, happy, wealthy and prosperous all over the world. All I am doing is dreaming big and imagining ways to make it come true!

[49] David Graeber, "*Why Capitalism Creates Pointless Jobs,"* evonomics (2016), accessed November 25, 2016, http://evonomics.com/why-capitalism-creates-pointless-jobs-david-graeber/

Conclusion

The interviews I had with experts and school staff revealed many challenges for school gardens and teaching edible gardening in schools. These obstacles include lack of knowledge amongst school staff, some perceived logistical challenges and myths that stop school garden projects at their inception, real challenges such as summer maintenance and lack of time and material resources which are perpetuated by conventional school gardening, lack of curriculum, policy inflicted challenges, and lack of community support.

The work I did in the 8 schools and the results I achieved utilizing Permacultural principles and techniques in those school gardens clearly show how Permaculture can positively remove some of those real challenges. The challenges Permaculture clearly can help with are summer maintenance and lack of monetary and labour resources. This in turn helps build examples of successful school gardens with minimal monetary or labour inputs. The more such school gardens are built the more myths and perceived challenges will be gradually eliminated. Permaculture can build a culture in which successful school gardens in urban areas are perceived to be easily doable.

When it comes to lack of knowledge and lack of edible gardening curriculum, Devolutionary businesses such as Kids' Growing City can add solutions into the mix that help with sustainability of those successful Permaculture school gardens. The impact of such Devolutionary business is yet to be measured but already signs of success can be observed in those schools that had teachers trained in-person and online.

The D.C.P. School Gardening Formula empowers schools to do Permaculture designs, write Curricula with a focus on 100% student involvement in building and maintaining the gardens, and plan appropriately and timely for the garden and its related activities. This helps reduce the challenges of lack of time as well as lack of labour resources to maintain the garden during the school year. The Devolutionary goal of Kids' Growing City enables it to create ownership of the garden from within the school itself by teaching the craft to schools and happily leaving them to sustainably succeed on their own without the need to hire Kids' Growing City for those gardening seasons to come.

Appendixes

Appendix 1

ENVS 6151 Popular Education for Social Change II

Praxis Project; Redesign the workshop: How to Teach Edible Gardening in Schools

Leila Mireskandari

August 2016

Course Director: Chris Cavanagh

Contents

Background

I teach edible gardening in schools. I started this path in 2013 with my own daughter's school and have worked with and built school gardens in 8 different schools so far. I created Kids' Growing City as a social enterprise with the mission of changing the world, one school garden at a time. My intention is to create social and behavioural change in a grassroots manner from inside schools, within staff and students to empower them with the knowledge and skills that enables them to redesign our future food system for a just one.

My experience has elaborated many gaps in our school system that stand in the way of school gardening. One of these obstacles, amongst many others, is lack of knowledge and expertise on the topic, between teachers and school staff. In simpler words, our teachers don't know how to teach edible gardening and build school gardens. To help close this gap, I have seized any opportunity to provide training for teachers who are interested in learning how to teach edible gardening and build school gardens, including running workshops and even building an online course.

One of these opportunities presented itself last year, when I was invited to facilitate a workshop for educators of York Region, on the 4th of October of 2015, in collaboration with a non-for-profit organization in the York Region. The workshop was titled "HOW TO GROW FOOD WITH KIDS: EDIBLE GARDENING IN SCHOOLS FROM THEORY TO PRACTICE"[50]. This workshop was very well accepted by the community and received full registration.

This was the first time I was facilitating a workshop for educators. Before getting into teaching edible gardening, I was a software developer with a Bachelor's Degree in Applied Mathematics. Although the curricula I had created to teach edible gardening to students were working well and my programs were well accepted by parents, students and schools, I had absolutely no background, knowledge or expertise in adult education or education for social change. But since I did not want to lose the opportunity, I got to work and put together, to the best of my abilities at the time, the overall plan and the presentation slides for the workshop. I asked a friend to come to my assistance for video-taping me in the workshop, thinking I might be able to put it online later and make it accessible to more educators.

People showed up, I ran through my slides, received and answered many questions competently and at the end participants left satisfied and gave good feedback to the organizers afterwards.

In general, this could be considered a success, given the fact that I was completely inexperienced in the field. But I knew the satisfaction generated among participants was in part due to lack of a benchmark to compare my workshop to. Unfortunately not a lot of similar workshops are available to educators on this topic. Also the knowledge provided to educators on my workshop, or it is better to call it my lecture, did not generate a lot of the desired action I was hoping for, after the workshop. One of my hopes for the workshop was that teachers leave with tools and skills to help them start a school garden. Although I know some of them did some small indoor seeding with their students, not a lot of them had the confidence or the needed support to actually put their foot forward and start a school garden. This workshop brought me some new business the following spring in the school of one

[50] http://www.yrnature.ca/gardening_workshop_2015

of the teachers in which I also trained 3 teachers to run my program. But I was hoping for more direct impact by the participants themselves in their own schools.

I also cut the video that my friend took from the lecture, into 10 shorter videos and put them on my Youtube channel[51]. This again helped me to get more clients since it created some buzz about my business, but I am not sure how much of the information was actually useful to educators in this format. I had the feeling videos of a recorded workshop which was more like a lecture than a workshop might not be the best format of online educational material to create social change.

Here I am attempting to redesign that workshop. Popular Education for Social Change 1&2 courses, directed by one of the best in the field, Chris Cavanagh, along with other courses I took with Education and Environmental Studies faculties of York University, have provided me with the knowledge and confidence and have sparked many ideas to improve this workshop. In particular I will use the spiral model from the chapter, "Working by Design Putting Together a Program", from the book, Educating for Change[52] as the main framework of this redesign. Also the concepts of "Naming the Moment"[53] as well as "Seizing the Moment"[54] are utilized in this redesign.

Areas to Be Improved

Looking at the previous design of this workshop through Arnold's lens of spiral model[55], the following can be quickly identified as areas to improve upon:

Title

The previous title of this workshop, "EDIBLE GARDENING IN SCHOOLS FROM THEORY TO PRACTICE" shows the mentality of conventional education which in Arnold's words assumes "that theory is something developed by the experts…"[56]. In this type of approach to education, practice comes after the theory was developed which is what the title of this workshop suggests. In the spiral model, "we are suggesting that theory involves going down into a deeper understanding of our own day-to-day existence, rather than up into the abstract."[57]

Suggestions for the new title: "Edible Gardening in Schools, Successful and Sustainable", "How to grow food with kids successfully and sustainably", "Edible Gardening in Schools, the cycle between practice and theory", "Edible Gardening in Schools, From Experience to Theory to Action"

Lecture setting

The setting of the workshop, with chairs lined up in rows against the facilitator, the "expert", in a lecture-giving type of setting needs to change in order to facilitate other senses than just hearing (and seeing in the limited way of looking at the "expert's" slides). To enable maximum amount of learning, more senses need to be involved during the workshop as expressed in the learning heads in Educating

[51] https://www.youtube.com/watch?v=SVTlcqlN_aw
[52] Rick Arnold, Bev Burke, Carl James, D'Arcy Martin, Barb Thomas, *Educating for Change,* (Ontario: Between the Lines 2002), 31-67
[53] Deborah Barndt, *Naming the Moment: Political Analysis for Action* (Toronto: Jesuit Centre for Social Faith and Justice 1989)
[54] http://www.catalystcentre.ca/consulting/seize-the-moment/
[55] Rick Arnold, Bev Burke, Carl James, D'Arcy Martin, Barb Thomas, *Educating for Change,* (Ontario: Between the Lines 2002)
[56] Arnold, *Educating for Change,* 39
[57] Arnold, *Educating for Change,* 39

For a Change. [58] The setting should also encourage participation, collaboration and connection between participants. It therefore needs to change from individual chairs facing the expert to sitting in group(s) to facilitate working together.

In general the whole workshop needs to be designed using the spiral model instead of conventional lecture model and it needs to have a lot more group work, hands-on work, discussions and participation from the participants.

Continuing Process vs. Single Event

The Spiral model suggests that social change education "is a continuing process, not a single event"[59]. Although there is not much that can be done to change the fact that such a workshop is a single event, more online and in-person connections and follow-ups could be designed to turn it into a continuing process to facilitate learning further beyond the workshop and create and provide communal support amongst participants.

Who is coming?

Although, based on my experience working with many schools and teachers, I had an idea on what the participants' fears and concerns were about the topic and what their hopes and expectations were of the workshop, I still wanted to be sure that I was not missing any of the main expectations. In the beginning of workshop I asked participants to introduce themselves and tell us about one thing they were hoping to get out of this workshop. For over 30 people, this took a very long time and did not give me a good picture either. The act of getting to know my participants needs to be done in a different way. It needs to take much less time in the actual workshop, needs to give me a better complete picture of concerns and hopes of participants and it needs to happen ahead of time so I have the possibility to address the hopes and concerns in the design of the workshop.

High level planning

The following depicts different planning elements required for this workshop. The design stage will be further elaborated on, in future sections of this document.

Design stage (details in future sections)

Prepare workshop content to incorporate the following social change education elements of spiral model[60]:

1. Encourages creative expression
2. Uses the mind, hands, and emotions
3. Strengthens organization (example, the group called "Edible Gardening Teachers")
4. Encourages collective action for change
5. Models democratic relations between learner and leader
6. Includes both reflection and action
7. Puts local issues into national and global context

Preparation for the workshop

1. Survey participants beforehand via email to know their hopes and concerns

[58] Arnold, *Educating for Change,* 40
[59] Arnold, *Educating for Change,* 41
[60] Arnold, *Educating for Change,41*

2. Incorporate the results of the survey into the content of workshop to address hopes and concerns.
3. Prepare all material for hands-on work
4. Prepare a mechanism to gather feedback during and at the end of the workshop and allocate time for it in the workshop design
5. Prepare handouts that include instructions as well as more resources to learn further beyond the workshop
6. Plan for future events online or in-person, which would give the participants the opportunity of continuous learning. This is to make the event "a continuing process"[61].
7. Plan and prepare brochures for online community events to support each other after the workshop. This is to "encourage collective action for change."[62]
8. Discuss and arrange logistics with organizers for hands-on activities as well as possibility of sitting in a different arrangement than rows facing the lecturer
9. See if healthy package-free snacks could be served in reusable containers instead of packaged processed snacks in Styrofoam and plastic. This is of lower priority but would create an agreeable consistency between the topic and what is served.
10. Plan for "things to guard against or your worst scenario". For example, people are usually used to expert-driven, lecturer-in-power workshop settings and might be uncomfortable with any other setting that puts them in a situation of power or responsibility.

Right before the workshop

1. Arrive early to set the stage for a spiral learning environment, sitting in circle or groups instead of rows facing the lecturer, etc. Also to give a helping hand in logistical preparations of the venue if necessary.

[61] Arnold, *Educating for Change,41*
[62] Arnold, *Educating for Change,41*

The Design

This workshop is for teachers to learn how to teach edible gardening and build school gardens.

The duration of the workshop is 3.5 hours plus 15 minutes for breakfast and welcome in the morning and 15 minutes of networking and group wrap-up at the end (4 hours in total).

Having the spiral model in mind, I would now design this workshop as follows.

Workshop Objectives

1. **The WHY:** Bring to the surface this realization that teaching edible gardening to future generation is a critical pillar in the foundation of our food sovereignty.
2. **The HOW:** Encourage individual direct action in their space of influence (their classrooms, schools, etc.)
    a. Address their fears, concerns and insecurities when it comes to growing food with kids in school environments
    b. Give them the techniques, skills and tools to constructively boost their confidence
    c. Create support structures for after the workshop
3. **What's Next:** Foster collective action for social change

Measuring Objectives

In order to ensure an objective was achieved and to measure it, the following activities would be incorporated into the workshop:

The WHY

- Design activities and discussions into the workshop to critically challenge status quo, in which edible gardening is absent from school curricula and future generation is not learning how to grow their food, deal with their waste and take good care of their health while not harming their habitat. The 4 steps in naming the moment can be used here, namely "Naming ourselves", "Naming the Issues", "Assessing the forces" and "Planning for action"[63].
- The above activities and discussion should result in a collective documented agreement on why teaching edible gardening is necessary and its relations to food sovereignty as well as the environment, as well as our collective plan of action to address the issues.

The HOW: 2.a

- A pre-workshop survey needs to be distributed to be filled out by the participants prior to the workshop. This survey would ask about:
    - Personal ethnicity and/or background and its relation to gardening or farming
    - What type of school setting they currently work in (private/public)
    - Do they currently have a garden in their school
    - Any personal experience with gardening/farming
    - Perceived obstacles in the way of their school garden, their concerns and fears
    - Hopes and learning expectations of the workshop

[63] Deborah Barndt, *Naming the Moment: Political Analysis for Action* (Toronto: Jesuit Centre for Social Faith and Justice 1989), 28

    - Any hopes or plans to act on the learning gained in the workshop in their space of influence, in the future
- Incorporate the pre-workshop survey results into the workshop content to address expressed hopes and concerns
- At the beginning of the workshop give 5 minutes to individually write down their biggest concern as well as their number one learning expectation of the workshop (take pictures of papers for future analysis) and keep it with them until the end. At the end of the workshop give another few minutes to review it and then a few minutes group reflection discussion on whether their biggest fear and number 1 learning expectation were met or not.

The HOW: 2.b

- Incorporate mini-lectures to share my (facilitator's) personal experience on what does or doesn't work in school gardening, as well as my D.C.P. (Design, Curriculum, Planning)School Gardening Formula. Also allow a few minutes of group reflection discussion time after each mini-lecture.
- Incorporate hands-on activities as well as small-group in-workshop garden design assignments to cover the basics of D.C.P
- At around 1.5 hour mark (middle of the workshop), suggest break time and ask participants to reflect on what they have learned so far that would empower them for action. And what skills do they think would need to be covered after the break (in the second part of the workshop) that would give them the confidence to put their learning into action.
- At the end of the workshop, give the participants a few minutes time to reflect again, in big group circle on what skills they gained, what they learned and if there is still anything they think they need to learn to be able to confidently start teaching edible gardening and building school gardens in their school

The HOW: 2.c

- Create accountability groups of at least 2. And as well, provide a mechanism to report, reflect on, review and update their assignments together (internet comes handy for this).
- Ask/survey participants about how they feel about acting in their space of influence, if they feel supported and what type of support they would like from the group.

What's Next

- Before the class, create an online group in which participants could share their future concerns, experiences, success stories and pictures, as well as support each other through tough times by sharing suggestions and resources
- During the workshop encourage participants to join the group
- After the workshop, keep contributing to the group to encourage others to do the same
- After the workshop send participants pictures and documents about our discussions and collective agreements and products we produced together

The Introduction Part (50 minutes)

1. Introduce myself (3 minutes)

As participants are most likely to be used to "expert-based" type of lectures rather than the democratic type of a spiral model, I need to establish my credentials and explain why I should be trusted as an expert. Arnold indicates, "It is a paradox in democratic education practice, that before you can successfully give over control to the participants, you need to establish your credentials, to get their respect."[64] Therefore, I will start off with my story, where I come from, why I am here, my credentials and my accomplishments in this field.

2. Get to know each other (22 minutes)

After I introduce myself, I would like us to know each other, "the experience of participants"[65].

2.1) "Own the Space", Energizer (5 minutes)

At this stage I would use an energizer in which people would get to move around the chairs, place them in a circle and claim the space as theirs (The energizer is TBD).

2.2) Name Tags (2 minute)

I would give participants name tag stickers and markers and ask them to write their first names and stick them to their chest.

2.3) Who we are (5 minutes)

In the interest of time, assuming the number of participants is around 30 people, I would not go around the room for everyone to introduce themselves. Instead, I would share statistics from the results of the pre-workshop survey and ask people to raise hands if they fit the announced. For example I would say:

- 10 of us (or 30% of us) are teachers in elementary schools. Would you please raise your hand if you are?

Another example:

- 17 of us (or the percentage) have never grown veggies before. Would you please raise your hand if you have no experience with growing veggies?

2.4) Our experiences (10 minutes):

I would read out some of the interesting experiences shared on the survey. Then I would ask if people who did not have the chance to fill out the survey, had anything they wanted to add. Or if anyone could think of an interesting relevant story or experience they wanted to add.

3. The WHY (10 minutes)

3.1) Name the Moment

To collectively define why we are here and determine what we would like to accomplish within the context of this workshop, I would raise the question below and let people come up with and suggest answers to them (while my assistant or I take notes of their answers on a board):

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[64] Rick Arnold, Bev Burke, Carl James, D'Arcy Martin, Barb Thomas, *Educating for Change,* (Ontario: Between the Lines 2002), 48

[65] Arnold, *Education for Change,* 53

"Why is it that we don't have a garden in every school?"

With raising and answering this question we will collectively "name the moment", this moment, in the history of our school gardening. Our answers will point at some issue that need to be addressed.

3.2) My Personal Opinion

I will then share my understanding of the main issues that had led me to run such workshops and how I am trying to contribute to resolving these issues. Especially, how what we learn in this workshop can help participants overcome some of these challenges in their space of influence.

4. The objectives and the agenda (15 minutes)

4.1) Concerns and Learning Expectations (10 minutes)

Before sharing the objectives and agenda, I would ask participants to write down their number one concern or obstacle in the way of building a school garden as well as their highest priority learning expectation of this workshop. I/my assistant will then take pictures of their papers for my future analysis and ask them to keep this paper with them till the end of the workshop for we will come back to this later.

4.2) Objectives and Negotiating the Agenda (5 minutes)

I would then share the objectives of the workshop as well as the agenda. Objectives are as stated above, The WHY (mention that this is already completed), "The HOW" and the "What's Next", and ask participants to raise any concerns they might have about the agenda and invite them to negotiate changes to it, based on their concerns and learning expectations. And I will "clearly name expectations that:

- Are already part of the agenda
- Cannot be met, outside of the scope of the session
- Can be included but would require some redesigning."[66]

The HOW (150 minutes)

1. "What is in your dream school garden" Energizer (5 minutes)

Before starting the gardening activities of the workshop and after the introduction, a relative energizer would be a good idea to get people moving and having fun and if the energizer is related to gardening activities it will be a nice Segway into the next part of the workshop.

Recourses: A soft small object such as a soft ball or stuffed animal

Method:

1) Ask participants to stand up in a circle.

2) Ask them to think about their school garden if they have a successful one or their dream school garden if they don't have one yet and all the things (plants or other) that are in it.

[66] Arnold, *Education for Change*, 49

3) Starting with the facilitator the participants would name one of those things that are in that dream school garden while throwing the object to another participant. Whoever has the toy/ball should name another thing and throw the toy to another participant of their choice.

4) Participants should try to name a new thing each time. No repeats are allowed. If one is caught repeating a thing that was already mentioned, they should try again until they come up with a new one.

5) This continues until the 5 minutes are passed

2. *Mini-lecture #1: D.C.P. School Gardening Formula (15 minutes)*

The first mini-lecture is an introduction of my D.C.P. School Gardening Formula and how using Permaculture principles it can help eliminate any obstacle in the way of school gardening. I would explain D stands for Design, C stands for Curriculum and P stands for Planning. And give concrete examples of how the formula can eliminate real problems.

3. *Hands-on #1: Indoors Seed Starting (15 minutes)*

1) Explain my favorite method for starting seeds indoors in a school

2) Distribute my seed starting handout (assistant can help with this activity) for further reference

3) Every participant gets to make, seed and take home one seed starting kit. We make these kits together.

4. *Mini-lecture #2: Basics of Design (10 minutes + 5 minutes Q/A)*

The second mini-lecture would be an introduction to basics of designing for a school garden. Dos and Don'ts as well as what (based on my experience) works or does not work in school garden designs.

5. *Evaluation #1 (2 minutes):*

Since this would be almost half way through the workshop, it would be a good time to evaluate if we are on track to achieve our learning goals.

I would ask the participants to take 2 minutes and write down their reflections about the workshop so far answering these questions (inspirations came from structured criticisms we wrote in Popular Education classes):

1. What did I connect with so far? What was inspiring or intriguing?

2. What did I learn so far that could be directly used in my space of influence (school/classroom)?

3. What do I still need to learn in order to teach edible gardening in my space of influence (school/classroom) and build a school garden?

6. *Break (8 minutes)*

After the personal evaluation we would have an 8 minutes break for anyone who has finished writing their evaluation #1 before we get back to work. Refreshments would be served or food that participants brought to share could be enjoyed.

7. Group Reflection #1 (5 minutes)

In a circle we would share our thoughts from our evaluations before the break (sharing is on a voluntary basis) with the whole group. And I (or my assistant) would take pictures of the written reflections for my future analysis and ask participants to keep their writing along with the concerns and learning expectations piece (which they wrote at the beginning) until the end of the workshop.

8. Small Group Hands-on Design (30 minutes)

Divide people in groups of 4 or 5, ask them to choose one of their school's outdoors, draw a hand-made approximate map of the place on paper and discuss the main design elements we learned in mini-lecture #2 for that school garden. Try to come up with where and why they would install the garden and their reasons why.

Each group will then present their high level design ideas to the whole class at the end and we would collectively discuss and brainstorm ideas.

9. Mini-lecture #3: Basics of Curriculum (10 minutes + 5 minutes Q/A)

The third mini-lecture would be an introduction to basics of curriculum writing for a school gardening program. Dos and Don'ts as well as what (based on my experience) works or does not work in school garden curriculum. As well as what I cover in my two spring and fall programs and why.

10. Group Curriculum Writing Activity (10 minutes)

1) Hand out a general Toronto planting schedule to everyone

2) Assuming a date in spring or fall (facilitator will pick a date) we will suggest seeds that could be sowed in the garden in this week's gardening class and list them on the board.

3) Using the same date, and assuming we have seeded everything we could indoors and have plenty of healthy seedlings to transplant, we will suggest which of those seedlings can be planted out in the garden at this time of year.

11. Mini-lecture #4: Basics of Planning (10 minutes + 5 minutes Q/A)

The final mini-lecture would be an introduction to basics of planning for a school gardening program. What to pay close attention to and what not to forget (based on my experience).

12. "Successful and Sustainable School Garden" Energizer (5 minutes)[67]

Resources: a few objects to pass around - e.g. pens

Method: The group should sit in a circle. The facilitator passes the first object to the person on his / her left and says "This is a Carrot" to which they reply "A what?" and the facilitator replies "A Carrot". The object is then passed on with "This is a Carrot" and the reply is again "A what?" The first person then repeats this question to the carrier who replies "A Carrot" and they then repeat this to person number 2. So the pen gets passed on and for each person the question gets repeated around the circle to the facilitator and the answer is repeated back. After practising until this is clear, try it with the second object ("An Eggplant") being passed around to the right. Then start the game with both objects, sending them around in opposite directions.

[67] Paul Mullan, "*Games and workshops manual*," accessed August 20, 2016, http://www.peace.ax/images/stories/pdf/games%20and%20workshops%20manual.pdf, 7

After a few rounds of simple vegetable names, the facilitator passes the next pen to his/her left and says “This is a successful school garden” and the same game is played with this phrase while the facilitator turns to the person on his/her right and says “This is a sustainable school garden”. And the game is played until the last 2 questions are back to the facilitator.

13. Reflection on terms, Success and Sustainable, in the context of school gardens (10 minutes)

In the circle we will brainstorm properties of successful as well as sustainable school gardens and the facilitator/assistant would write them down on a board.

Facilitator will share her/his opinion in the mix and discusses how such school gardens could be achieved.

What is Next (15 minutes)

1. Evaluation #2: What did we accomplish and what could the next steps be (10 minutes)

Ask the participants to open their “Concerns and Learning Expectations” as well as “Evaluation #1”, review them, and write down the answer to the following questions:

1. What did I connect with the most in this workshop? What was inspiring or intriguing?

2. What did I learn that could be directly used in my space of influence (school/classroom)?

3. What do I need in order to teach edible gardening in my space of influence (school/classroom) and build a successful and sustainable school garden?

4. What type of support do I need from the group to achieve it?

5. Did the workshop meet my learning expectations and addressed my concerns? If yes, how? If no, what was missing?

Facilitator/assistant will take pictures of the writings for future analysis.

2. Final Group Reflection: What is next? (5 minutes or more!)

The participants would now share their final thoughts from evaluation #2 in a big group discussion. This would lead to suggestions for creation of communities outside the workshop for people to keep connected and help each other out. This is also a good time for facilitator to announce any online or in-person event or gatherings that are already organized for near future and encourage participants to join the online community. This is also a good time to create accountability groups and follow-up mechanisms for future collective endeavours.

3. Thanks and goodbyes

This is to take a minute to take at the end to thank assistants, organizers and supporters of the event as well as the participants.