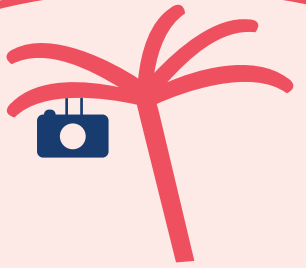
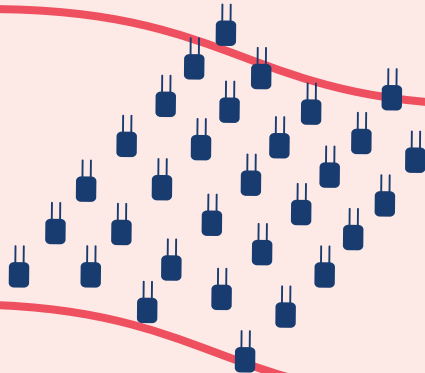
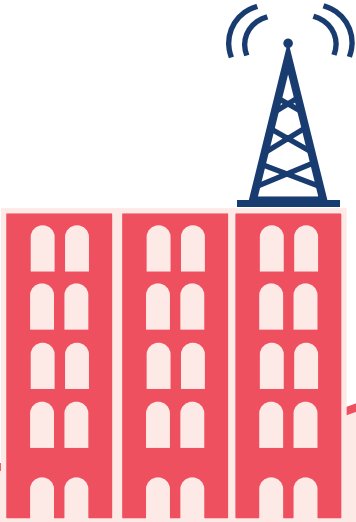


Teaching Community Technology Handbook



This handbook is produced by the Detroit Community Technology Project. It was commissioned by New America's Resilient Communities in partnership with New York Economic Development Corporation's RISE NYC Program.



Chief Editor: Diana J Nucera

Editor: Valeria Mogilevich

Content Consultant: Ora Wise

Copy-edited by: Nina Ignaczak and Muna Danish

Graphic Design: Valeria Mogilevich

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This handbook focuses on teaching strategies that make learning technology accessible and relevant. Those new or old to teaching will find this book useful in creating community-rooted technology programming and educational materials. We believe sharing these teaching practices has the potential to diversify and shape technology fields to be community-oriented.

To download the guide, editable worksheets, and editable templates, visit:
detroitcommunitytech.org/teachcommtech



What Is Community Technology?



Communication Is a Fundamental Human Right

Think about all the ways your life depends on being able to talk to someone. More often than not, technology enables you to communicate with others. The ways in which we communicate shape our environments, from how we relate to each other to how a neighborhood or city gets built. Our digital environments support life just as food and water, albeit in different ways, and the health of our digital ecosystem is reflective of the health of our neighborhoods and communities.

In Detroit, for example, social services such as Social Security, welfare, and unemployment are now being offered exclusively online. While this has probably cut costs, it has also lessened access. According to the 2013 U.S. Census, 33 percent of households in Detroit lack a consistent connection to the internet. Without the ability to access essential government services, those who are already disenfranchised may find themselves in dire situations. These may lead to crime and violence, and ultimately the destruction of their own neighborhoods.

Physical neighborhoods don't exist on the internet, but all the ways in which technology intersects with our lives create a digital ecosystem. In some instances, people who are neighbors can also create a digital community or neighborhood by building it together and sharing ownership over it. This may look like a **listserv**, **neighborhood website** or **community wireless network** that allows neighbors to share their internet connection. When the internet and other forms of technology play a role in strengthening relationships, they can serve as powerful tools for improving a place.

Community technology is a method of teaching and learning about technology with the goal of restoring relationships and healing neighborhoods. Community technologists are those who have the desire to build, design and facilitate a healthy integration of technology into people's lives and communities, allowing them the fundamental human right to communicate.

Technology and the internet have the ability to transform our communities, assist in economic development and help residents understand and utilize the power they already have. We share these with poor and marginalized communities to help them realize their power in shaping the future in just, creative and collaborative ways.

ACTIVITY: Investigate That Tech

In this activity we will investigate ownership and impact of everyday technologies, and then reimagine them as if they were built by and for your community.

Step 1: Take five minutes to brainstorm a list of a few technologies you and your community use. Here are some examples to get you started:

1. My home phone network
2. My mobile phone network
3. Social media platforms
4. Online news platforms
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Step 2: Circle one technology from your list that you're interested in further investigating.

Step 3: Answer the following questions about the technology you chose. The answers do not have to be long but they should be accurate, and not based on opinion. If you have access to books or the internet, you may use them to help answer these questions.

1. Who owns the technology?
2. How are decisions made?
3. Who designs the technology or system?
4. Who is it designed for? Who has the most access to this technology?
5. Who has the least access to this technology?
6. How are skills and knowledge shared about the technology?

Step 4: Take a second to read through your answers. What jumps out to you? In the space below, draw connections or patterns that you notice.



Step 5: Identify a community you are a part of. This can be your neighborhood, a group of people you love working with, your circle of friends—anything you identify as community. Take a minute to describe your community:

Imagine that same technology you chose was built for and by your community. How would it be different? In the box below, draw how you think your community would design that technology; then write down what you changed, and why.



Did anything change? If so, what changed and why?

What did we learn?

Instead of trying to fit our communities to existing technology, we need to reshape technology to fit our communities. It's not just about knowing how to use tech but investigating, teaching, and learning about it; encouraging people to be entrepreneurs as well as consumers; and building communications networks that match the social networks in our neighborhoods.

There is a relationship between people's creativity and their ability to take ownership of their own lives and lead their communities. We can better advocate for ourselves when we have the ability to shape the future we envision.

Community technology is an alternative vision of technology in which communities and neighborhoods have direct control over their digital communications, allowing for greater self-determination and power over their shared digital voices.

THINK ABOUT IT ...

Why is creativity important for building self-confidence?

How would technology need to change to meet the needs of your community?

How could creating content for the internet build community in a neighborhood?

Building from Community Need

Adapted from Civic Quarterly article: “Two-Way Streets” by Diana Nucera

The advent of the internet and technology brings with it a myriad of opportunities to unlock enormous potential that is sometimes latent in our local communities. These opportunities can only be taken advantage of, however, if people leading the technology projects are deeply invested in their community’s welfare. These leaders must have a deep understanding of and desire to maintain the fabric that binds their community together.

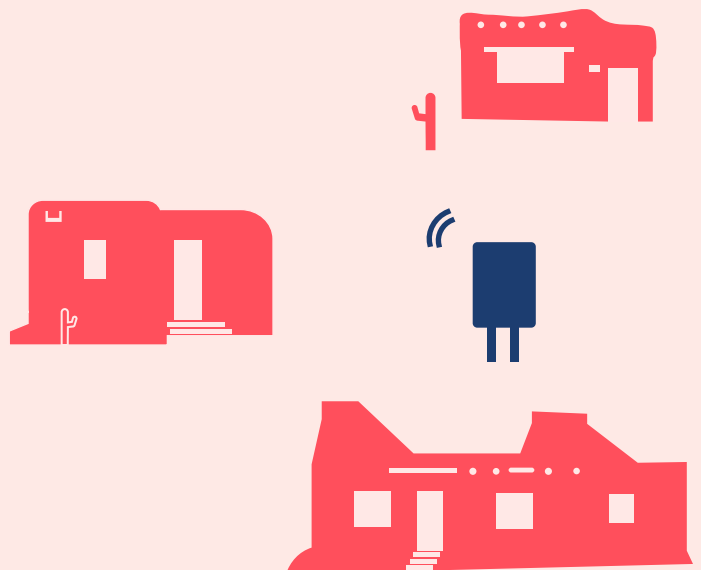
Civic engineers, technologists, and educators have many options in building bridges between those who want to leverage the potential of the internet and other technologies and those who wish to galvanize their local communities. Using examples from the Detroit Digital Justice Coalition, we’ve identified some of the most relevant processes designed to forge a participatory digital future.

During the Summer of 2009, the [Detroit Digital Justice Coalition](#) came together to understand the role that media and technology might play in restoring our community and creating local micro-economies. The Coalition comprises 13 member organizations— together, they represent senior citizens, young people, environmental justice groups, welfare rights activists, hip-hop community organizers, independent technologists and designers. The underlying idea that communication is a fundamental human right connected this diverse group.

Coming to the common understanding that communication is a fundamental human right and recognizing the role media might play in revitalizing Detroit, members of the coalition interviewed colleagues and each other with the following questions:

- **How are you currently using media and technology for organizational and economic development?**
- **What kind of support and collaboration would make your work stronger?**
- **What should digital justice in Detroit look like?**

Recorded interviews were edited before debuting at the first Detroit Digital Justice Coalition meeting. Attendees were asked to write down any quotes that stood out to them, as well as thoughts that emerged while listening to the highlight reel. A group conversation followed, from which the Detroit Digital Justice Principles were born. The principles create a unifying definition of what digital justice means to the community.



Detroit Digital Justice Principles

Access

- Digital justice ensures that all members of our community have equal access to media and technology, as producers as well as consumers.
- Digital justice provides multiple layers of communications infrastructure in order to ensure that every member of the community has access to lifesaving emergency information.
- Digital justice values all different languages, dialects and forms of communication.

Participation

- Digital justice prioritizes the participation of people who have been traditionally excluded from and attacked by media and technology.
- Digital justice advances our ability to tell our own stories, as individuals and as communities.
- Digital justice values non-digital forms of communication and fosters knowledge-sharing across generations.
- Digital justice demystifies technology to the point where we can not only use it, but create our own technologies and participate in the decisions that will shape communications infrastructure.

Common ownership

- Digital justice fuels the creation of knowledge, tools and technologies that are free and shared openly with the public.
- Digital justice promotes diverse business models for the control and distribution of information, including cooperative business models and municipal ownership.

Healthy communities

- Digital justice provides spaces through which people can investigate community problems, generate solutions, create media and organize together.
- Digital justice promotes alternative energy, recycling and salvaging technology, and other technologies that foster environmental solutions.
- Digital justice advances community-based economic development by expanding technology access for small businesses, independent artists and other entrepreneurs.
- Digital justice integrates media and technology into education in order to transform teaching and learning, value multiple learning styles and expand the process of learning beyond the classroom.

[The Detroit Digital Justice Principles](#) have since shaped several projects in Detroit and around the world. The Detroit Digital Justice Coalition emphasizes the importance of engaging in conversations throughout the creative process. More specifically, it implies that technologists should begin by identifying communities that are already working on difficult problems.

ACTIVITY: Get to Know the Detroit Digital Justice Principles

Developed by the Detroit Digital Justice Coalition

This is an activity designed to foster discussion about the DDJC principles and learn why it's important to work from shared principles. In this section we will brainstorm what it looks like to put the DDJC principles into practice at the individual, community, city/state, and global levels. Go to page 55 for the worksheet.

Step 1: Re-read the Detroit Digital Justice Principles. Think about what principles are relevant to you. Take a few minutes to have a discussion with someone about the ways these principles make sense to you.

Step 2: Focus on one of the DDJC principles and circle it.

Step 3: Use the grid on page 55 to brainstorm ideas of what that principle can look like in practice. Start with the individual square and then move on to community, city/state, and global.

FOR EXAMPLE: Digital justice demystifies technology to the point where we can not only use it, but create our own technologies and participate in the decisions that will shape communications infrastructure.

Individual

Share my internet access with my neighbor and teach them how to use it.

Community

Build a community wireless network with my neighbors and brainstorm ways we can use it to strengthen our neighborhood.

City/State

Create a community benefits agreement with a local internet service provider to donate connections throughout the city so we can train other neighborhoods how to do what we did.

Global

Publish a handbook that demystifies technology.

What did we learn?

When we do things together, there are benefits that go beyond just achieving our objectives. It's not enough to embed something within a community without also giving members of that community the skills to customize, adapt, and maintain it.

Community technology is a principled approach to technology that is grounded in the struggle for a more just digital ecosystem, placing value on equity, participation, common ownership, and sustainability.



THINK ABOUT IT ...

How can media and technology play a role in restoring community and creating new economies rooted in local relationships of accountability, mutual aid, trust, and authentic communication?

In what ways can the process of a community technology project be worthwhile in and of itself, rather than the project simply being seen as a means toward an end?



Community Technology Examples

Here are a few examples of what community technology can look like in practice. Because these processes are embedded in community need, there is not just one way to approach a program or project. The first few examples are of temporary, inclusive spaces for communities to design, define and explore new technologies.

DiscoTechs are events that feature interactive multimedia workshops designed to engage and inform the community about issues of internet use and ownership. They provide tools that allow communication to be more easily recognized as a fundamental human right.

<https://store.alliedmedia.org/products/how-to-discotech-zine>

CryptoParty is a decentralized global initiative to introduce the most basic cryptography software and its fundamental concepts to the general public, such as the Tor anonymity network, public key encryption (PGP/GPG) and Off-the-Record Messaging (OTR).

<https://www.cryptoparty.in/>

The Feminist Tech Exchange (FTX) seeks to empower women's rights organizations and advocates for women who are sidelined from the growth of the global digital commons through skills diffusion and capacity building. The Exchange was developed in response to the expressed needs of feminist and women's rights movements for greater understanding of emerging information and communications technologies.

<https://www.apc.org/en/node/8041/>

The following are community technology projects that create more permanent spaces for people to collaborate in building, creating and designing technologies.

Makerspaces are community centers with tools. They combine manufacturing equipment, community and education to enable community members to design and create prototypes that wouldn't be possible for individuals working alone.

<https://makerspace.com/>

Hackerspaces are community-operated workspaces where people with common interests (often in computers, machining, technology, science, digital art or electronic art) can meet, socialize and collaborate. Hackerspaces have also been compared to separate regional community-operated spaces with similar aims and mechanisms such as "fab labs" and commercial companies.

<https://wiki.hackerspaces.org/>

Digital Justice Coalitions include people and organizations that connect social justice issues with media, technology, economic development, digital literacy and other disciplines. They are based on a variety of values, including communication as a fundamental human right, media as a tool to connect communities, and healthy relationships. The Detroit Digital Justice Coalition and Philadelphia's Media Literacy Project are good examples.

<http://detroitdjc.org/>

<http://medialiteracyproject.org/>

The following community technology projects create platforms that allow communities to share information.

Community Radio Stations offer an alternative model to commercial and public broadcasting. Stations serve geographic communities and communities of interest. They broadcast content that is popular and relevant to a local and specific audience but is often overlooked by commercial or mass-media broadcasters. They are operated, owned and influenced by the communities they serve. AMARC and Prometheus Radio Project are good resources for community radio stations.

<http://www2.amarc.org/>

<http://www.prometheusradio.org/>

Community Wireless Networks are an alternative to commercial or municipal wireless networks. Usually residents put wireless routers on their rooftops or windows to link with neighbors. There are many networks worldwide, including Guifi, Detroit Digital Stewards' Community Networks, Red Hook WiFi, Athens, Altermundi, Freifunk, etc. In addition, there are many software and hardware projects to support community wireless networks (Mesh Potato, Freifunk, Guifi, Commotion). The Commotion Construction Kit is a guide to community wireless networks.

<https://www.commotionwireless.net/docs/cck/>

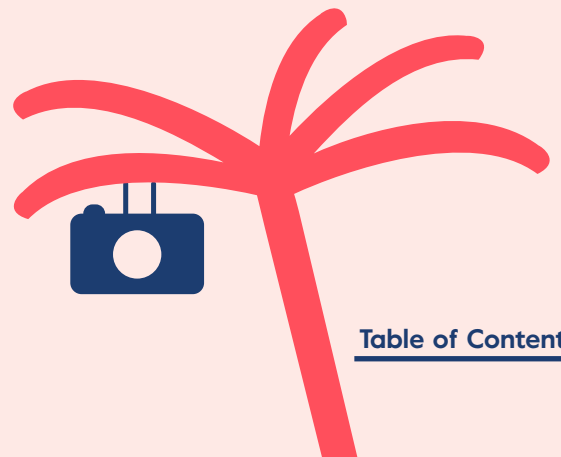
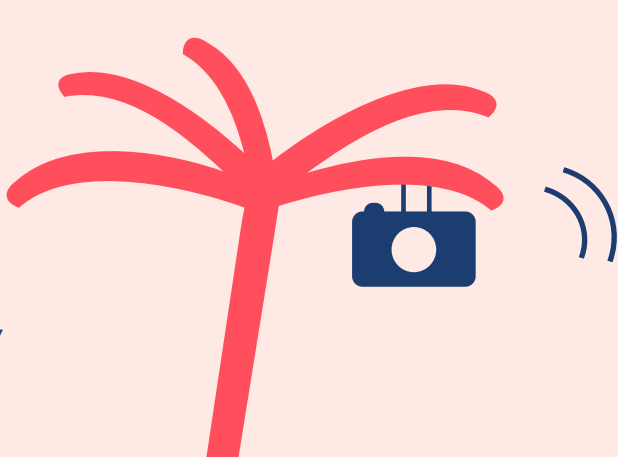
Community Mobile Phone Networks. Some communities are now building their own cellular networks, usually in areas ignored by major carriers. These use new information and communication technologies to facilitate development and community organization. They typically combine regulatory reform, decentralization, community involvement and the application of new technologies to build cellular networks. Rhizomatica is a good example of a successful community mobile phone network.

<https://rhizomatica.org/>

Community Storytelling Using IVR or SMS/MMS Interactive voice response (IVR) and text messaging (SMS or MMS) systems allow anyone with a phone to text, record and report events, news and opinions, or just tell their stories. The messages and recordings are automatically posted to a community website. These allow for groups of people who may not have access to computers or the internet to tell their stories. Vojo and CGNet Swara are good examples of community storytelling and reporting platforms.

<https://vojo.co/>

<http://www.cgnetswara.org/>





A History of Teaching and Learning with Communities



Moving From Consumers to Producers

Written by Jenny Lee

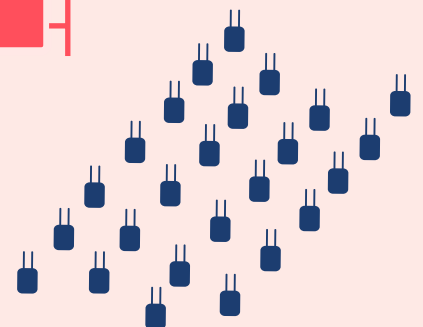
The roots of teaching and learning with communities traces back to the citizenship schools of the Civil Rights Movement.

Through these “schools,” thousands of African-Americans in the South trained tens of thousands of others to read and write so they could pass the literacy tests that had been put in place to prevent them from voting. In this context, the purpose of literacy was to build the power of disenfranchised communities to fundamentally transform the power structures of the country. There was a feedback loop between the process of self-transformation (learning to read) and structural transformation (voting and broad civic engagement).

Detroit community organizers James and Grace Lee Boggs embedded this concept of simultaneous self-transformation and structural transformation into their work for community revitalization in Detroit. Their work has inspired generations of community organizers in education reform, food security, neighborhood safety and economic development to work at the intersection of individual and systemic change. Allied Media Project’s theory of change grows out of this legacy, positioning community media and technology as self-transforming and structure-transforming activities.

Moving from consumer to producer calls for an approach to education that is fundamentally creative and relevant to people’s lives. To build our education model, we looked at historical examples of community education and movement building, such as Theatre of the Oppressed and the citizenship schools of the Civil Rights Movement, reinterpreting their theories in our own words and applying their practices in ways that make sense to our specific context.

We found that the language and many of the processes we used were developed by organizers, artists, and educators who came before us. We are continuing this work, adapting and adding new methods, and evolving what others have started.



Allied Media Project’s theory of change states:

Media-based community organizing is a process of speaking and listening as a community in order to investigate the problems that shape our realities, imagine other realities and then work together to make them real. When we use media in this way, we build new kinds of relationships internally, interpersonally and within our communities. We transform ourselves from consumers of information to producers, from objects within dominant narratives to authors of the transformation of the world.

We Make the Road by Walking

“ ‘Pockets of Hope’: Literacy and Citizenship” from *We Make the Road by Walking: Conversations on Education and Social Change*. Edited by Brenda Bell, John Gaventa, and John Peters. Used by permission of Temple University Press. © 1990 by Temple University. All Rights Reserved.

Chapter 2: Formative Years, pages 67 - 80.

THIRD PARTY: Please talk about Highlander’s citizenship schools and the early literacy work in Recife. What’s striking me is that you were both in different places working with community groups, Paulo working in Recife and Myles working in Johns Island, both finding new ways of doing literacy based on a concept of social change. How did you arrive at that process?

MYLES: In the process of talking about the citizenship schools, I would like not just a comparison but an evaluation of how we went at it. First, we had been having workshops at Highlander in the fifties about the problem of segregation in the south. Highlander always tried to remind people that they are part of the world and they have responsibilities and opportunities to do things outside their own communities. It’s rather amusing in a way, and significant, that the citizenship school idea first was talked about at a workshop on the United Nations.

Esau Jenkins, a black man from Johns Island, South Carolina, came to Highlander with Septima Clark, a schoolteacher who had come to Highlander herself from Charleston, South Carolina. Esau Jenkins said at this international workshop that he thought it was fine to talk about the world but that he had problems at home. His problem was to get help on teaching the people on his island to read well enough to pass the voter registration requirement exam that was given by white registrars, who were very unsympathetic to blacks voting and used the restriction of literacy as a means of keeping blacks from voting. He said he’d been trying to teach people to read as they rode on his bus. He had a bus service about 30 or 40 miles into the city from the island, bringing domestics, factory workers, his black neighbors to work. On the bus he had a captive audience, and he tried to teach them to learn about reading on the trip. He was the recognized leader in that island in terms of problems of the people, and like a lot of black people, he preached every once in awhile.

One of the things Highlander had always done was to say to people: “Highlander’s our base, but if you try to do something and need some help, we’ll respond to your request for help.”

“We won’t go into anybody’s community or organization as an expert, but we will come in and try to help you with your problem.”

So it was in response to his invitation that we went to Johns Island. I decided I’d spend some time with Esau and with Septima and try to learn what I could about Johns Island. I lived down there with Esau for a while, two or three weeks at a time. I would talk to the people at work, fishing and growing rice. They still grew some rice, which they harvested by hand, but most of them—even though they all had little pieces of land—most of them made their living working in the big plantations or in the city. They were dependent on working for somebody else for a living. They spoke Gullah, a mixture of English and African, maybe a little French, and I had to get my ears accustomed to understanding it.

While I was trying to get acquainted, I explored the past efforts for people to get literacy training, get schooling. I found out from Septima, who had taught there, that they’d had very, very poor schools, and I found out from my own investigation that there had been people trying to teach literacy classes on that island for years, since the Civil War. I met two people who told me that they couldn’t get anybody in the island interested in learning to read and write, that they had tried for years. They’d start and drop out, and there was no interest. I found unspent federal money and unspent state money for literacy.

So obviously there was a problem and it was quite simple. Literacy workers were not treating these people with any kind of respect. The kind of programs they were offering was an insult to them. These older people, adults, had to sit in little desks for children. The children laughed and called them “granddaddy longlegs.” So there was a good clue as to what not to do. That started me on a line of thinking that was very simple. How do you treat people with respect? How do you do a program that treats people with respect? I was sure that they would have the motivation. It’s easy enough to get people to want to vote who have never had a right to vote and who have been denied that right, and in a place where there’s mostly black people, to eventually have a majority of the vote.

So the basis of the program was one that would respect people. It became quite obvious that the education would have to be done in an out-of-school setting because the schools were a “granddaddy longlegs” memory. So the first thing to do was to try to find a way to have educational programs outside the schooling system, and the next thing was to find out what kind of people would be good teachers in a school that showed respect. To be on the safe side—although Septima differed with me a little bit about this, and she was a schoolteacher (you might have differed too, Paulo)—we finally decided we wouldn’t have any certified teachers, anybody who had been trained as teachers. Trained teachers would have to be thinking in terms of what they had learned, methodology, and they would identify illiterate adults with illiterate children. They would have a tendency to want to teach the same subject matter in the same way that they taught children.

Then there was the problem of the tendency of white people everywhere to dominate black people. You could eliminate that problem very simply by not having any white people teaching. These conditions for learning were the first things that we agreed on. When I say we, I mean Esau, Septima and me.

The other thing we talked about in advance was *what* the people would learn to read, since they had only a short time to do it. We couldn’t start out with little simple things, simple words, because they had to learn to read in a short period of time a very long, wordy section of the South Carolina law that had words in it

they’d never heard of before, words that most of us had difficulty pronouncing. We had to start closer to where the people had to end up in a short period. That meant that we’d have to find some way for their motivation to enable them to grasp rapidly rather complicated sentences and big words.

Who can we get to teach? Bernice Robinson, a young black woman, Septima’s niece, had been to Highlander and was impressed. She’d worked in New York and other places, but she was back in Charleston. She hadn’t quite finished high school, but she was very bright. She said Highlander is the place we can really learn. “If there’s anything I could ever do to help Highlander, just let me know.”

So we said: “You can help by teaching other people. You’ve got part of a high school education.”

She was way beyond that in her thinking.

“But most of all you care for people. You know how to get along with people and you inspire people. You know you don’t feel superior.”

So she finally reluctantly agreed. For the first time in her life, she thought of herself as teaching others, but she *had* been teaching people things. She had been teaching young people how to sew. She ran a black hairdresser’s establishment, a beauty parlor. But unlike white beauty parlors, a black beauty parlor is a cultural center. It’s a place where people come to talk about things, and in that economy that’s a status position. She was sophisticated in a lot of ways. But her willingness to do that was based on her love for her own people and wanting to be helpful.

Bernice started out without any plans or anything. We wanted her to get acquainted with the situation and let her own thinking come out. I know Septima wanted to give her a lesson plan to start with, and I objected to that and Esau agreed with me. Bernice started by telling learners: “I’m not a teacher. I really don’t know why they wanted me to do this, but I’m here and I’ll learn *with* you. I’ll learn as I go along.” That was her attitude.

After she got started, she called me and asked for a poster, the Declaration of Human Rights, that was up on the wall when she was a student at Highlander to use as

a primer. That was her idea, because she was beginning to understand that she had to challenge these people. Although there were big words, it wasn't *just* big words that they had to learn to read in the South Carolina Constitution. At that time Highlander had a statement of purpose that told what Highlander was about. Bernice thought that had some good ideas about democracy and about citizenship, so she asked for a copy of it too. That was one of the things they learned to read. It was that level of material that she used in her teaching, but mostly it was just getting them to practice writing their names, writing, filling out money orders. They wanted very practical sorts of things, so she built the program around what they wanted, what they asked for.

In the meantime, they were all trying to get the chance to vote because she organized that class of about 25 people into a community organization. It wasn't a literacy class—it was a community organization. They were already talking about what they were going to do when they got to vote. They were talking about using their citizenship to do something, and they named it the Citizenship School, not a literacy school. That helped with the motivation.

She had more people who ended her class than started. Eighty percent of the total number passed our examination. Our examination was for them to go down to the courthouse and register to vote. So when the registration board said they had the right to vote, we said they'd passed the examination. Eighty percent of them were able to do that.

We thought only in terms of one school, and if that worked, maybe we'd do it again right there. Within a week or two, they asked for other schools in other parts of the island, and Bernice ran another school. We hadn't thought beyond what she could do herself. But that time demands were coming in so fast that we decided to let other people do the teaching and not just let Bernice do all the teaching. It was getting beyond our original expectations. So what we did was to have these other teachers apprentice to her. We hadn't organized a system of spreading the citizenship school idea.

Before the third school was over, there was request for a citizenship school by the people in Edisto, the neighboring island, and a request for Daufuskie,

still further south down in Georgia, as well as other requests. We set up a kind of a training program for citizenship school teachers at Highlander. Bernice was the head of it and Septima was an adviser. By that time Septima had been put in charge of directing the organizing of citizenship schools. Bernice selected her own staff to train new teachers. She picked four teachers who had been apprenticed to her, the ones that she thought would be the best to train other people. In other words, from Bernice on, there was nobody who wasn't trained by the people that Bernice trained. So we kept passing on from person to person as much as you can pass on. The only person who had any training in education—the only person with a college education, for example—was Septima, who was the director of the whole program.

That was the framework in which we set up the schools. The program started in January of 1957, and by 1961, there had been over 400 teachers trained, and there'd been over 4,000 learners. The voters in these areas had gone up about 300 percent. It was a success in terms of what it set out to be. We spoke earlier of the idea of Highlander being one in which we dealt with a very few people intensively, and their job was to go back to their communities and multiply what they had learned. Well this was our most successful multiplication of an idea. It spread in all directions because it had a lot of dynamism in it. And as it went along, the original idea that Bernice had developed became only part of the procedures that we used because everybody was adding. Some would come from the teachers, some would come from the learners. Their program was being enriched, and it got more and more effective as it went along. There wasn't a single citizenship school teacher who was connected with Highlander. They weren't on Highlander staff. The only people on the Highlander staff were Septima Clark and Bernice Robinson. The rest of the people were on their own.

Now this program later on got so big that it was bigger than everything else we were doing at Highlander. It was an inexpensive program. We didn't pay teachers. There were no salaries involved. We financed the training but we didn't finance any of the actual teaching—the community was responsible for that. And none of them worked for pay. They were all volunteers, black people teaching black people. That organization became so big, spread so fast, and was

involving so much of our time and attention that we decided we'd do like we had done before. We'd had two or three other programs that we had evolved back in the labor period that got big, and unions took them over. We didn't want to spend time on operating a successful program. Anybody can do that. We'd try to experiment and develop something else. We decided we wanted to spin off the citizenship schools. It was well enough established that somebody else could do it. At that time we brought Andrew Young, who was later U.S. ambassador to the United Nations and is now the mayor of Atlanta, to Highlander to coordinate the spread of this program. Before he got here, Martin Luther King asked if we would work out a program for Southern Christian Leadership Conference. Septima kept telling him about the citizenship school program. At first I didn't think that would necessarily be the best program for them. But later on King got interested in that program, and I got to thinking maybe after all it was the best program for them, and it would certainly solve our problem, getting it off our hands. And after quite a bit of discussion, they decided that they would make that their official program.

When they did that, Andy and Septima decided they would go with the program and help establish it in Southern Christian Leadership Conference. They had a much broader base than we had. By that time the Civil Rights Movement was beginning to get started. It moved from Montgomery to Atlanta, and the idea was spreading. The citizenship schools became the program for the Southern Christian Leadership Conference, and they made adaptations but it stayed pretty much the same program.

Andy Young and other people think of it as kind of basic to the Civil Rights Movement, and I think it's one of the basics, but I think there are others. That program succeeded at a time that no other literacy programs were succeeding in the United States. And at the time, when it cost as much to teach somebody to read and write as it did to send them to Harvard for a year, we were doing it for less than \$100 a person in actual costs. It was done in a three-month period on the average, two long nights a week, and the success stayed about the same in terms of 75, 80 percent of people going through the program being able to register to vote.

Now there's no question it worked. It worked and spread. I'd like to talk about what you did, but I'm interested in what the elements were, how you would see these elements that I've been talking about.

PAULO: Well, first of all, I think that it's interesting for us as educators, to think again and again about the political atmosphere, the social atmosphere, cultural atmosphere in which we work as educators. It was in your experience, we can see that. I don't believe in programs for adult literacy that just are organized by some educators in some place and afterwards are offered to illiterates all over the country. It does not work. I remember that in 1975 there was an international meeting, in Persepolis, sponsored by UNESCO in order to analyze some reports made by UNESCO, evaluations of programs all over the world in adult literacy. I was in that meeting with Soviets, Americans, Latin Americans, Europeans, Asians, the Chinese, Vietnamese and Koreans. One of the conclusions that was put in the final report (Statement of Persepolis, if I'm not mistaken) was that the programs of adult literacy have been efficient in societies in which suffering and change created a special motivation in the people for reading and writing. It was before the Nicaraguan revolution. The Nicaraguan revolution was the last example for that. The program Myles talked about was made without revolution. I say no. I am not making reference exclusively to revolution that gets power. The political connotation, the aspiration of freedom, of creativity was there among the black people. That is, the motivation was there among the people.

The people wanted and needed to read and to write, precisely in order to have more of a possibility to be themselves. That is, the people wanted to write and to read at that time because they knew that they were being prevented from voting because they could not read and write words. Then we can see the coincidence: on one hand, the people needing, wanting; on the other hand, you and the team open to the needs of the people. Because of that, you could start without too much preoccupation concerning methods and techniques and materials because you had the principal ingredient, which was the desire of the people, the political motivation of the people. For the people at that moment, getting reading and writing was really an important instrument and also a sign of respect for them, self-respect.

Another thing that I feel is very important in your explanation and report of this beautiful history is how Bernice multiplied the program—that is, how it was possible, starting from Bernice, to multiply Bernice without courses with lots of theoretical introductions! This is one of the terrible things we do. Sometimes we put 50 people to be trained in how to teach illiterates, and we spend 14 days speaking about different theories and matters, and the teachers cannot experience it. Then the last day we have a lunch together, and the next day the teachers meet the illiterates and don't know how to work. In this case Bernice prepared for future educators by teaching in their presence. It's beautiful because she taught through her example.

One thing is not clear for me. I think that you said two years later there were about 200 teachers. Did all these 200 come to Bernice or did the ones who were trained by Bernice multiply also?

MYLES: After two or three training programs run by Bernice and her staff, the demand became so great. Up to that time there had been no manual written and no methods written, just word of mouth. So many people were asking about it that they decided they'd write something up. It was also decided that we would tape a five-day training session. Bernice didn't tell her teachers what we were going to do with it. She said just go ahead and pay no attention to it. We were afraid that if we told them we were going to turn this into a manual, they'd become self-conscious. We just wanted them to teach the way they had been teaching and the people learning the way they'd been learning. Transcribing the tapes and making the manual was a long tedious job done by Ann Romasco, who was on staff at the time.

Now we figured that would be as authentic as you could get. We made a manual out of what they had already said. No one wrote or spoke anything specifically for the manual. They were saying it to teach and help peers learn, because this was kind of peer teaching. (These people who were the teachers were not any better educated than the people they were teaching. Quite often the people who were learning had a much better education than the people who were teaching, but they were not our citizenship school teachers.) The transcribed material was put together in about a 30-page manual. It was the only thing that was ever written while the program was at Highlander.

After the program went to the SCLC and began spreading so fast, they put out other kinds of manuals and study guides. Septima continued to work on that, but we didn't want to get away from the creativity and the originality that stemmed from Bernice. So as long as it was at Highlander, there wasn't any disconnection. Now when it got away from Highlander, when it got broader, than they not only used manuals but the idea had spread so widely in the South that people were beginning to start citizenship schools of their own. That's when I was really excited. I was down in Mississippi back in the country one day and a woman came up to me and said, "What do you do?" I said, "Well, I'm a teacher." She said, "I'm a teacher, too. I teach at my house. I'm a citizenship school teacher. Do you know what that is?"

I said, "Tell us."

She said: "Well, you know I started this. This is my idea. We're going to make citizens out of people. I'm teaching them to read and write. I went to the fourth grade, and I'm teaching people to read and write. When I get through with this one, some of my neighbors want to start one."

I said, "That's just a wonderful, wonderful idea. Do you think anybody else knows about this idea?"

She said, "No, but they will."

She had taken this idea and internalized it, and here she was starting her own. I was so excited about this. I asked her if she was having any problems of any kind. She said that they didn't have enough pencils and paper and things like that. I gave her ten dollars to buy pencils. She needed no more help than that. She needed no white guy, no money, nobody else to come. All she needed was a little money for pencils, and that was all she needed. Now that was when I felt the program was successful, when it was no longer even part of an organization.

A Paradigm Shift on the Concept of Education

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Chapter 5: The Next American Revolution

In the spring of 2006 Oprah Winfrey devoted two full shows to failing schools. On both shows she was joined by Microsoft billionaire Bill Gates and his wife, Melinda, who have pledged millions of dollars to address problems in education.

"It is going to take activism," Oprah insisted. "We can't just sit passively by and act like it's OK."

She began by exposing the glaring inequities in our public schools, contrasting an inner-city Chicago school that lacks even minimal toilet facilities with a suburban school that enjoys an Olympic-size swimming pool. Again and again she cited dropout figures: One million teenagers drop out every year—not only in the inner city but also across the nation. And she pointed out that the ranks of dropouts include scores of whites. A citizen in Shelbyville, Indiana, described the local, mostly white, state-of-the-art high school as a "dropout factory."

The main reason for our failing schools, Oprah said, is that in 2006 we are still stuck with a 1956 model. Bill Gates called our school system "obsolete."

I agree. But we need a lot more dialogue on what we mean by "obsolete."

By "obsolete" Oprah and the Gateses apparently mean that our schools are falling behind those of other nations in providing the high-level skills needed to compete in today's global economy. For example, Oprah pointed out, inner-city high school seniors study eighth-grade math. By "obsolete" I mean that the teaching and learning methods created for the age of industrialization and entrenched in our public schools no longer work in our postindustrial society.

We need much more than "reform." We need a paradigm shift in our concept of education. We must view the movement to transform our schools as vital to our 21st century humanity as the Civil Rights Movement was to our 20th century humanity. That is how we must

approach our investment in the future. That is how we must demonstrate our love for young people and their creative capacities.

Beyond the Factory Model of Education

Our failing schools have been troubling me for decades.

In the early- to mid-1960s I taught in the Detroit public schools and was heavily involved in the Black Power movement and the campaign for community control of schools. But after the 1967 rebellion, I decided that the problem was not one of power and control. Rather, the time had come for a profound change in our whole concept of education. So, in 1969 I made a speech on education that has been widely reprinted, including within a collection of the *Harvard Educational Review* and also as a pamphlet titled *Education to Govern* that went through three printings.

In that speech, I warned that the youth rebellions breaking out all over the country were challenging us to go beyond community control of schools and begin grappling with fundamental questions about the purpose of education and how children learn.

At the core of the problem is an obsolete factory model of schooling that sorts, tracks, tests and rejects or certifies working-class children as if they were products on an assembly line. The purpose of education, I said, cannot be only to increase the earning power of the individual or to supply workers for the ever-changing slots of the corporate machine.

Children need to be given a sense of the "unique capacity of human beings to shape and create reality in accordance with conscious purposes and plans."

Especially in this age of rapid social and technical change, education “is not something you can make people do in their heads” with the perspective that years from now, eventually, they will be able to get a good job and make a lot of money. Some children may accept this regimen. But in a world where kids and adults watch and hear the same devastating news on TV and radio hour after hour, we can no longer treat children and young people like cogs whose “job” is to ingest basics to fit into the economic machine as workers and consumers. Those who feel most acutely the contradiction between the need for change in their daily lives and the abstractness of school subjects will create so much turmoil inside and outside the school that teachers can’t teach and no one can learn.

That is why I said four decades ago that our schools must be transformed to provide children with ongoing opportunities to exercise their resourcefulness to solve the real problems of their communities.

With younger children emulating older ones and older children reaching younger ones, they can learn to work together rather than competitively and experience the intrinsic consequences of their own actions. Children will be motivated to learn because their hearts, hands and heads are engaged in improving their daily lives.

Since 1969 our neighborhoods in Detroit and other Rust Belt cities have deteriorated far beyond anything that I could possibly have imagined, because our schools have continued to operate on the model created over a century ago to prepare the great majority of working-class kids for jobs on the assembly line. There once was a time when young people could drop out of school in the ninth grade and get a job in the factory, making enough money to get married and raise a family. But as robots have replaced workers on assembly lines and global corporations have been exporting jobs overseas, school dropouts have become learners in a drug economy that has turned our communities into war zones, where we live behind barred windows and triple-locked doors. Metal detectors and security guards

may be able to keep guns and knives out of school buildings, but they cannot keep the chaos that disrupts our communities and the lives of our children out of our classrooms.

In cities all over the country, politicians, school boards and administrators have come up with all sorts of palliatives masked as “reform.” Their mindset is that of controllers and enforcers. Every couple of years, school superintendents have been replaced with new more military-minded ones deemed efficiency experts. Privatization has been tried in some cities. In other cities like Detroit, the state appointed school boards to replace elected ones.

With the advent of Bush’s No Child Left Behind, testing has become more frequent and more punitive, forcing teachers to reach to a sterile and often meaningless test, suppressing the creativity of committed teachers. A lot of parents have gone along because they see no alternative. Their hope is that the enforcers will at least provide an orderly school environment so that their children can get a “quality education,” by which they mean the kind of education that will enable them to get a good job in the corporate structure and escape from our deteriorating neighborhoods. But as the chaos spreads, an increasing number of these parents are sending their children to magnet, charter and private schools, thus guaranteeing that those left behind will be treated little better than prisoners with their teachers serving as little better than wardens.

President Obama has sought to prioritize educational reform by making it a focus of his economic stimulus funding. However, the selection of Arne Duncan as secretary of education means that real change, as Obama said repeatedly during the campaign, will most likely have to come from below. As CEO of Chicago Public Schools, Duncan succeeded in raising test scores slightly, but his approach to education is essentially that of the factory manager.

We need to understand that the “command and control” model has become obsolete in the wake of the information revolution, as Alvin Toffler wrote convincingly in his widely discussed 1980 book, *The Third Wave*. The industrial culture of standardization, specialization, centralization, concentration and maximization, Toffler said, has exhausted itself.

Therefore, in every area of our lives we now have the opportunity and necessity to create new decentralized institutions based on the possibilities opened up by the information revolution, for smaller work units, closer ties between producers and consumers, and greater participation in community life.

These conditions of postindustrial society especially challenge educators to reexamine conventional assumptions and to create a new community-based, person-centered model of education. Schools need to leave behind present methods geared to producing workers for highly repetitive work. They should instead seek to incorporate learning into work, political organizing, community service and recreation. More learning needs to occur outside the classroom. Education should involve real problem solving. Instead of rigid age segregation, young and old should mingle. The years of compulsory education should grow shorter, not longer. Education should be spread out over a lifetime.

But most educators, especially the career bureaucrats of the Bush administration who forced No Child Left Behind down the throats of communities across the nation, are unwilling or unable to accept this challenge. Instead, in the name of "strict accountability," they propose punitive measures to take funds away from low-testing public schools and give them in the form of vouchers to untested private schools. Most Democrats oppose vouchers, but they are just as stuck in the dinosaur factory model.

In recent years, Toffler's views have been confirmed by educators such as Renate and Geoffrey Caine, who project a new paradigm based on the complex, creative and self-correcting potential of the human brain. Every parent, teacher and administrator could benefit from reading their two books, *Making Connections: Teaching and the Human Brain* (1991) and *Education on the Edge of Possibility* (1997), both published by the Association for Supervision and Curriculum Development. They believe that an education that gives children the freedom to exercise their powers creates the kind of socially responsible, visionary and creative young people that we urgently need as change agents in the daily lives of our communities.

Today's schools fail, the Caines explain, because they concentrate only on memorization instead of building on the multiple and complex powers of the human brain.

Among these are the capacity to function on many levels simultaneously, to change in response to others, to keep searching for meaning, to create patterns, to enrich ideas by linking them to emotions and all the senses, to perceive and create at the same time, to be uninhibited by threats (like rewards and punishment), and to be enhanced by challenges and opportunities to make a difference.

The Caines deplore the way that factory-type schools waste this human potential because they ignore the inner and community life of learners and deprive learning of meaningful context. Just as factories have been structured to produce identical/measurable parts, the Caines write, schools are organized to produce graduates who can feed back information on tests—as if the most crucial aspect of education is informational content. They are highly critical of the way schools fragment learning into subject areas while implementing measures of control measures that repress the natural desires of children to learn and constrict naturally active young people within a confined assembly-line environment.

Schooling that denies children and young people the right to exercise these capacities produces individuals who are in a constant state of rebellion. At the same time, the Caines point out that the formal education system widens the gulf between the generations by destroying opportunities for learners to learn from their elders, from their peers and from younger children. These rebellious youth are perceived by the adult world (especially the police) as threats to an orderly society.

We all know kids who are as smart as a whip but who do poorly in school and drop out as soon as they can because they refuse to accept this violence to their humanity. I view the struggle against this obsolete,

hierarchical model of education as a struggle for democracy by and for young people. The factory-type school is based on the profoundly anti-democratic belief that only experts are capable of creating knowledge, which teachers then deliver in the form of information and learners give back on tests. Like workers in the factory, children and young people are denied their full humanity by a system that trains them to survive, consume and produce.

Why do educators still practice the “command and control” model? Because in large measure it became synonymous with education in the United States. The factory model worked fairly well in the first half of the 20th century when this country was pioneering mass production. Its limitations did not become glaring until the 1960s when we began to move toward a post-industrial society, at the same time that young people, through rebellions on campus and in the streets, proclaimed their right to be full learners in deciding this country’s direction.

Since then, our schools have been in continuing crisis because so few educators are able or willing to take the risk of leaving behind the old factory model and creating a new one that meets the human and social needs of young people to be creators of knowledge and of social change. Parents have not been much help because their fears for their children’s survival have led them to stress staying in school to get a job. So millions of young people, coming of age in a new world where information is everywhere and industrial work is disappearing, experience schooling as senseless, a denial of their humanity, and a kind of incarceration. It is because our schools are so wasteful of the creativity of our children that we have become so dependent on Ritalin and are assigning so many children to special ed.

Nevertheless, to keep the multibillion-dollar educational/industrial complex of publishers, administrators, teachers, construction workers and custodians operating, we try to keep young people warehoused in schools for 12 years and more. So half of our inner-city youth routinely drop out or walk out of schools because they are no longer willing to sit passively in classrooms for 12 or more years, receiving and regurgitating information, when all around them the need for change and for creative thinking is so obvious. Having dropped out of school, most of them

have no positive social role to play. So by the hundreds of thousands, they become trapped in petty crime and the drug economy, turning our communities into hoods and ending up in prison, not only breaking up families but creating the largest prison-industrial complex in the world.

At the same time, because of a continuing decline in public school enrollments, each of which represents in Michigan the loss of approximately \$7,000,000 in state funding, our schools are in desperate financial straits. In Detroit, the dropout rate has been steadily increasing. Between 2001 and 2003, we lost about 3,000 learners per year. Between 2003 and 2004, the number doubled to 6,600. Recently, the decline in Detroit public-school enrollment surpassed 9,000 learners a year. As a result, our school system and our city have confronted rising, intractable budget deficits. Roughly 200 have been closed in the past decade, devastating communities as well as learners.

We are not going to solve the crisis of public education with more money, more computers, new buildings or new CEOs. To begin with, we need the incentive that comes from recognizing how many of our children have already left it behind. We also need to go beyond struggling about who’s in charge or who’s to blame and recognize how the economic crisis, the urban crisis and the education crisis are all interconnected. At this point, to develop the minds of our children, we need to provide them with opportunities to discover the intrinsic relationship between effort and results through constructive participation in the life of the community along the lines projected by John Dewey.

I cannot understand why so many undergraduate learners preparing to become teachers have never read or even heard of John Dewey (1859–1952), the American pragmatist whose writings on philosophy led me from the ivory tower to the world of grassroots activism. Dewey was a pioneering educational theorist/activist whose name is still largely synonymous with progressive education.

"The tragic weakness of the present school," Dewey said, "is that it endeavors to prepare future members of the social order in a medium in which the conditions of the social spirit are eminently wanting." He condemned teaching that focuses on "the mere absorption of facts and truths" done as such "an exclusively individual affair that it tends very naturally to pass into selfishness." By contrast, Dewey argued that "where active work is going on, all this is changed" and "a spirit of free communication, of interchange of ideas, [and] of suggestions results."

Because Dewey insisted that education is "a process of living and not a preparation for future living," he called for the school to "represent present life as real and vital to the child as that which he carries on in the home, in the neighborhood or on the playground."

"Our present education," he said, "is highly specialized, one-sided and narrow. It is an education dominated almost entirely by the medieval conception of learning. It is something which appeals for the most part simply to the intellectual aspects of our natures, our desire to learn, to accumulate information, and to get control of the symbols of learning; not to our impulses and tendencies to make, to do, to create, co-produce, whether in the form of utility or of art."

Even the way we organize our classrooms robs children of creativity and initiative.

"Rows of ugly desks placed in geometrical order, crowded together so that there shall be as little moving room as possible ... are all made 'for listening'—for simply studying lessons out of a book is only another kind of listening; it marks the dependency of one mind over another."

This "attitude of listening"—guided by the expectation that the child will take in "certain ready-made materials" that have been prepared by his or her superiors—ultimately promotes "passivity."

"From the standpoint of the child," Dewey concluded, "the great waste in the school comes from his inability to utilize the experience he gets outside the school in any complete and free way within the school itself; while, on the other hand, he is unable to apply in daily life what he is learning in school. That is the isolation of the school—its isolation from life."

While Dewey was challenging the U.S. model of education, Mahatma Gandhi was forced to address the colonial mindset that developed under British rule in India. During the struggle for independence, Gandhi recognized that the educational system was "meant for strengthening and perpetuating the imperialist power in India." It had been designed to supply the next generation of clerks to sign, stamp and file the paperwork to run the British Empire. As a result, most elite Indian learners found manual work "irksome." However, he retorted, the development of a true intellect necessitated the balanced and "harmonious growth of body, mind and soul."

"That is why we give manual labour the central place in our curriculum of training here," Gandhi remarked in a teachers' training camp. "An intellect that is developed through the medium of socially useful labour will be an instrument for service and will not easily be led astray nor fall into devious paths."

Against the system of education set up to serve British interests, Gandhi proposed a system of popular education to serve the Indian people. He especially focused on the villages, where the vast majority of the people lived and were left untouched, seen only as suppliers of cheap raw materials for the British or as potential markets for the finished goods the British wanted to sell them. Teach people what will truly help them, he said, not to become servants and bureaucrats for the Empire but to aid them in all the little things of village life. Education, he said, should be of the heart, the hand and the head. It should give people an understanding of themselves and where they stand in the world and, from there, their obligations toward their neighbor. The three main resources for this popular education, he said, are the community, the natural environment and the world environment.

Although Dewey and Gandhi were two of the great thinkers of their time, their passings in the mid-20th century precluded their witnessing the new social movements of the 1960s and developing a response to the intensified crises of our inner cities. That is why I was fortunate to come into contact with Paulo Freire's ideas in 1970, when my late husband, Jimmy Boggs, and I were struggling to clarify the distinction between rebellion and revolution in the wake of the urban explosions of 1967 and 1968.

Freire was born in 1921 and died in 1997, before the dawn of the new millennium. His ideas and actions have reverberated with teachers and grassroots organizers around the world, and have particularly helped to reshape the political landscape of his native Brazil. The power of Freire's ideas is always with me. Whenever I am evaluating a revolutionary strategy or trying to devise one, I find myself recalling his insights. For example, people "cannot enter the struggle as objects in order later to become human beings," or "The future isn't something hidden in a corner. The future is something we build in the present."

I first encountered Freire's writings through a leaflet called *Cultural Action for Freedom*. In this pamphlet, he used the phrase "naive transitivity" to describe what we and other movement activists in the 1960s were calling "rebellion." For Freire, it was the stage when the masses, conscious that their oppression is rooted in objective conditions, "become anxious for freedom, anxious to overcome the silence in which they have always existed." Freire was very clear, as were we, that this breaking of silence was not just a riot. Indeed, the masses were seeking to make their historical presence felt. He was equally clear, as were we, that it was not yet revolution because revolutions are made by people (as distinguished from masses) who have assumed "the role of subject in the precarious adventure of transforming and recreating the world. They are not just denouncing but also announcing a new positive." Or as we put it in *Revolution and Evolution in the Twentieth Century*, "a rebellion disrupts the society," but "a revolution ... begins with projecting the notion of a more human, human being," one "who is more advanced in the qualities which only human beings have—creativity, consciousness and self-consciousness, a sense of political and social responsibility."

Soon thereafter, I read Freire's *Pedagogy of the Oppressed* and was delighted to discover that his ideas of education for freedom, as education that not only makes the masses conscious of their oppression but engages them in struggles to transform themselves and their world, were very close to those that I had been putting forward. In this landmark work, Freire critiqued the bourgeois "banking method" of education, in which learners are expected to memorize the "truths" of the dominant society—that is, "deposit" information in their head, then "withdraw" it when required for

tests, jobs and other demands by overseers. Instead, Freire argued that critical thinking can develop only when questions are posed as problems. This problem-posing method provides no automatic "correct" answer. By contrast, learners must discover their own understanding of the truth by developing a heightened awareness of their situation.

Freire's revolutionary method of education has also transformed the way we approach political organizing and struggle, for as he maintained, we must view making revolution as an inherently educational process.

Freire argued that revolutionary work must transform the oppressed from passive victims to agents of history, seeking the pursuit of fuller humanity. Thus, the emphasis is on people taking control of their own destiny—"self-determination" in the truest sense of the word. Transforming relations means that revolution is not about the oppressed switching places with the oppressors, nor is it about the "have-nots" acquiring the material possessions of the "haves." It is about overcoming the "dehumanization" that has been fostered by the commodification of everything under capitalism and building more democratic, just and nourishing modes of relating to people.

Critical of the Marxist-Leninist and nationalist parties that had led most of the anti-capitalist and anti-colonial movements around the world, Freire insisted that what was needed to revolutionize society was not a narrow focus on seizing state power but a cultural revolution in the form of a continuous struggle to transform human relations.

Today, in the United States, if we substitute our cities for the villages of Gandhi's India or the favelas of Freire's Brazil, we are at a similar crossroads. Our educational system has been set up to supply the next generation of technicians and bureaucrats for the global economy, an economy that is fundamentally undemocratic because it destroys our communities,

robs us of control over our daily lives, and reduces us to passive consumers. Instead of viewing the purpose of education as giving learners the means for upward mobility or helping the United States to compete in the world market, we need to recognize that the aptitudes and attitudes of people with BA's, BS's, MBA's and PhD's bear a lot of the responsibility for our planetary and social problems. Formal education bears a large part of the responsibility for our present crisis because it produces morally sterile technicians who have more know-how than know. At a time when we desperately need to heal the Earth and build durable economies and healthy communities, too many of our schools and universities are stuck in the processes and practices used to industrialize the Earth in the nineteenth and twentieth centuries.

We can't change the whole system overnight. But we need to know what we would put in its place, and we can take advantage of the present crisis to begin working to create new models with the teachers, principals and parents all over the city who have given themselves permission to think differently from the powers that be. To achieve the miracle that is now needed to transform our schools into places of learning, we need to tap into the creative energies of our children and our teachers.

In this connection, we have much to learn from the struggles in Alabama and Mississippi in the early 1960s.

In the spring of 1963, the Southern Christian Leadership Conference led by Dr. King launched a "fill the jails" campaign to desegregate downtown department stores and schools in Birmingham. But few local blacks were coming forward. Black adults were afraid of losing their jobs, local black preachers were reluctant to accept the leadership of an "outsider," and city police commissioner Bull Connor had everyone intimidated. Facing a major defeat, King was persuaded by his aide, James Bevel, to allow any child old enough to belong to a church to march. So on D-day, May 2, before the eyes of the whole nation, thousands of schoolchildren, many of them first-graders, joined the movement and were beaten, fire-hosed, attacked by police dogs, and herded off to jail in paddy wagons and school buses. The result was what has been called the "Children's Miracle." Inspired and shamed into action, thousands of adults rushed to join the movement. All over the

country rallies were called to express outrage against Bull Connor's brutality. Locally, the power structure was forced to desegregate lunch counters and dressing rooms in downtown stores, hire blacks to work downtown, and begin desegregating the schools. Nationally, the Kennedy administration, which had been trying not to alienate white Dixiecrat voters, was forced to begin drafting civil rights legislation as the only way to forestall more Birmingham.

The next year, as part of Mississippi Freedom Summer, activists created Freedom Schools because the existing school system (like ours today) had been organized to produce subjects, not citizens. People in the community, both children and adults, needed to be empowered to exercise their civil and voting rights. A mental revolution was needed. To bring it about, reading, writing and speaking skills were taught through discussions of black history, the power structure and building a movement. Everyone took this revolutionary civics course, then chose from more academic subjects such as algebra and chemistry. All over Mississippi, in church basements and parish halls, on shady lawns and in abandoned buildings, volunteer teachers empowered thousands of children and adults through this community curriculum.

The Freedom Schools of 1964 demonstrated that when education involves young people in making community changes that matter to them, when it gives meaning to their lives in the present instead of preparing them only to make a living in the future, young people begin to believe in themselves and to dream of the future. As they engage in these meaningful activities, they also begin expressing themselves in meaningful language that is appropriate to the activities in which they are engaged. Thus, the most popular subjects among Mississippi's Freedom Schoolers were foreign languages, poetry and drama. Thus, Detroit Summer has given birth to some remarkable young poets who have created year-round poetry workshops for social change; and a media center, where young people are exploring new ways of creating community through new ways of meaningful communication.

ACTIVITY: Drawing Connections

What struck you the most when reading these articles?

What is unique or important about how these writers think about education?

How are these ideas different from how our current public education system operates?

What are the concrete approaches to teaching that these writers offer?

How are these ideas about education relevant beyond formal schools?

In what ways has the citizenship schools model influenced social justice movements?

What Is Pop-Ed (Popular Education)?

Introduction to Popular Education

We've learned from Grace, Myles and Paulo that *the way in which we teach* along with who is teaching has great impact on how people learn. In the 60s it was the inability to read that kept people from the ability to shape the future they wanted to see. Today, we live in an era when technology is interwoven with government, healthcare, social services and education. Digital literacy is essential for people to access essential life needs. It is important to build the digital capacity of neighborhoods as cities shift toward "smart city" infrastructures. The more people know about the technology around them, the more they will be able to participate in shaping their environment.

Popular education as a teaching methodology came from the context of literacy education for the poor and politically disempowered. It is different from formal education (in schools, for example) and informal education (learning by living) in that it is a process which aims to empower people who feel marginalized socially and politically to take control of their own learning and to create social change.

It is a movement-building model that has helped us see education as creating spaces for communities to come together in order to analyze problems, collectively imagine solutions, and build the skills and knowledge required to implement visions. Learners and instructors engage in complex and creative problem solving in order to foster the leadership they need.

Teachers and learners are not two distinct groups—rather, everyone teaches and everyone learns! Learners should be able to make decisions about what they are learning and how the learning process takes place.

Facilitation plays an important role in teaching through popular education so that new ideas arise and progress, and that content stays relevant to learners. The idea is that we can't teach another person, but we can facilitate another's learning and help each other along the learning path.

The learning process starts with identifying and describing everyone's own personal experience, and that knowledge is built upon through various activities done in groups. After the activity, a debriefing process allows us to analyze our situation together, seeing links between our own experience and historical and global processes in order to get the "big picture." Through the generation of this new knowledge, we're able to reflect more profoundly about ourselves and how we fit into the world. This new understanding of society is a preparation to actively work toward social change. In fact, in popular education, the educational process isn't considered to be complete without action on what is learned, whether on a personal or political level.

Popular Education In the Classroom

Popular education is essential in developing new leadership to build a bottom-up movement for fundamental social change, justice and equality. In order to achieve this social change, we must understand the art of teaching popular education, or its pedagogy. This section identifies the basics of popular education and shares some ideas and examples of what it looks like in practice.

Pedagogy is the art, or science, of teaching. It is the study and practice of how best to teach.

Paulo Freire referred to his method of teaching people as “critical pedagogy.”

Critical pedagogy is the educational philosophy that supports learners’ self-determination. It connects knowledge to power and the ability to take constructive action. It recognizes teaching and learning as a continuous process of “unlearning,” “learning” and “relearning.” It involves “reflection” and “evaluation” and recognizes the impact that these processes can have on learners—in particular, learners who have historically been and continue to be disenfranchised by “traditional schooling.”

To practice critical pedagogy in the classroom, we have to get on the same page about our values before designing a program and curriculum and planning lessons. From there we can work backwards, building an arc of learning that embodies popular education pedagogy. Below are values to keep in mind when designing a popular education project.

1. Respond to a need

That means your technology projects should not be in search of a problem. A network should not be the goal, but a means to an end. It should be clear that the technology projects serve a critical need articulated by the people most impacted. It is easy for people to get caught up in new technology and never get to the point where the technology is serving its intended function.

2. Have the learners drive the process

Technology education should be influenced by the people it intends to serve. Too often educators initiate curriculum to help bridge a gap without thinking about how people will use this information. Educators can also act as facilitators, providing expertise but more importantly bringing the expert out in people.

3. Start your curriculum-writing process with an open and participatory community meeting

That way, the curriculum you write is directly connected to what people need and want to learn. In doing this you are also simultaneously recruiting people to your program. Shared ownership and responsibility are best built from the first moments of a project.

4. Honor where people are coming from by honoring where people are and what has led them to the place they are today

This can be done by sharing and describing our lives, experiences and problems, and how we feel about them. Make the content more accessible by having people participate in dialogues and activities that are fun, including cultural arts such as drama, drawing, music, storytelling, poetry and video.

5. Focus on the process as much as the end result

You can do that by creating a culture of reflection. Through dialogue and reflection, we can encourage people to collective action. Involve your learners in the decision-making process, and make sure they are becoming leaders or experts. When learners become teachers, your project will be more sustainable.

6. Share history and foster critical thinking

When we share our experience within the context of history, we can understand where we have come from and where we are going. Don’t just teach information—give learners an opportunity to critically analyze their experiences; examine the immediate causes of problems; and discover the deeper root causes in the structures of the economy, political institutions and culture.

7. Be strategic

Having learners work on what is most pressing to them allows for developing a plan for short-term actions to address the immediate causes of our problems, and long-term movement building to address the root causes of our problems.

8. Be egalitarian

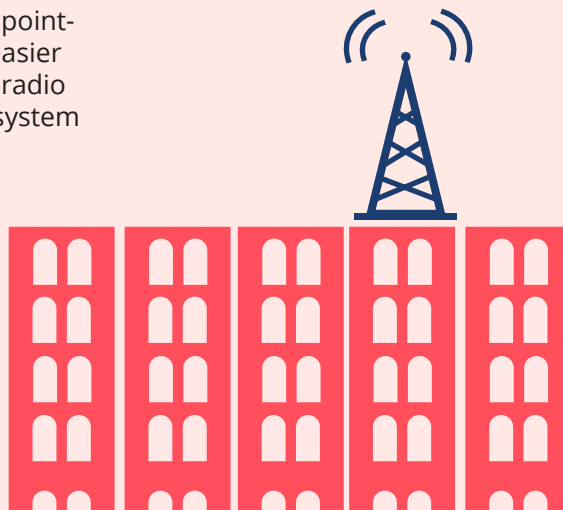
Everyone should be treated equal. All of us have knowledge to share and teach. All of us are listeners and learners, creating new knowledge and relationships of trust as we build for our future. Create a space that celebrates difference, weirdness and out-of-the-box norms so that all can feel comfortable in using their heads for analysis, reflection and consciousness; their hearts for feeling and visioning; and their feet for collective action for the short-term and the long haul.

9. Foster relationships

We are in relation to all people, including those of different ethnic groups and nationalities, social classes, ages, genders, sexualities and abilities. When we can see these connections, we can create a world that includes all of our perspectives. One way to do this is to invite kids and elders to everything. Also, involve other groups and organizations even if they seem unrelated.

10. Choose the simplest solution and embrace the analog

Sometimes, the best solution might even be a non-tech one. For example, a lot of energy in community wireless has been dedicated to creating open-source mesh firmware; however, in some cases a simple point-to-multipoint network will be more resilient and easier for people to understand. Similarly, a community radio station, outdoor bulletin board or two-way radio system may be better.



Digital Stewards Pedagogical Framework

Vision

Communication is a fundamental human right. The Digital Stewards Program envisions a future where all people have equal access to using and developing the tools and infrastructure necessary to communicate with anyone, at any time. Digital Stewards help maintain a harmonious, healthy place for technology in our relationships with each other and communities.

Goal

The goal of the Digital Stewards program is to foster and train individuals to support and grow the digital resources in their communities. Through the practice of common ownership, environmental and digital justice, openness, and skill building - Digital Stewards strive to develop a learning community that strengthens relationships among people, and between people and technology. Through computer center technical support, community networks, electronics recycling, and other neighborhood-centered projects, Digital Stewards maintain a harmonious relationship between people and technology in communities.

Curriculum Summary

Digital Stewards build upon already-existing digital and social resources within Detroit communities, such as public computer centers, block clubs, and community organizing initiatives. They learn how to cultivate this ecosystem, adding in their new capacity and technical skill to grow and sustain a community wireless network.

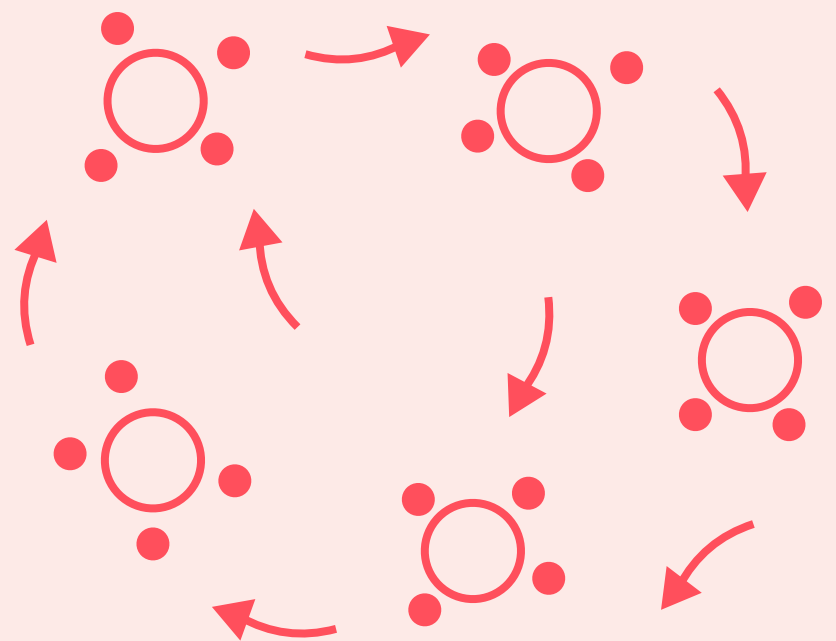
Digital Stewards training covers the process for installing and maintaining Community Wireless Networks in Detroit. It begins with the background and theory on how these networks work, and how they can form another digital layer on top of our existing neighborhood and community social networks then moves into community organizing, digital asset mapping, ending with budgeting the cost and revenue for each wireless project.

Digital Stewards Popular Education Pedagogy

Digital Stewards has been shaped from our own experience doing media-based organizing as well as the foundation that aesthetic education and critical pedagogy have provided us. Some people think of pedagogy as the science of teaching. Others describe it as the art of teaching. Together these metaphors have informed Digital Stewards instructors on ways to think about the systems necessary for effectively organizing a curriculum, the creativity needed for planning engaging lessons, the intentionality and the training required for being the kind of teachers they want to be. Critical pedagogy is recognizing and practicing education as a continuous process of unlearning and relearning, acknowledging how learners may have been oppressed by the very tools and systems they're using. This makes it an especially useful framework for media & technology education. Digital Stewards emphasizes reflection and evaluation so as to shift media/technology from inaccessible systems to *transparent and do-able processes*, especially for learners who have historically, and continue to be, disenfranchised by traditional schooling.

As technology is demystified and made accessible through games, metaphors, and focusing on its use to support it becomes possible for ordinary people to rediscover and validate their own capacity for becoming producers, creators, educators, and leaders, rather than relying on "experts". Within the Digital Stewards model, collaborative media & technology education gives people the opportunity to engage, on their own terms, in a learning process where they use all available resources, including each other, to transform themselves as well as empower their own communities.

How To Be a Great Facilitator



Facilitation Tips

Popular education is all about facilitating learning through hands-on participatory processes. Good facilitation can create a dynamic learning space where learners are engaged in what they are learning. This section offers some tips and tactics on how to incorporate facilitation into your educational practices.

Lead discussions, but don't dominate

You don't have to be an expert at a topic to facilitate it. The more you know the more you can support people in making connections. When facilitating a conversation, the facilitator needs to know enough about the subject to ask good questions that move the conversation and get people on the same page of understanding.

Hold space

Holding space is the ability to shift and shape conversations by not only being aware of the subject, but of the emotions in the space. The level of safety people feel when they are in a space together can affect how people then relate to one another and learn. Because learning is such a vulnerable action it can be tough and not always joyful. When conversations get rough or anger and frustration arise, it is important to be able to quickly identify what is happening and shift the people into a more productive place.

Ask essential questions

Essential questions are open-ended questions that frame an idea and allow people to investigate multiple angles of a problem. When trying to probe conversation and thought, you want to stay away from questions that lead to specific answers. The process of creating essential questions is also an amazing collaborative learning tool as it helps focus energy and facilitate deeper thought. Learning can occur in both processes of identifying and investigating questions, making essential questions a valuable tool in teaching and learning.

Get everyone on the same page

What are the guiding norms of the community with whom you are facilitating a discussion? Create the time and space that honors the voices of individuals as people and members of a group through check-ins or icebreakers that give people a chance to connect in a fundamentally human way.

Observe

Become a guide on the learning path with the group. By observing and reflecting while facilitating learning, you can support the group by knowing what contributions you need to make to assist learners in arriving at a turning point. If you notice only a few people are understanding something, step back a bit before moving on. Meet people where they are.

Be flexible

Be ready for nonlinear discussion. People may go around and around, telling personal stories that may take a while but are inspiring and thoughtful. People may take a different direction on their own, or they may sit back and relax and want to be taught information in a more traditional way through lectures and talks. All ways of learning are great, as long as learning is occurring. So be prepared to switch things up or go off the books.

Create balance

Effective facilitation balances the challenging and supporting of others. Some learn faster than others, some learn louder than others. Facilitating learning strikes a balance of meeting people where they are and shifting them to a way of learning that also respects the group. Make sure there is a balance of voices heard and attention given to all learners in the room.

Permit silence

Arguably the hardest thing for a facilitator is to permit silence. It is not your job to fill “dead air.” Silence is not always to be interpreted as such. In fact, within the minds of learners, the thoughts may be quite loud. Good facilitators make sure that all participants are involved. Those who are frequently silent need to be asked what their opinion is, while maintaining respect for their silence.

Challenge learners

Get them to think differently and explore other options. This is not confrontational, but rather it provides new perspectives to explore.

Make connections

Connect ideas for learners, and help them connect with each other. That’s where meaning begins to emerge. On particularly difficult topics, the connection may take longer for some. You will learn to recognize when people begin to “get it” and that is when you make the connection in partnership with the participant.

Tips for Building a Pop-Ed Classroom

Learning occurs when an individual is confident and comfortable with her or his peers, instructor and environment. We all approach learning in different ways and require different methods of teaching to retain information. It is hard to meet everyone's needs. Learning spaces should be constructed in a thoughtful and intentional way that promotes collaboration and creativity. Here are a few things to keep in mind when setting up a learning space.

Circles are better than lines

Because of our learning experiences growing up, it is easy to revert to setting up a traditional classroom where learners are in rows and the instructor is at the front of the room. This approach sets up a hierarchy in a learning space, which gives the teacher all the power to distribute information. To avoid this hierarchy, it's best to set up a space that puts the instructor on the same level as the learners. Circular formations are a great solution. Circular formations give learners even access to the instructor and encourage learners to interact with each other. Dialogue can occur because people are facing each other. When sitting in rows, learners are forced to see each other's backs, giving the front row the most access to the instructor. When learners have their backs to each other, there is less of a chance that peer-to-peer learning will occur. Circular spaces promote community and equal learning opportunities.

Make spaces within your space

If multiple subjects are being taught in your learning space, your classroom should reflect that. It is often too easy to set up computers and a dry erase board and call it a classroom. Even though computers are a great learning tool, they should not take up the whole space. Leave room for learners to read, write, brainstorm and talk with each other. One way of doing this is by setting up stations. If you have a computer lab leave a few tables computer-free for folks to work on. If you are teaching subjects like graphic design that require some sketching, computing, printing and maybe even silk-

screening, set up stations for each part of the process. If you do not have room for this, it might be good to invest in modular furniture or furniture that can change shape or simply roll around. This allows you to easily set up an environment that accommodates what you're teaching.

Foster a stimulating environment

Learning spaces should be fun and interactive! When a participant walks into a learning space he or she should feel like they are at home, not in an institution. Stimulating visuals and comfortable furniture can help create an environment that learners look forward to attending. Support your local artist by displaying their work in your learning center or create a workshop where your learners create artwork for the space. If your work is about environmental justice, have your learners create a poster campaign and transform your learning center into a gallery that displays participants' work. People have a sense of ownership of the space when they see their work up, which ultimately leads to the desire to be fully present and active.

Tips for Managing a Diverse Range of Learners

Technology can be intimidating to learn, especially to those who are new to it altogether. You will want to design your learning activities and learning spaces that make people feel comfortable and curious to learn. The time in which people are able to feel comfortable with new knowledge will vary—some may get it really fast and want to move on quickly, while others will want to dig in and take their time. You may also have learners that would rather learn on their own and will ignore you while you teach. The classroom can be confusing to new educators, so we've assembled some tips when managing a room of diverse learners.

Show and play

People learn quickly and deeply when they can experience the knowledge that was just given to them. We suggest a “show and play” method. This means that you first “show” something, then let folks “play” around with what you've just shown them before you move on to a new skill or subject. This will also help you manage people who take their time or move quickly by giving you more opportunities to have one-on-one time with learners.

Routines, routines, routines!

Routines help learners relax and take ownership of their learning space while giving you a clear structure to work with. Using the example above of “show and play,” if learners know when it is time to learn new tech they will always have at least 10 minutes to play or explore after you show them a new skill, and they will get the hang of that routine and shape that time the way they need. Routines are great classroom management tools that put the learners in the driver's seat. If learners enjoy the routine, you will spend less time facilitating logistics and more time teaching and building relationships with your students.

Create a step-by-step guides for teaching skills

Teaching technical skills can be tricky if your class is learning at different speeds. By giving learners a step-by-step guide, learners have the choice of learning at their own pace or following the pace you set as the teacher. Including frequently asked questions will give learners opportunities to discover on their own, giving you time to explore even more possibilities of using the technical skill you are teaching. Couple this with the “show and play” method, and your classroom will be managing itself!

Peer-to-peer learning

Those who learn faster than others can create a strange dynamic, putting pressure on other learners to hurry up if they are left waiting for the next step. This dynamic can change the momentum of learning, halting progress and leaving people frustrated with each other. If someone understands what you are showing them, you can quickly approach them and say, “Hey, you're good at this! Do you want to help me teach this?”

They might be shy at first, so reassure them that they are totally capable of teaching, and send them to someone who is having trouble understanding the content. Learners put in positions of teaching may reveal new ways to present the content. Now not only do you have a helper—you have access to a new perspective which can enrich the ways you teach. Peer-to-peer learning is an extremely effective way for learners to retain information.

When a participant can relate to the person who is giving them information, it tends to feel more accessible. It's a beautiful thing when information spreads naturally.



Avoid at all costs getting “too technical”

Technical jargon makes technology inaccessible because you may need previous experience to understand it. If you are teaching something that complex, do your best to explain the technical aspects through metaphors. For example, if you are teaching the ways in which sound waves travel, try to explain them as ocean waves or a common and familiar simile. Allowing learners to approach technology free of rules and fixed language means they are more likely to explore and find out ways technology can work for them (opposed to making them work for technology).



Do a test run

If you are demonstrating something new or something you haven't done before, it's helpful to do a small test run before your class. There will always be technical problems, and the more you can prepare for that, the better. To avoid losing the momentum of learning because of a technical difficulty, a test run will allow you to troubleshoot your setup, make sure your guides and explanations make sense and gather feedback from a forgiving audience. It also creates an opportunity for you to make sure you have all of the supplies you need to make your workshop as awesome as possible. You can ask friends, family or neighbors to get involved in your test run.



What did we learn?

Just like ecosystems in the natural world (of which we are a part, remember!), diversity is the key to success in a learning environment. Understanding the different ways people perceive and process information and taking into account the different physical and emotional needs of learners are key to setting up a positive and fruitful learning experience.

As an educator facilitating learning, the qualities and practices that will allow you to lead and support learners effectively represent **flexibility**. This is the ability to adapt your plans and ideas, show attentiveness to learners' energy and experience, and display genuine respect and interest in the knowledge and abilities of the learners.

Building and nurturing authentic relationships of trust and appreciation is the most essential aspect of transformative education.




THINK ABOUT IT ...

What shapes and influences the way people learn?

How can designing a physical space for a lesson or workshop impact the experience of the learners?

Which one of these facilitation tips do you find most challenging to implement, and why?

What is one idea you have for incorporating some of these facilitation tips into your practice?



Facilitation Strategies I:

Discussion Formats

Good facilitation is often reflected in crowd participation. In many cases the one person most comfortable with speaking in public is the loudest at meetings, overshadowing others who may have equally as valuable ideas but are too shy to share them. Below we have assembled discussion formats that can ensure participation from the majority of your group.

Question-Led Large Group Discussions (about 20 mins. per question)

- A framing question is written on the wall.
- Facilitator guides group discussion, beginning with the framing question.
- Facilitator guides group responses to other questions that might spin off.

* This works best when the facilitator is able to synthesize people's thoughts and relate them to each other and then back to the big question being asked.

Silent Consultation (about 30 mins. per consultation)

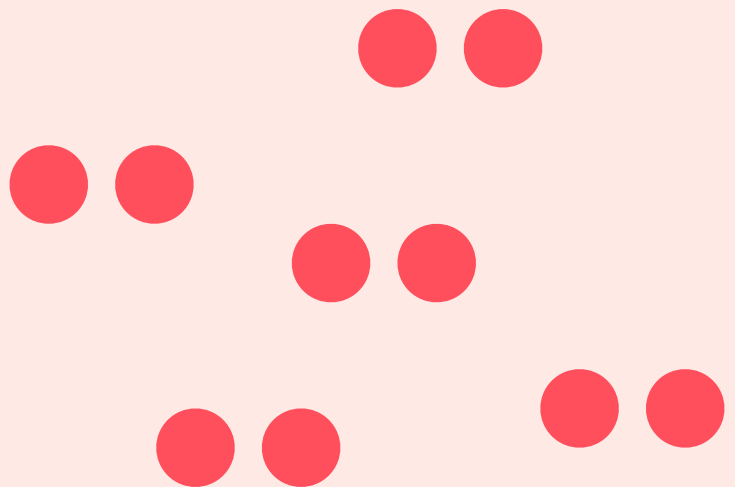
- Identify major questions that need to be discussed or explored.
- Create four questions that encompass the main ideas that need to be discussed.
- Write questions on a large sheet of paper and place them in four areas around the room.
- Walk around the room and write responses/ideas, responding to the questions.
- Have the large group break up into four groups, one for each question that was asked.
- Discuss the responses to the questions. Try to summarize, merging similar ideas.
- Have each small group share their summary to the larger group.
- Facilitate the large group in figuring out next steps with each question.

* This is a great discussion format for breaking complex ideas or problems into manageable chunks of work that can be distributed amongst the group. This also is a great way to generate ideas for projects that include several perspectives.

Think – Pair – Share (about 20 mins.)

- Create a prompt that is connected to the goal of the meeting.
- Ask individuals to write a response to that prompt.
- Have the group break up into pairs to share their responses.
- Regroup and have each group share main points of their discussion.
- Ask people to discuss what ideas stuck out and why.

* This format is a great way to get people who are unfamiliar with each other to work together. This also ensures that each member of the meeting is thinking and participating, because everyone is asked to share their ideas with someone else in the group.



Breakout Groups with Gallery Walk (about 45 mins.)

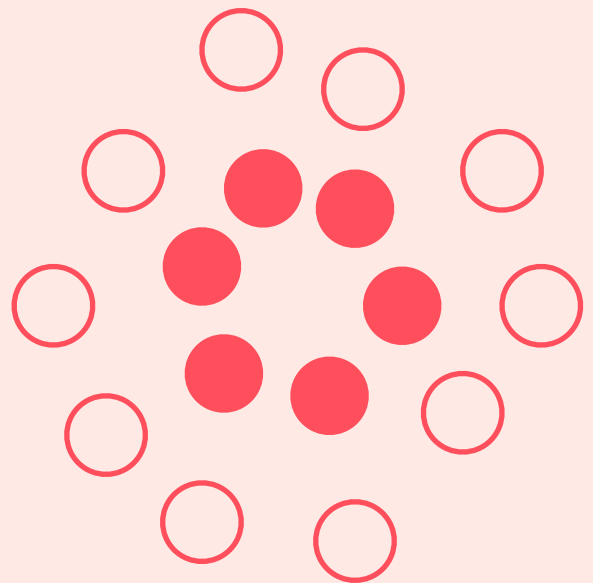
- Divide the group into smaller groups to discuss responses to a reading or a question.
- Each group chooses how to represent their reflections/questions/responses on large paper (i.e. notes, timelines, flowcharts, images, quotes).
- Each group posts their large paper on the wall.
- Groups rotate throughout the room in a “gallery walk,” viewing others’ responses.
- The larger group reflects upon what they notice.

* This is another great way to have groups with multiple perspectives share their ideas while getting to know each other. Having groups create images, etc. to a reading or question often expands people’s thinking and results in unique and innovative ideas.

Fishbowl Discussion (about 30 mins.)

- A few volunteers from the group form a circle in the middle of the room.
- The rest of the group forms a larger circle around them.
- Inner circle discusses responses to a particular reading or question.
- Choose one of the following next steps:
 - Individuals who form the outer circle may “tap into” the inner circle when they want to make comments.
 - After a certain amount of time, outer circle and inner circle switch.
 - Inner circle discussion is brought to a close and the outer circle reflects on and responds to the inner circle’s discussion.

* This format is a good way to have in-depth, focused conversations.



Facilitation Strategies 2: Utilizing Creative Expression

When working with diverse groups of people you should expect a diverse range of ways people give and receive information. Creative expression like writing, collaging or visualizing goals are great ways to break through various communication differences, which allows learners to customize how they participate. Below are a few facilitation processes that use creative expression and build relationships.

Free Writing (2 - 5 mins. per topic)

- Give learners a set amount of time to write about a question or topic.
- Learners should write whatever comes to mind, without any formal structure.
- Have learners individually review what they wrote, and circle or underline main points or big ideas that came out in their free write.
- Have learners share the what they circled or underlined with the larger group.

Collaging (about 30 mins.)

- Gather a set of magazines or old newspapers for learners to cut up.
- Ask learners to create a collage with elements they find in magazines or newspapers that represents their ideas about a project or question you are working on. (You can break people up into groups or do this individually.)
- Have learners share their collages and explain what they represent.

Skits/Mini Plays (about 60 mins.)

- Divide learners into groups or have them self-select into groups of three to four people.
- Create a prompt, question or topic for learners to create a short play with.
- Give learners at least 20-30 minutes to create a script and come up with props.
- Have each group share its skit.
- After each skit, have a conversation about what ideas were presented.

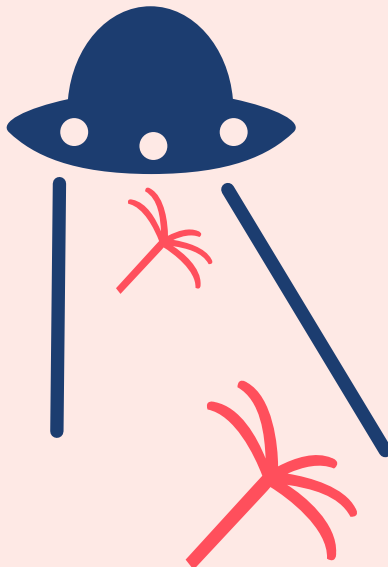
Facilitation Strategies 3: Creative Problem-Solving

Below are a handful of activities to help your group work collaboratively to establish a shared vision for your project, analyze issues impacting them, and generate solutions collectively.

Working from the Future (60 - 90 mins.)

- Create a prompt about the future for learners to write about. Example: It is the year 2040 and you are sitting at a park in your neighborhood. How do you see (X) having an impact on the environment?
- Give learners five minutes to free-write what they see.
- Have each person share their vision and record the main ideas on a large piece of paper in a central location.
- Once everyone has shared, ask the group to brainstorm what needs to happen in order to make these visions come true. Create a list of ideas.
- From this list of ideas have a discussion about what needs to happen in the project to work toward those visions.
- Refine your list of ideas into a set of tangible goals for that project that reflect the learners' vision.

* This is a great first activity with a group that is just starting to work together.



Creating a Shared Vision Statement (about 60 mins.)

- Have each participant write responses to the following prompts as an individual free write, giving each prompt 3–5 minutes.

We are:
Working toward:
In this way:
To achieve this:

- Have learners review what they wrote and then use sticky notes to write down words, phrases or sentences that stand out to them.
- Have learners place their sticky notes on the wall.
- As a large group, categorize the sticky notes, sorting them into groups that relate to each other. Similar ideas should stay together. If themes emerge, name them.
- As a large group, discuss the themes and groupings that have emerged.
- Together, begin to collaboratively craft sentences that encompass the emerged themes. Each sentence should be representative of the skills and desired outcomes of the group.

World Café (60 - 90 mins. for groups of 15 or more)

The World Café is a method for creating a living network of collaborative dialogue around questions that matter in real-life situations. It is a provocative metaphor—as we create our lives, our organizations and our communities, we are, in effect, moving among “table conversations” at the World Café.

Assumptions of World Café:

- The knowledge and wisdom we need is present and accessible.
- Collective insight evolves from honoring unique contributions, connecting ideas, listening into the middle, and noticing deeper themes and questions.
- The intelligence emerges as the system connects to itself in diverse and creative ways.

* World Café is a great way of fostering interaction and dialogue with both large and small groups. It is particularly effective in surfacing the collective wisdom of large groups of diverse people. The café format is very flexible and adapts to many different purposes—information sharing, relationship building, deep reflection exploration and action planning.

When planning a café, make sure to leave ample time for both moving through the rounds of questions (likely to take longer than you think!) and some type of whole-group harvest.

Materials Needed:

- Small tables, preferably round
- Chairs for learners and presenters
- Tablecloths
- Flip-chart paper or paper placemats for covering the tables
- Markers
- Flip chart or large paper for harvesting collective knowledge or insights
- Posters/table tents showing the café etiquette
- Materials for harvesting

General Flow of a World Café:

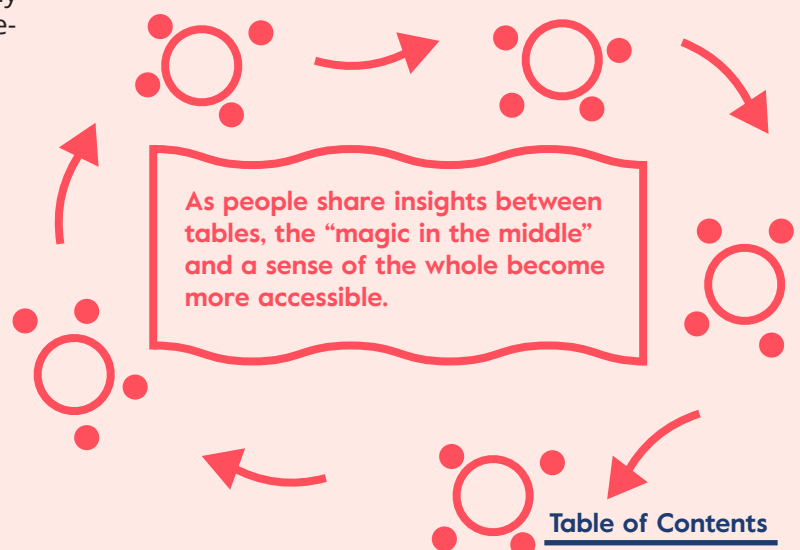
- Seat 4–5 people at café-style tables or in conversation clusters.
- Set up progressive rounds of conversation, usually between 20–30 minutes each—ask some good questions!
- Ask one person to stay at the table and invite the other table members to move to other tables as ambassadors of ideas and insights.
- Ask the table host to share key insights, questions and ideas briefly with new table members, then let folks move through the rounds of questions.
- After you’ve moved through the rounds, allow some time for a whole-group harvest of the conversations.

Operating Principles of World Café:

- Create hospitable space
- Explore questions that matter
- Encourage each person’s contribution
- Connect diverse people and ideas
- Listen together for patterns, insights and deeper questions
- Make collective knowledge visible

From The World Café Resource Guide

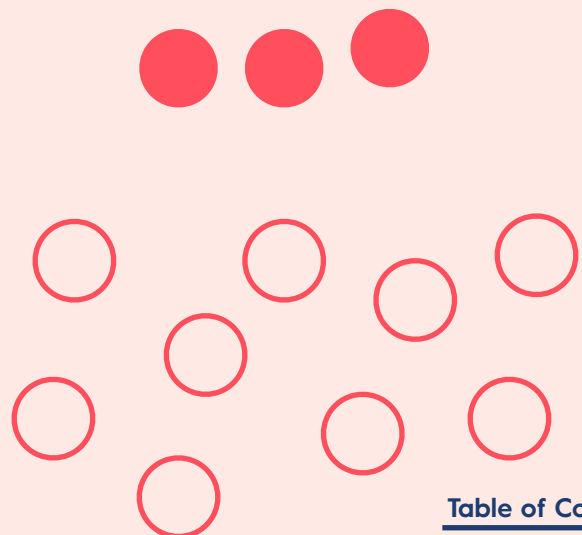
For more information: www.theworldcafe.com



Peer Consultancy (about 45 mins. per consultation)

Peer consultancy is a method of coming together to help another group solve challenges in their work. This is a great way to harvest the collective knowledge of group and gather multiple perspectives on an issue. Preparation: Before the activity, the group with the problem should have time to prepare a description of the problem they want to discuss (in the format provided below).

- The facilitator briefly describes the process below with the group, so that everyone knows what to expect.
- The group presents their problem, in this format:
 - Describe the project.
 - Summarize the situation that is prompting your question or dilemma.
 - Define the issue or question you have for the group.
 - What you want to get out of the conversation (i.e. group as sounding board, collective brainstorm new approaches, hear other's experiences, specific recommendations).
- People can ask clarifying questions to make sure they understand the problem.
- The rest of the group discusses the problem with NO RESPONSE OR COMMENT from the group presenting the problem, unless something needs to be clarified. The facilitator should be strict about this rule.
- The group presenting the problem joins the conversation.



Problem Tree—Identify Roots and Symptoms (about 40 mins.)

Problem trees have the ability to identify structural roots and the resultant symptoms of digital justice issues. Problem trees are a common, highly flexible popular education tool—this is a short, simple version that we used with groups already working on community infrastructure projects.

Step 1: In groups of three or four, select a core problem your work or project is addressing. Write the problem in the center of tree.

Step 2: Discuss the impacts and consequences of that problem—these are the symptoms. Write each of the symptoms in a leaf.

Step 3: Discuss the conditions, institutions and systems that reinforce this problem. Write these in the roots.

Step 4: Gather together and discuss each of the problem trees. Are there important commonalities or differences?

Take a look at the following page for a Problem Tree Worksheet.

After the Problem Tree, you might identify solutions at the individual, community, national and global level using solution grids described in the next section.

ACTIVITY: Problem Tree



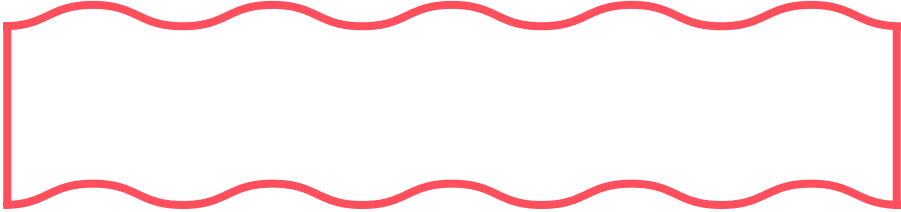
Detroit Summer Solutions 4Square (about 20 mins.)

- Write the issue or problem in the box.
- In the top left: What can individuals do to address the issue?
- In the top right: What can we do as a community to address the issue?
- In the bottom left: What can we do at the city/state level?
- In the bottom right: What could be done at the global level?
- Go back through the grid and write down the connections between the quadrants. How are each of the quadrants connected?

* This activity is great for understanding the complexity of a problem and generating solutions that can be used on multiple levels, moving from personal space to global impact. Paired with the problem tree, a group can go deep into the root of the problems and develop an array of possible solutions collectively.

Worksheet on the following page.

ACTIVITY: Detroit Summer Solutions 4Square



Individual	Community
City/State	Global

Facilitation Strategies 4:

Collaborative Decision-Making Tools

Facilitation plays an important role in both creating and maintaining collective ownership. One of the problems with technology is that lots of people see it as an individual endeavor. Instead, we are interested in engaging with technology as a pathway for communities to become connected and even offer the ability to self-govern. Technology and the internet have the ability to transform our communities, assist in economic development, and help residents understand and utilize the power they already have but may not be aware of. Here are some ways you can make collective decisions and tap into the wealth of knowledge and experience that is present in the room.

Dotmocracy (about 60 mins.)

This is a great way to involve all perspectives in a room when creating ground rules or setting parameters for a new network. Often the loudest person in the room can overly influence decisions. Dotmocracy is a way of ensuring decisions are made that include the perspectives of all learners. Here is an example:

- Individual free write: Have each person write or outline their answer to a question that is at the heart of what needs to be figured out.
- Learners pair up and share their free writes. Have each group identify three things they can agree on.
- Have pairs merge into groups of four. Those groups should then find three things everyone can agree on again. Record those on a large sheet of paper.
- Place the large sheets of paper from each group in a central location where the entire group can see.
- Pass out three stickers or dots to everyone in the room.
- Have learners place dots on the top three statements they believe are most important.
- Come together to reflect upon what was chosen.
- Further flesh out the language of those three statements to be clear as possible.
- Discuss what they look like in practice.

Open-Proposal Format (about 30 mins. per proposal)

This tactic allows for ideas and proposals to come from within a group rather than a central body of leaders. The idea is that everyone has access to the voting process, as well as the ability to submit a proposal to be voted on. For this to be successful, there needs to be a shared understanding of what makes a good proposal and a long-term commitment to this process.

Below are the steps and parameters in facilitating an open-proposal format.

- Individuals or groups create a proposal that:
 - Presents the background information for the decision that needs to be made.
 - Clearly describes the decision the group is voting on.
 - States the timeline, budget and any other details that are necessary to make the decision.
 - States the work and roles that will be needed.
- The group then discusses the proposal, and considers all relevant factors in how to address or implement the decision.
- People can ask clarifying questions or raise concerns when the proposal is shared.
- People can propose amendments.
- The group then votes (see Five-Finger Voting on the following page for voting strategies).
- Repeat if necessary.

Five-Finger Consensus Voting Practice (about 30 mins. per proposal)

FORMULA: In order for a proposal to pass, it must get less than twice the number of fingers than people. Less fingers means more enthusiasm for the proposal. For example, if there are nine people attending the meeting, a proposal must get less than 18 fingers total in order for it to pass. So let's say that five people give the proposal three fingers each and the other four people give it two fingers each, giving a total of 23 fingers. Not enough enthusiastic support for this proposal, so back to the drawing board.

One finger

- This proposal is awesome. If I thought of it, I am awesome. If someone else thought of it, I am awed by their awesomeness. This proposal is necessary for the revolution.

Two fingers

- I think this proposal sounds good. I have very minor concerns, but overall, I'm pro!

Three fingers

- Well, the proposal is okay, but, frankly, I have some significant hesitation. I have shared my concerns with the group, but I don't think my concerns are enough to block or pass. I'll trust the group going forward and will take responsibility for the decision being made. I am not (consciously!) voting a three to passive-aggressively let something through that I actually don't think we should do. This is not a four or five disguised as a three!

Four fingers

- I pass on this vote. Either there's a conflict of interest, or I have a significant problem with the proposal but don't think it's appropriate to block. I have been very clear with the group about why I'm passing on this proposal. As a member of the collective, I understand that I am still responsible for the consequences of this proposal even though I am passing.

Five fingers

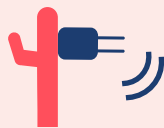
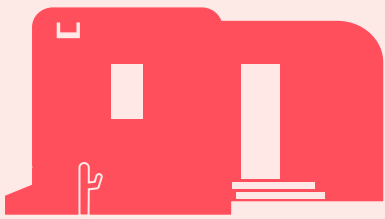
- I block this proposal, and do not think it should pass. I will talk about my concerns and do my best to offer productive alternatives. I am not blocking because I enjoy wielding my vast power in a consensus decision-making process for the purpose of making people miserable, but genuinely feel that it is my duty as a collective member to not idly stand by and allow this proposal to be carried out.

Six fingers

- I'm not ready to vote because I have more questions!

From INCITE! Women and Trans* People of Color Against Violence

Developing a Curriculum Framework



To successfully launch community-rooted technology projects, you will need to plan for the learning that is required for people to shape and maintain the project. In planning for learning you will need to develop a curriculum or learning structure that transfers the skills needed. This requires some thinking and planning as to what people want to learn and achieve as well as the impact the learning should have.

This section will help you design a learning plan that works backwards from goals and purpose.

The Backwards Design Method

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Why “backwards” is best

Deliberate and focused instructional design requires us teachers and curriculum writers to make an important shift in our thinking about the nature of our jobs. The shift involves thinking a great deal—first about the specific learnings sought and the evidence of such learnings, before thinking about what we, as teachers, will do or provide in teaching and learning activities. Though considerations about what to teach and how to teach may dominate our thinking as a matter of habit, the challenge is to focus first on the desired learnings from which appropriate teaching will logically follow.

Our lessons, units and courses should be logically inferred from the results sought, not derived from the methods, books and activities with which we are most comfortable. Curriculum should lay out the most effective ways of achieving specific results. It is analogous to travel planning. Our frameworks should provide a set of itineraries deliberately designed to meet cultural goals, rather than a purposeless tour of all the major sites in a foreign country. In short, the best designs derive backward from the learnings sought.

The appropriateness of this approach becomes clearer when we consider the educational purpose that is the focus of this book: understanding. We cannot say how to teach for understanding or which material and activities to use until we are quite clear about which specific understandings we are after and what such understandings look like in practice. We can best decide, as guides, what “sites” to have our student “tourists” visit and what specific “culture” they should experience in their brief time there, but only if we are clear about the particular understandings about the culture we want them to take home. Only by having specified the desired results can we focus on the content, methods and activities most likely to achieve those results.

But many teachers begin with and remain focused on textbooks, favored lessons and time-honored

activities—the inputs—rather than deriving those means from what is implied in the desired results—the output. To put it in an odd way, too many teachers focus on the teaching and not the learning. They spend most of their time thinking about what they will do, what materials they will use and what they will ask learners to do, rather than first considering what the learner will need in order to accomplish learning goals.

Consider a typical episode of what might be called content-focused design instead of results-focused design. The teacher might base a lesson on a particular topic (e.g., racial prejudice), select a resource (e.g., *To Kill a Mockingbird*), choose specific instructional methods based on the resource and topic (e.g., Socratic seminar to discuss the book and cooperative groups to analyze stereotypical images in films and on television), and hope thereby to cause learning (and meet a few English/language arts standards). Finally, the teacher might think up a few essay questions and quizzes for assessing student understanding of the book.

This approach is so common that we may well be tempted to reply, “What could be wrong with such an approach?” The short answer lies in the basic questions of purpose: Why are we asking learners to read this particular novel? In other words, what learnings will we seek from their having read it? Do the learners grasp why and how the purpose should influence their studying? What should learners be expected to understand related to goals beyond the book? Unless we begin our design work with a clear insight into larger purposes—whereby the book is properly thought of as a means to an educational end, not an end unto itself—it is unlikely that all learners will understand the book (and their performance obligations). Without being self-conscious of the specific understandings about prejudice we seek and how reading and discussing the book will help develop such insights, the goal is far too vague—the approach is more “by hope” than “by design.” Such an approach ends up unwittingly being one that could be described like this: Throw some

content and activities against the wall and hope some of it sticks.

Answering the “why?” and “so what?” questions that older learners always ask (or want to) and doing so in concrete terms as the focus of curriculum planning is the essence of understanding by design. What is difficult for many teachers to see (but easier for learners to feel!) is that without such explicit and transparent priorities, many learners find day-to-day work confusing and frustrating.

The Twin Sins of Traditional Design

More generally, weak educational design involves two kinds of purposelessness, visible throughout the educational world from kindergarten through graduate school. We call these the “twin sins” of traditional design. The error of activity-oriented design might be called “hands-on without being minds-on”—engaging experiences that lead only accidentally, if at all, to insight or achievement. The activities, though fun and interesting, do not lead anywhere intellectually. Such activity-oriented curricula lack an explicit focus on important ideas and appropriate evidence of learning, especially in the minds of learners.

A second form of aimlessness goes by the name of “coverage,” an approach in which learners march through a textbook, page by page (or teachers through lecture notes) in a valiant attempt to traverse all the factual material within a prescribed time. Coverage is thus like a whirlwind tour of Europe, perfectly summarized by the old movie title *If It's Tuesday, This Must Be Belgium*, which properly suggests that no overarching goals inform the tour.

As a broad generalization, the activity focus is more typical at the elementary and lower middle school levels, whereas coverage is a prevalent secondary school and college problem. No guiding intellectual purpose or clear priorities frame the learning experience. In neither case can learners see and answer such questions as these: What's the point? What's the big idea here? What does this help us understand or be able to do? To what does this relate? Why should we learn this? Hence, the learners try to engage and follow as best they can, hoping that meaning will emerge.

The Three Stages of Backwards Design

Stage 1: Identify desired results

What should learners know, understand and be able to do? What content is worthy of understanding? What enduring understandings are desired? In stage 1 we consider our goals, examine established content standards (national, state, district) and review curriculum expectations. Because typically we have more content than we can reasonably address within the available time, we must make choices. This first stage in the design process calls for clarity about priorities.

Stage 2: Determine acceptable evidence

How will we know if learners have achieved the desired results? What will we accept as evidence of student understanding and proficiency? The backwards design orientation suggests that we think about a unit or course in terms of the collected assessment evidence needed to document and validate that the desired learning has been achieved, not simply as content to be covered or as a series of learning activities. This approach encourages teachers and curriculum planners to first “think like an assessor” before designing specific units and lessons, and thus consider up front how they will determine if learners have attained the desired understandings.

Stage 3: Plan learning experiences and instruction

With clearly identified results and appropriate evidence of understanding in mind, it is now time to fully think through the most appropriate instructional activities. Several key questions must be considered at this stage of backwards design: What enabling knowledge (facts, concepts, principles) and skills (processes, procedures, strategies) will learners need in order to perform effectively and achieve desired results? What activities will equip learners with the needed knowledge and skills? What will need to be taught and coached and how should it best be taught, in light of performance goals? What materials and resources are best suited to accomplish these goals? Note that the specifics of instructional planning—choices about teaching methods, sequence of lessons and resource materials—can be successfully completed only after we identify desired results and assessments and consider what they imply. Teaching is a means to an end. Having a clear goal helps to focus our planning and guide purposeful action toward the intended results.

Conclusion

Backwards design may be thought of, in other words, as purposeful task analysis: Given a worthy task to be accomplished, how do we best get everyone equipped? Or we might think of it as building a wise itinerary, using a map: Given a destination, what's the most effective and efficient route? Or we might think of it as planning for coaching: What must learners master if they are to effectively perform? What will count as evidence on the field, not merely in drills, that they really get it and are ready to perform with understanding, knowledge and skill on their own? How will the learning be designed so that learners' capacities are developed through use and feedback?

This is all quite logical when you come to understand it, but "backward" from the perspective of much habit and tradition in our field. A major change from common practice occurs as designers must begin to think about assessment before deciding what and how they will teach. Rather than creating assessments near the conclusion of a unit of study (or relying on the tests provided by textbook publishers, which may not completely or appropriately assess our standards and goals), backwards design calls for us to make our goals or standards specific and concrete, in terms of assessment evidence, as we begin to plan a unit or course.

The rubber meets the road with assessment. Three different teachers may all be working toward the same content standards, but if their assessments vary considerably, how are we to know which learners have achieved what? Agreement on needed evidence of learning leads to greater curricular coherence and more reliable evaluation by teachers. Equally important is the long-term gain in teacher, student and parent insight about what does and does not count as evidence of meeting complex standards.

Backwards Design In Action: Developing a Curriculum Outline

Now that you have figured out your goals, you can create an overall outline of your curriculum. A curriculum outline serves as the framework for your teaching flow or lesson plan. To begin this process, you have to think about what learners will need to experience, do, understand and discover in order to gain the knowledge they need. Your curriculum is essentially a learning plan, and the lesson plans of that curriculum are the detailed processes learners will go through.

This section is our interpretation of the backwards design process. It explains key terms and walks you through the process of writing a curriculum outline.

I. Curriculum Focus

Practicing critical pedagogy and popular education means rooting learning in the context of your environment, addressing significant problems the learning communities you are working with face. Work with your community to identify an issue you want to address or something you want to transform in your community. These ideas should be the focus of your curriculum.

For example, if digital literacy is a challenge in your community, start by brainstorming with your neighbors all the ways in which not understanding or having access to technology is affecting your neighborhood. Then take some time to brainstorm what specific outcomes you believe you can achieve through teaching and learning as a community. This brainstorm is the place you can pull the purpose and focus of your curriculum.

EXAMPLE CURRICULUM FOCUS

Communication is a human right. The tools used for modern communication (internet, cell phones, etc.) are often difficult to use, inaccessible or mediated by a third party or corporation. A future where communities and neighborhoods have direct control over their communications destinies allows for greater self-determination and power over our shared digital voices. We want learners to build that shared infrastructure and realize the power within themselves and within their communities to change the dynamic and relationship with corporations that control our communication tools.

2. Goals

Here is where you will envision what you want learners to experience and achieve through your curriculum. This is often the most difficult step because these goals serve as the foundation for both the curriculum outline as well as the lesson plans. When articulating goals, think about where learners need to end up. Goals should be stated in terms of the learner's knowledge, behavior, and attitude and should be realistically attainable within the time and space you have to teach. Goals need to have actions, specific knowledge, and experiences identified that will lead you in guiding learners to the purpose of the curriculum. The whole curriculum design process is working backward from your goals.

EXAMPLE CURRICULUM GOALS

- **Learners will discover how and why modern communications tools are often inaccessible or difficult to use in certain ways, due to their mediation and control by third parties or corporations.**
- **Learners will demystify the tools, techniques and materials used to build wireless infrastructure at a neighborhood scale.**
- **Learners will build their own communications infrastructure using mesh wireless technology.**
- **Learners will analyze the possibilities of owning and controlling community infrastructure, and how that can increase self-determination and connectedness within their community.**
- **Learners will discover and use methods to test the quality of a community wireless network and troubleshoot any problems that arise.**

3. Desired Understandings

Desired Understandings are what learners will need to understand in order to achieve the goals of the curriculum. Wiggins and McTighe suggest the following “filters” for arriving at worthwhile understandings:

A desired understanding ...

- Has enduring value beyond the classroom.
- Resides at the heart of the discipline (involves “doing” the subject).
- Requires uncoverage (of abstract or often misunderstood ideas).
- Offers potential for engaging learners.

To help think through desired understandings, ask yourself:

What are my own understandings (of myself, the world, this discipline/topic) that inform the goals I've set?

These are the understandings you want to share and cultivate.

EXAMPLE DESIRED UNDERSTANDINGS

- **Learners will understand how building their own communications infrastructure can increase self-determination and connectedness within their community.**
- **Learners will understand how wireless networks function and how that enables the construction of a community or neighborhood network.**
- **Learners will understand how mesh networking differs from other types of networks, and why mesh technology is important to community wireless networks.**
- **Learners will understand why good maintenance and stewardship of their networks builds trust and involvement from those folks in their communities that use the network or want to join it.**

4. Overarching Essential Questions

Essential questions are open-ended questions that lead to investigation. They guide the learning process and lead learners to discover patterns in knowledge through solving problems and discovering meaning, which increases motivation to learn. When designing your essential questions, make sure to frame them in ways that can guide learners through a process of inquiry and focused instruction.

In this section you want to create overarching questions that investigate the issues you are trying to transform. These questions will explore the change you want to see and lead learners to the cultivation of skills and practices needed in order to achieve that change. Your essential questions should work in tandem with the purpose and focus of your curriculum.

Here are good definitions of essential questions, from Jay McTighe and Grant Wiggins.

- Is thought-provoking and intellectually engaging, often sparking discussion and debate.
- Calls for higher-order thinking, such as analysis, inference, evaluation, prediction. It cannot be effectively answered by recall alone.
- Points toward important, transferable ideas within (and sometimes across) disciplines.
- Raises additional questions and sparks further inquiry.

To get started, think through how the desired understandings and goals will impact the purpose/focus of your curriculum.

EXAMPLE OVERARCHING ESSENTIAL QUESTIONS

- **How can shared communications infrastructure facilitate greater self-determination for our communities?**
- **How can we change the dynamic and relationship with corporations that control our communications tools?**

5. Supporting Essential Questions

Supporting essential questions are a series of sub-questions that allow you to investigate the overarching essential questions. They help break down the essential questions into tangible parts. You can start by figuring out what questions will lead learners through the process of investigating your overarching questions. These sub-questions will go on to be used as unit titles or headings for your lesson plans. Each question essentially will shape the content of your lesson plans, leading up to answering the big question of the full curriculum outline.

Generating at least four supporting questions will help you understand the scope of work and capacity needed to implement your curriculum, because these are the questions that will be guiding discussions and activities.

EXAMPLE SUPPORTING ESSENTIAL QUESTIONS

- **What is self-determination?**
- **What is the role that corporations play in our experience of communications?**
- **What defines a community or neighborhood network, and how is it different from other networks?**
- **What is the potential impact of a community wireless network?**
- **Who will benefit from a community wireless network?**
- **What will the network's function be?**

6. Knowledge and Skills

Knowledge and skills are key components that learners will develop through the learning experience. In this step you will identify what people will need to know and be able to do in order to explore the questions you have developed. The skills and knowledge are how your goals will be realized. You can identify them by thinking through what learners will need in order to develop the desired understandings and answer the essential and supporting questions. What you identify in this section will drive the content of your curriculum.

Here are some questions to guide you in identifying skills and knowledge:

- What information (facts, history, principles, terminology) do learners need to perform the tasks?
- What relevant skills (processes, procedures, strategies) and experiences will learners walk away with?

EXAMPLE REQUIRED KNOWLEDGE

Learners will know or understand:

- How WiFi equipment communicates through the air.
- How mesh networks are different than other types of networks, and why we use them in community wireless networks.
- How the internet works and what it's made of.
- How wireless signals work.
- Basic community organizing strategies.
- The principles of collaborative designing.
- The Detroit Digital Justice Principles.

EXAMPLE REQUIRED SKILLS

Learners will be able to:

- Describe how data and information (packets) move across traditional networks and mesh networks.
- Accurately survey their neighborhood for tall buildings or important institutions to provide anchor points for the startup of a network.
- Identify the source(s) for internet gateway connections if the network users require it.
- Relate the importance of community infrastructure to community members and bring them into the network building process.
- Survey building and residence rooftops for the best way to install and mount wireless equipment and cabling.
- Build Ethernet cables, flash mesh software on routers and construct rooftop mounts.
- Install and maintain rooftop and indoor mesh infrastructure, including how to determine the best method to install wireless equipment on, in, and around any building.

7. Performance Tasks

Performance tasks are essentially assessments that learners perform to demonstrate their knowledge, understanding, and proficiency. Performance tasks yield a tangible product and/or performance that serve as evidence of learning. These can look like final projects, tests, or presentations learners do that help you gauge your teaching methods.

Performance tasks serve two purposes:

- Facilitate learners in deepening and putting into action the desired understandings.
- Provide you an opportunity to assess where learners are at so you can course correct if needed.

Wiggins and McTighe's six facets of understandings may be helpful in designing performance tasks. Performance is measured when learners ...

- Can explain who/what/why/when.
- Can interpret and develop personal meaning.
- Can apply to different contexts.
- See it in perspective, with multiple viewpoints.
- Can empathize and provide insights from another role or stakeholder.
- Can develop self-knowledge and examine their relevant personal needs and values.

Think about what you'll have learners do to evaluate and document what learning has been achieved. Allowing learners to perform and present their learning at the beginning of a curriculum will ensure a learner-centered curriculum with effective assessment built in.

EXAMPLE PERFORMANCE TASKS

Hands-on performance tasks provide the opportunity to evaluate the various strengths and areas of improvement for the learners. They determine if the best initial role for a steward is to work on the physical construction aspects of an installation (handyperson), the software and networking aspects (programmer), or the outreach and people-facing aspects (organizer).

- Learners will work on flashing commotion mesh software on routers, changing mesh networking configurations, building Ethernet cables, surveying rooftops and installing mounting hardware and wireless equipment on rooftops.
- Learners will scout and survey buildings in their neighborhood for ways in which to use them in building a network. They will talk to building managers, building owners, and residents about installing equipment on their building.

8. Activities

Activities are learning experiences you will facilitate to guide learners in exploring the questions and information you are sharing with them. These activities will enable learners to develop the knowledge and skills they need in order to reach the desired understandings. These activities should be designed to lead learners to explore, discover and internalize the answers to essential questions. The design of these activities facilitates practicing popular education and exploring the issues of the content.

To get your brainstorm started you can start by asking: What activities will equip learners with the needed knowledge and skills?

EXAMPLE: ACTIVITIES

- Share stories of your experiences with the internet and when you first got online.
- Design a map of your neighborhood and identify relationships that you have.
- Power map your neighborhood to understand how power flows.
- Design a community survey to understand tech needs and desires.
- Watch *The Internet Is Serious Business*.
- Look at maps that show broadband connectivity.
- Explore wireless WiFi networking through working with routers and equipment.
- Discover wired Ethernet, build and crimp Ethernet cables.
- Work on common Ethernet and WiFi networking problems; experiment with router connections to understand how they work.
- Install commotion firmware on wireless devices.
- Regarding rooftop installations, discuss the vital points of rooftop and power tool safety and mounting hardware.
- Assess building types and roles (including challenges those buildings play in a network).
- Explore the various steward roles in wireless network installations (organizer, handyman, programmer).
- Install wireless nodes from start to finish in a community.
- Build a system for the digital stewards to support each other as a learning community.

TEMPLATE: CURRICULUM OUTLINE

To download editable templates, visit:
detroitcommunitytech.org/teachcommtech

Curriculum Name:

Curriculum Focus

What program objectives, projects or learning outcomes will be addressed or accomplished?

Goals

Where do you want learners to end up? What do you want them to achieve and experience?
Why is this important?

Desired Understandings

(Information, facts, history, principles and terminologies learners will walk away with)

What are the understandings your goals are based upon? What do learners need to understand in order to reach the goals?

Overarching Essential Questions

What are the questions derived from the goals that frame the curriculum?

Supporting Essential Questions

What are the questions that facilitate thinking and learning about the ideas and skills required to achieve the goals?

Required Knowledge

What is the content you will share?

What is key for learners to know?

What information do they need to acquire in order to investigate the questions?

Required Skills

What do learners need to be able to do? What skills and practices will they need to develop in order to achieve the goals?

Performance Tasks

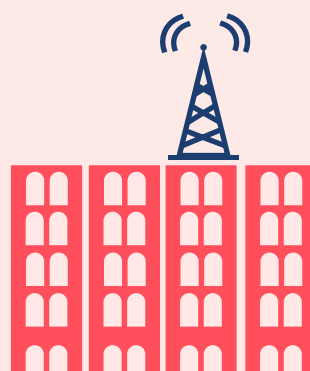
What will you have learners do that show they understand the material? How will you evaluate learning?

Activities and Materials Brainstorm

What activities will bring this curriculum to life?



Developing Lesson Plans



4MAT Principles

You have now developed and committed to your goals and also developed a curriculum outline with a clear purpose and learning sequence arc. Next you'll need to figure out what will happen when you get to the classroom by developing a series of activities in detail. This section will help you design lesson plans that engage multiple learning styles through the 4MAT method. We use the 4MAT method in combination with backwards design and critical pedagogy to build capacity in our neighborhoods and create learning spaces that are transformative.

Before we jump in, let's look at some fundamental guiding principles of 4MAT (these principles are why we chose this 4MAT model for lesson planning):

Learning is fundamentally social.

People need to learn about what matters to them.

Learners need a supportive environment.

The more comfortable we are about who we are, the more freely we learn from others.

Learning is conceptual in nature, and visual images enhance conceptualization.

Learning by doing is more powerful than memorizing, and coaching is the key.

Learning should happen across a person's lifespan.

Cracking the whip stifles learning.

Failure to learn is often the fault of the system.

Sometimes the best learning involves unlearning.

Real learning leaves us changed.

Introduction to the 4MAT Model*

McCarthy, Bernice. *The 4MAT System Course: Introduction to the 4MAT System: The Natural Cycle of Learning*. Barrington, IL: Excel, 1999. Print. *The 4MAT System Model is the creation of Bernice McCarthy and About Learning, Inc. is the sole ownership holder. Copyrights range from 1982 to the present.*

The 4MAT model is an approach to designing workshops and lesson plans based on the understanding that humans learn in a cycle and that everyone has a mode of learning—a point in that cycle—that feels most comfortable to them. This system guides you in designing a learning experience that flows from one kind of learning to another, so all learners experience both comfort and challenge.

Here is the thinking behind this model:

1. People function more comfortably at different points on the cycle of learning. However, generally the cycle of learning that everyone goes through can be understood to flow like this:

- Personal connection—experiences, sensations, emotions, memories
- Reflection—transforming knowledge by structuring, ordering, intellectualizing
- Conceptualization—the translation of experience to ideas, definitions, systems
- Testing, experimenting, practicing with new concepts and information
- Creative adaptation, integration and application of ideas to the external world

2. The combination of the way someone takes in new information and what they do with it, how they perceive and how they process, makes up his or her learning style.

3. There are four major identifiable learning styles (all equally valuable):

Type 1 Learners: WHY

- Imaginative learning, feeling and watching; seeking personal associations, meaning, involvement. Teachers need to create a reason for this learner to connect with the material—**why** is it important for their life?

Type 2 learners: WHAT

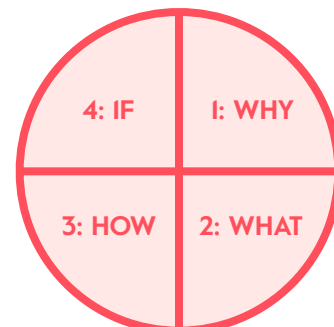
- Analytic learning, listening to and thinking about information, seeking facts, thinking through ideas, learning what the experts think. Teachers need to give them significant knowledge that deepens their understanding of **what** ideas are being formulated.

Type 3 learners: HOW

- Common sense learning, thinking and doing, experimenting, building, making it useable, tinkering. Teachers need to let them try it and figure out **how** to apply it.

Type 4 learners: IF

- Dynamic learning, doing and feeling, seeking hidden possibilities, learning by trial and error, adapting, self-discovery. Teachers need to let them explore “**what if I ...?**” and adapt the concepts in their own original ways.



*About Learning is proud to be included in this publication.

4. All learners need to be taught in all four ways in order to be comfortable and successful part of the time while being stretched to develop in other ways at other times. All learners will shine at different places in the learning cycle, so they will learn from each other.

5. The 4MAT model moves through the learning cycle in sequence, teaching in all four modes as a natural learning progression.

6. Within each stage of the learning cycle, both sides of the brain need to be engaged. The interplay between right and left is crucial to higher learning and thinking. It provides a greater range and depth of understanding and encourages creative expression and problem solving.

Left

- **Prefers language, is sequential, examines the elements, has number sense. Works to analyze or break down information.**

Right

- **Operates out of being, comprehends images, seeks patterns, creates metaphors. Strives to synthesize and consolidate information.**

7. The development and integration of all four modes of learning and the development and integration of both right- and left-mode processing skills should be a major goal of all teaching and learning.

8. Through this model, learners will come to accept their strengths and learn to capitalize on them while developing a healthy respect for the uniqueness of others and furthering their ability to learn in alternative modes without the pressure of being wrong.

Quiz: What Type of Learner Are You?

Developed by: RISE NYC: New America Resilient Communities Digital Stewards
Community Coordinators.

When teaching multiple styles of learning, it is good to know what type of learner you are. It is sometimes hard to teach outside of your learning comfort zone, so the more you know about your own learning patterns, the more likely you are able to help others identify theirs.

Prompt: You are about to cook dinner. How will you approach it?

Option 1:

Call a friend or relative to ask about a dish that you remember. While talking about the dish, you may end up going down memory lane talking about your shared past and how that dish reminds you of a phase of your life.

Option 2:

Look through a pile of cookbooks and pick a recipe. While you're at it, you may read an article or two about the dish, or about the origins of the ingredients.

Option 3:

Open the fridge and pull out what you have, then look for a recipe based off what ingredients you find. You may experiment with substituting ingredients after reading a few recipes.

Option 4:

Think about what you are in the mood for and combine a few recipes to create something unique. You may not be able to replicate it in the future, because it is so special.

Option 5:

Order takeout and lie about it to anyone who is eating with you.

What kind of learner are you?

The number you picked corresponds to the 4MAT quadrant you feel most comfortable in. If you choose 5, well there are always exceptions to any rule.



The Cycle: Four Quadrants

Adapted from The 4MAT System Course

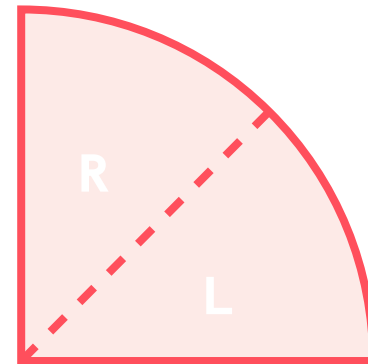
In this model, a lesson plan is divided into four quadrants, each representing a point in the learning cycle and a specific learning style.

Each quadrant uses both the right mode of thinking which jumps right into the experience, and a left mode of thinking that stands back and analyzes. This allows you to design a holistic lesson plan or workshop (or entire curriculum) that supports different types of learners, engaging the right and left brain through a variety of activities.

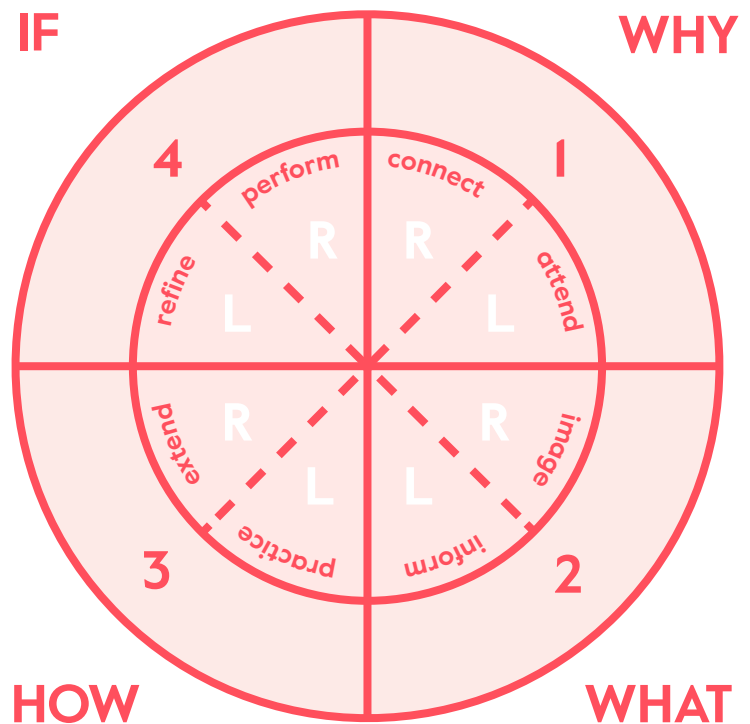
By moving through the quadrants and modes of thinking, teachers can create a lesson plan or set of activities that reaches across learning styles while pushing people to learn in new ways.

To illustrate each of the stages in this process more clearly, we offer example activities for an imagined lesson about internet access. One of the goals of this session is for learners to develop an understanding of the internet's impact on society and the importance of equitable internet access.

Experience



Analyze



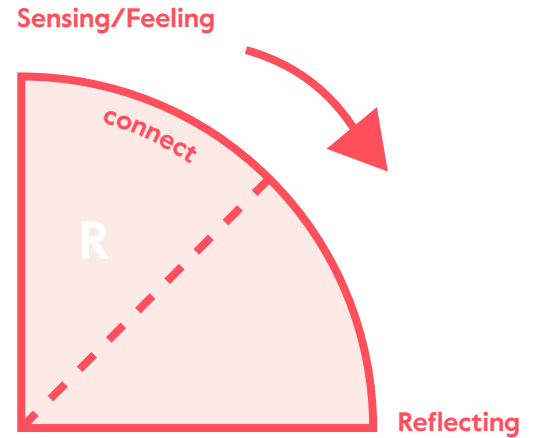
Quadrant I: WHY

Imaginative Learning

This is the realm of imaginative learners, who learn through a combination of sensing, feeling and reflecting. They want to know how the content connects to their experience.

In this quadrant you create a reason for the learners to buy into your lesson plan. Answer the question “Why?” and create an experience where learners articulate why this is important to them and what it has to do with their lives.

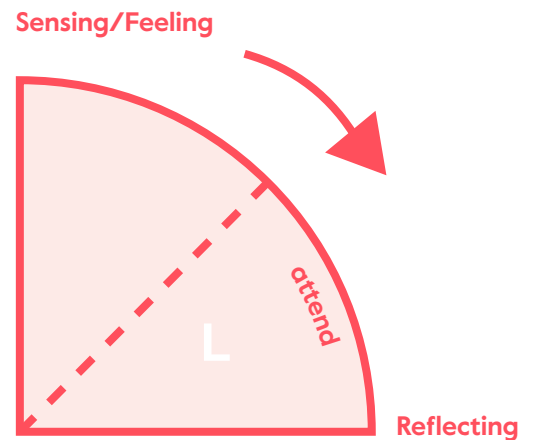
Right brain mode (connect): Create an activity that allows learners to share their previous experience or knowledge and place themselves in the content.



EXAMPLE

Start by asking learners to map the last time they were on the internet, and have them identify all the ways in which they use the internet.

Left brain mode (attend): Allow the learners to reflect on what they just shared or experienced. In the first quadrant we created a reason to learn; now we have to teach it to them.



EXAMPLE

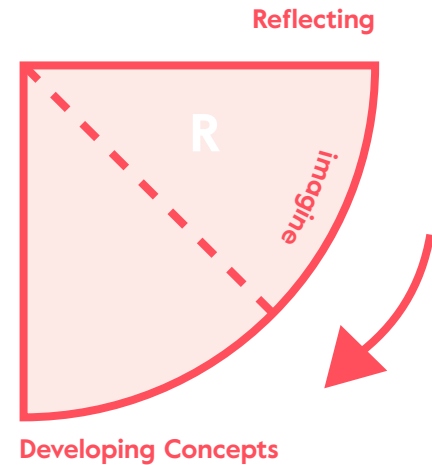
Have learners share their maps and discuss commonalities among the group regarding internet usage.

Quadrant 2: WHAT

Analytic Learning

This is the comfort zone for analytic learners who prefer to learn through a combination of thinking through concepts and reflection. These learners often ask questions that lead with “What?” Here, teachers provide expert knowledge, leading them from personal experience to actual content.

Right brain mode (imagine): Learners link their personal experience to the analytic world of content, moving from the concrete to the abstract. Use a new medium to help learners see the concept differently.



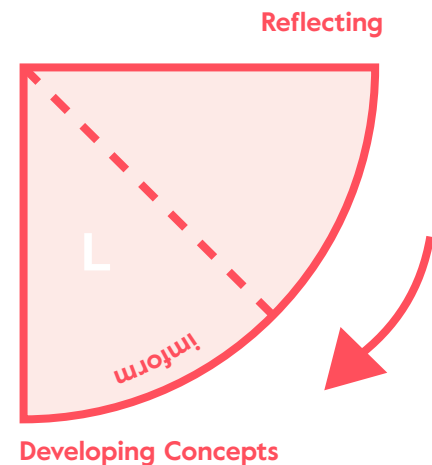
EXAMPLE

To establish a shared understanding of the internet's impact, ask learners to imagine a scenario in which they would use the internet. Have them visually depict that scenario, mapping out the steps of the process, showing what role the internet plays (think flowchart/diagram meets comic strip). Then ask them to imagine that scenario without the internet. What would they do in that situation? How would it look different?

Left brain mode (inform): Selectively present information that relates to the core of the concept.

EXAMPLE

Provide learners with population categories (e.g., age, ethnic/racial identity, etc.) and statistics on internet access, but don't match the numbers with the categories. Invite learners to create graphs that match the statistics with the categories. Then provide the actual statistics organized by category, allow learners to correct their own graphs, and facilitate a conversation comparing and contrasting the statistics with what they had initially assumed.



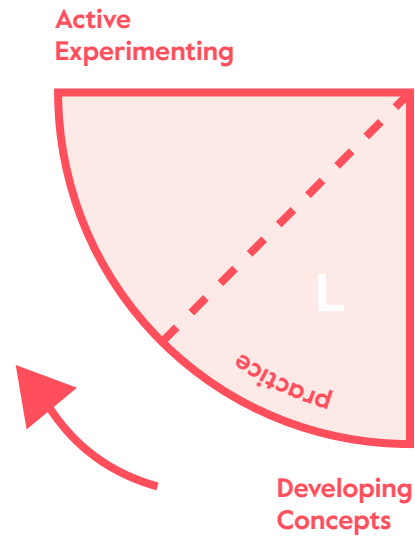
Quadrant 3: HOW

Common-Sense Learning

This quadrant will appeal most to common-sense learners, those who like to learn by thinking through concepts and trying things out for themselves. They like to acquire skills. These learners often ask questions that lead with “How?” This quadrant provides opportunities for learners to have guided practice with new knowledge and explore multiple ways to manifest their new understandings in the real world. This quadrant is where the learner becomes active and does more of the learning on their own.

Note: In this quadrant, left-brain mode techniques come first.

Left brain mode (practice): This stage is about developing concepts and practicing. Worksheets, exercises and experiments are all appropriate at this point.



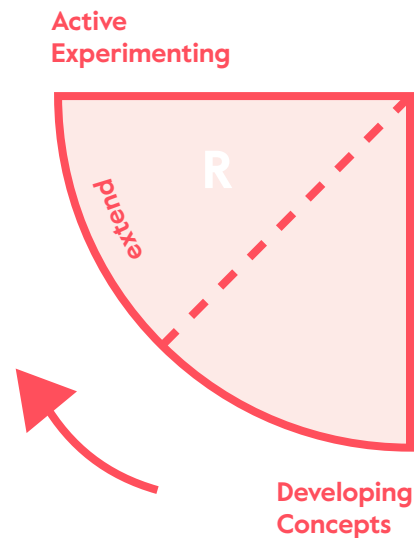
EXAMPLE

Create a worksheet that asks learners to recall and synthesize statistics, ideas, and facts about the internet and internet access.

Right brain mode (extend): This is when learners are “messing around” with the concept, making it theirs. They are extending the ideas and information they’re gathering.

EXAMPLE

Have learners create a color-coded map of the city indicating information/statistics about technology and internet access.



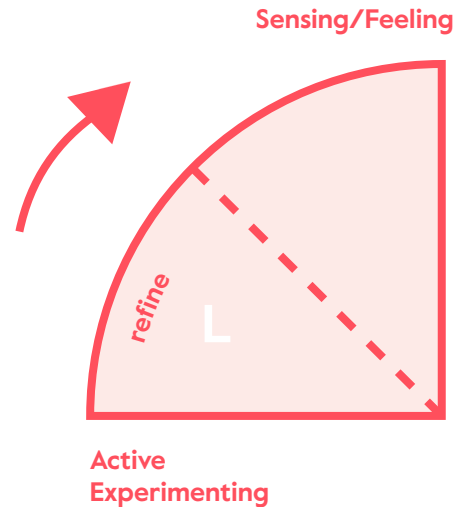
Quadrant 4: WHAT IF

Dynamic Learning

This is where dynamic learners will shine. They prefer to learn by sensing, feeling, and doing. They like to apply their learning. These learners often ask questions that lead with “If?” This is where we give the learners opportunity to integrate what they have learned to speak in their own voice. At this point in the cycle, the learners can evaluate themselves and their learning, and refine and edit their own work. Here is where the learners learn from each other.

Note: In this quadrant, left-brain mode techniques come first.

Left brain mode (refine): Support learners as they apply and refine what they have learned in a personal and meaningful way.



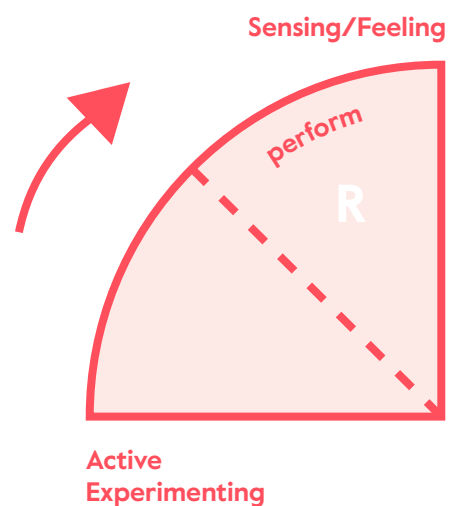
EXAMPLE

Give learners the task of creating questions for a community survey about technology and internet needs, ideas and desires. They should devise a strategy for their survey as well: What community are they surveying? Where will they go? Who will they talk to?

Right brain mode (perform): Learners get to perform and share what they have learned with each other and perhaps the wider community.

EXAMPLE

Have learners identify a format in which they will share information they gather from their interviews. They could share their work via podcast, data visualization, essay, web site or newsletter—it's up to them to decide how they want to share the knowledge they know. If this is a longer and more involved curriculum, stage an event to exhibit everyone's work.



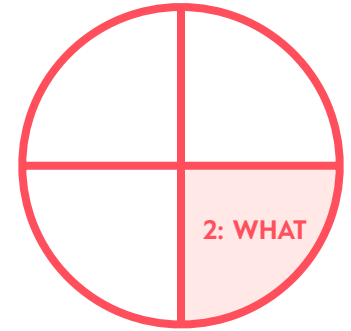
WORKSHEET: 4MAT METHOD

Here is a guide to help you use the 4MAT system to create an activity.

Start with quadrant 2.

Define the core concept that you want the learners to understand. WHAT are you teaching?

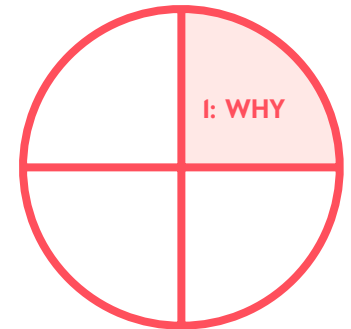
What facts or historical references connect to the core concept of your lesson?



Now go to quadrant 1.

State the personal value that is inherent in the concept for ALL learners. WHY do they need to know the concept?

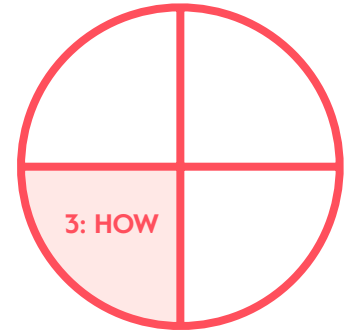
What activities or facilitation strategies can you use to connect this concept to learner's lives?



How will you tap into their prior knowledge, what they already know and have experienced?

Go on to quadrant 3.

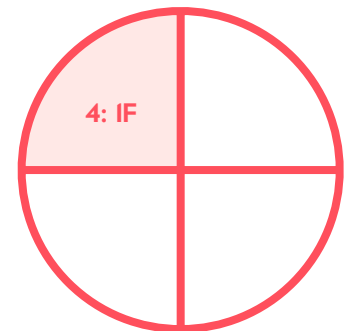
Think about what skills learners will need to develop in order to put this concept into practice. What activities/projects will create the conditions for learners to dig into the ideas and information?



How will you support learners practicing these skills? What forms of assessment will you use to determine learners' levels of understanding and internalization of the concept?

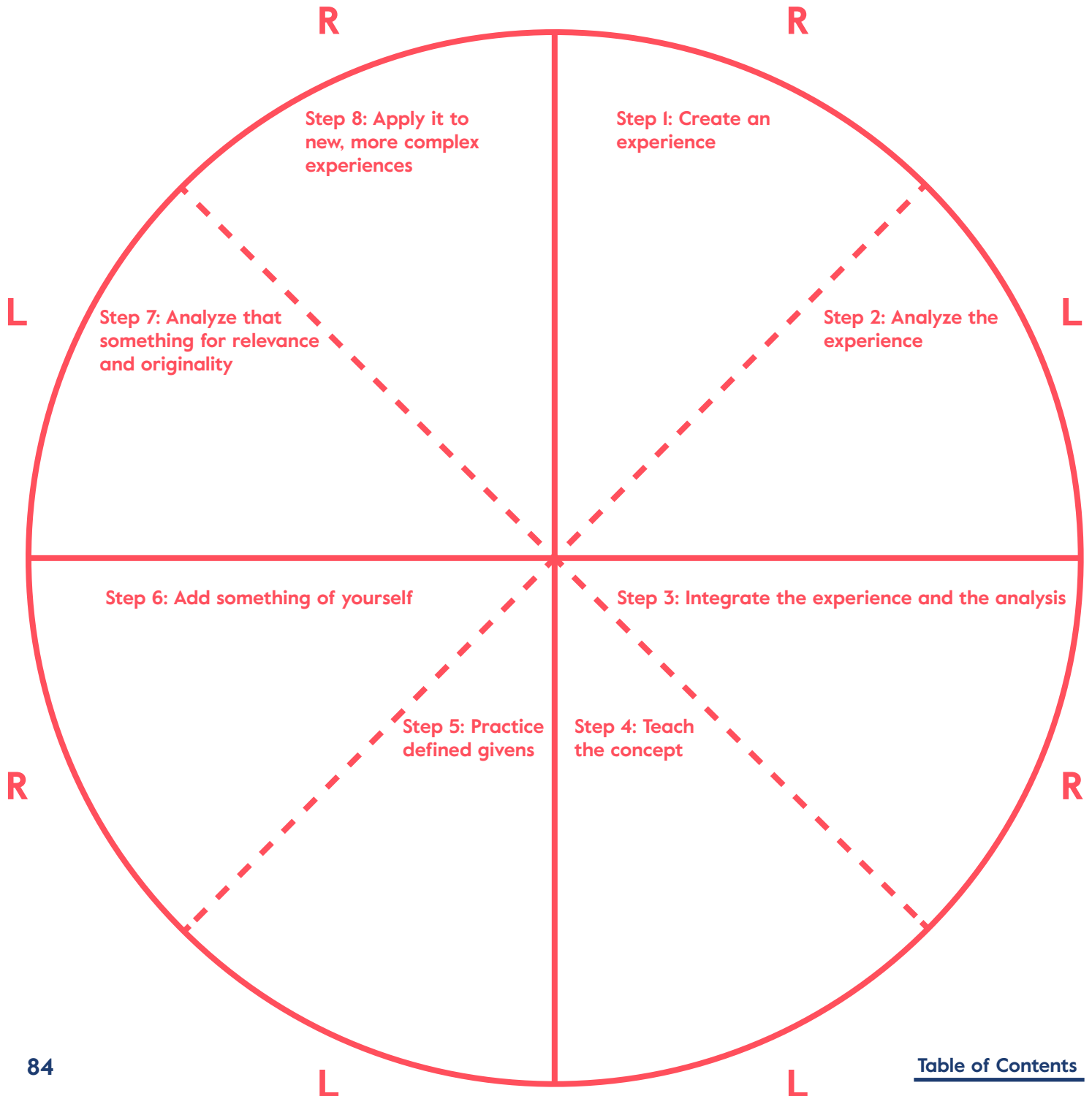
Finally, go to quadrant 4.

What are ways learners can refine and adapt the concepts into their own words? What opportunity can you provide for learners to experiment with what they have learned?

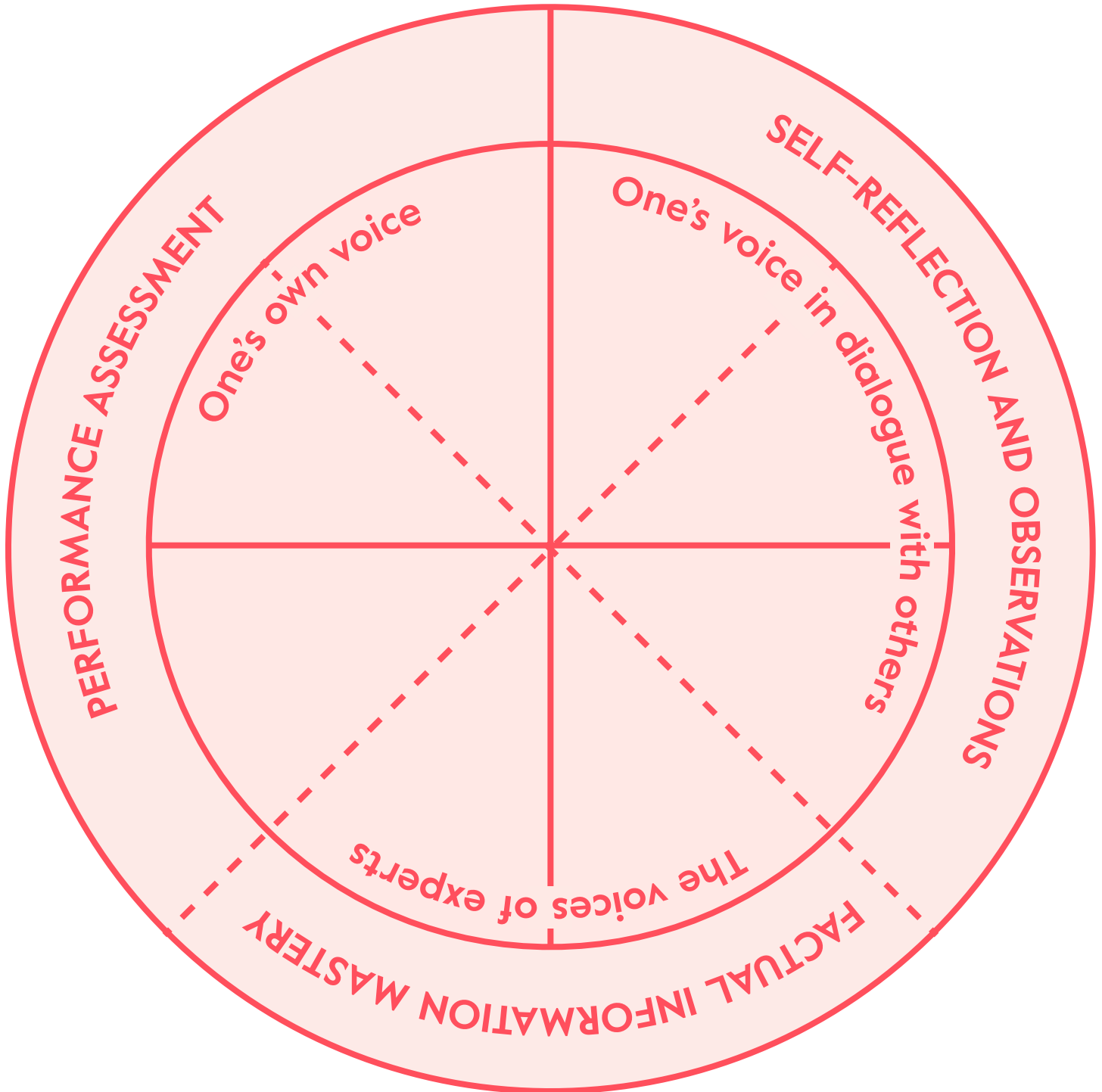


What format can you use for learners to present the concepts back to you and each other?

Now plug in the information that you created in the 4MAT worksheet into the 4MAT Cycle diagram below. When you are finished filling out the diagram you should have a complete set of activities you can then plug into a lesson plan. After many uses of this cycle you will eventually get the groove of developing 4MAT lessons plans not needing the worksheet or cycle diagram.



Here is another diagram of the 4MAT circle to help you think through how to design activities.



Creating a Week-by-Week Lesson Plan

How do you develop your curriculum ideas into a cohesive journey culminating in your goals?

What order should you put your goals and desired understandings in?

How do you decide what activities and content go where and how it all connects to the goals?

Once you've used the Backwards Design process to draft an outline, here is the process you can use to build out the curriculum in detail through lesson planning. Take some time to ensure that everything lines up and clearly connects in a logical way. Look for anything that does not actually fit or directly lead to what it is supposed to. It will also be the time to simply refine and revise what have you written. You will want to make sure your goals and desired understandings are focused and that you can fit them all into the teaching timeframe you have.

I. Lessons and Goals Overview

First, take a look at all your supporting questions and determine how many lessons you need to flesh out to develop your curriculum outline. Then put these lessons in order, creating an arc or overview of your curriculum. This order is essentially your curriculum map or learning sequence.

Then, look at your curriculum outline and identify four lessons in a row to further flesh out.

Next, pick your first lesson you identified above and make that the name of your lesson plan.

From the goals in your curriculum outline, assign a goal to this lesson. You can have more than one goal if they are both connected to the lesson plan.

EXAMPLE

Lesson name: Planning Networks
Lesson number: Lesson 7

EXAMPLE GOALS

Learners will identify areas on the eastside of Detroit where a community wireless network will benefit the community.

Learners will create neighborhood relationships and building access maps for a community wireless network.

2. Desired Understandings

Next you will want to look at your curriculum outline and assign the desired understandings that connect to this lesson. Make sure to pick the understandings that move you towards the goal you identified.

*There may be more than one understanding connected to a goal, and there may be an understanding that connects to several sessions.

EXAMPLE DESIRED UNDERSTANDINGS

Learners will understand how building their own communications infrastructure can increase self-determination and connectedness within their community.

Learners will understand how wireless networks function and how that enables the construction of a community or neighborhood network.

3. Essential Questions

Once you know what you want people to understand in each session, then list the essential questions and supporting essential questions from your curriculum outline that relate to your understanding. You may need to add more supporting questions now that you are really focusing in on a particular understanding.

EXAMPLE OVERARCHING ESSENTIAL QUESTIONS

How can shared communications infrastructure facilitate greater self-determination for our communities?

How can we change the dynamic and relationship with corporations that control our communications tools?

EXAMPLE SUPPORTING QUESTIONS

What is the potential impact of a community wireless network in that area?

What relationships currently exist within the area?

Who will benefit from the network?

What will the network's function be?

Who will support maintaining the network?

Does the network have room to grow?

4. Knowledge and Skills

The next step is determining what knowledge and skills will be required to explore these questions and develop the desired understanding. This is essentially your lesson-plan content. The knowledge and skills you are aiming to cultivate and the questions you want to explore will determine the activities you select.

EXAMPLE KNOWLEDGE

Community-organizing models
Network design models
Basic network engineering

EXAMPLE SKILLS

Basic wireless network design
Building a survey
Analyzing data
Community organizing strategies

5. Sequence and Flow

Now identify which activities from your brainstorm connect to this lesson. Think through the order of these activities, designing the learning that will occur. Use the 4MAT method to make sure you are creating a lesson plan that reaches many different learners. You might have to let go of some ideas from your brainstorm or add ones you hadn't thought of yet. Be realistic about capacity and time!

Activities should flow in the following chronological order:

- Help the learners understand where the curriculum is going and what is expected
- Draw out where learners are coming from (prior knowledge, interests)
- Hook all learners and hold their interest
- Help learners explore the focus issues and experience the key ideas
- Provide opportunities to rethink and revise their understandings and work

Performance Tasks should:

- Allow learners to evaluate their work and its implications
- Provide you a way to assess their learning
- Allow learners to extend their learning beyond the curriculum

EXAMPLE LEARNING SEQUENCE

LARGE GROUP WORK

1) Share a map of zones that breaks up the eastside into neighborhoods

2) Divide into groups based on who works/lives/has relationships in the zones identified in the map

SMALL GROUP WORK

3) Once in groups, using a detailed map of each zone to identify where people have relationships and access. Put red place markers to mark locations. Add any contact info and why they are good places to install mesh routers in the map notes.

4) Add another color marker on places that would be ideal locations but you are not sure who the contact is. Add any notes on why and who may have access to these locations.

5) Once all markers are in place, spend some time discussing the map. Look for clusters of markers. Where would the best location to put up five routers be?

6) Once the location of the mesh is decided in those small groups, create a colored border around the area on the map to identify the chosen area.

LARGE GROUP WORK

7) Discuss the areas chosen. Ask these questions to the large groups to generate discussion:

- Who will benefit from the mesh?
- What will the mesh's function be?
- What is the potential impact of the mesh network in that area?
- Does it have room to grow?
- Are there others in that area who will be able to support the maintenance of the mesh?

8) Have learners develop a set of questions that will support the groups in surveying the area

TEMPLATE: LESSON PLAN

To download editable templates, visit:
detroitcommunitytech.org/teachcommtech

Lesson Plan #:

Goals

Which workshop goals are being addressed in this lesson?

Desired Understandings

Overarching Essential Questions

What questions will guide learners' investigations?

Supporting Essential Questions

Knowledge/Content

Information, facts, history, principles, terminology

Skills


What learners will focus on and/or processes and strategies they will develop

Learning Sequence

Materials

Include hyperlinks to worksheets, sites, etc.

Evaluating Teaching and Learning



Learning is complex and unique to who we are as individuals. To fully understand how to effectively teach and learn as a community we must take time to reflect and evaluate our actions.

The last step to finalizing a curriculum is creating an evaluation strategy. Evaluation and documentation should be meaningful, allow you to see things in new ways, and make connection that move you to evolve your ideas and methods.

Developing an Evaluation Strategy

I. Figure Out the Timing

Evaluation: it's not just for the end of your project!

Even the most flawless curriculum may need to be adjusted mid-course. One of the most important skillsets of a teacher is the ability to know when and how to make changes. Having the ability to evolve along with learners is dependent on the quality of evaluation collected throughout your curriculum.

A great way to quickly get student feedback so that instructors can course-correct is through sticky note evaluations. Ask learners after every class to write their high and low points, and hopes moving forward on a sticky note. Learners anonymously post them on the door as they exit the classroom. These comments allow the instructor to assess how their lessons are being received. They also give the learner a safe space to speak honestly with their instructors. Sticky note evaluation is a great method for new instructors who are getting to know their learners or veterans that are trying out new things. Regardless of what you use it for, you don't want to wait until the end of your course to find out that learners were disappointed.

Using quarterly student surveys to monitor the effectiveness of the program also helps in monitoring learning and working towards your goals. Each goal you create should be able to be translated into an evaluation method. Along with measuring what learning has occurred, you also want to create goals around performance, or the satisfaction of learners. Quarterly surveys should also ask learners to evaluate their instructors, describe the kinds of relationships they are growing with classmates, and chart the progress they are making on projects.

Online social media can also be used as a decentralized evaluation tool. Pick a hashtag for your class and have your learners use it to tag conversations and thoughts around the content you are teaching. The number of times the hashtag is used as well as how it is used are great ways to measure learning. You can also use quotes or comments learner's post as testimonials when trying to share the impact or relationship building.

2. Identify Milestones

Your evaluation strategy should connect to major learning milestones. Start by identifying lesson plans that are essential to grasping core concepts of your curriculum. Take a moment to look through your curriculum outline. Circle the parts of the outline that you feel are key concepts that will lead to reaching the curriculum goals. These key parts of your curriculum are milestones. Milestones are important markers for evaluation and overall education timeline.

To begin mapping your milestones, match the key concepts of your curriculum you circled with corresponding lesson plans. Identify the lesson plan in which this key concept takes place and when in your timeline the lesson plan takes place.

EXAMPLE

What key concepts needs to evaluated in order to reach your curriculum goals?

- Skills (computer building, IT troubleshooting, how the internet works)
- Wireless IT knowledge/wireless engineering (how a network works, how to build one, how to maintain one)
- Relationship-building to community organize and uplift digital assets
- Transformation occurs when a community builds and takes ownership of its communications infrastructure (impact of knowledge in the community and individually)
- How a community wireless network can connect people to each other and build stronger communities

3. Connect Your Method to Your Goals

How you measure depends on *what* you want to measure. If you are conducting a training and want to measure how well you transferred skills and how many people you trained, you may want to track attendance and do a pre- and post-skills assessment. If your goals are less about numbers and more about self-transformation or relationship building, you may want to collect testimonials by creating surveys that allow people to share their stories rather than circle “yes” or “no.”

Here are some questions that will help you identify measurement methods that align with 4MAT and Backwards Design:

- How can you measure what the degree of engagement or fascination in the subject matter is?
- How can you measure whether or not learners are able to attach a mental image to the concepts you are sharing?
- How can you measure to what degree learners are gaining knowledge?
- How can you measure to what degree learners are developing skills and fluency?
- How can you measure how learners are able to create something new in the world, integrating themselves and what they learned?

EXAMPLE

What method of evaluation would be good to measure your key concepts?

- Needs assessment
- Pre-/post-test
- Attendance
- High/low/hope
- Student Satisfaction
- Interviews
- Final Projects

How will you coordinate major milestones with evaluation?

- During the phase of recruiting learners, we will add a mini needs assessment to the application to get an idea of where people are and what we need to teach.
- At the start and end of the curriculum we will do a pre- and post-test to measure skills attained, relationships formed in the class, and any transformation that may be accruing.
- At the start of every class we will measure attendance to keep tabs on who is learning and whether or not the class is invested in learning.
- After every class we will do the sticky note high/low/hope to measure progress and interest, and to retain the ability to course correct when needed.
- In the middle and end of the course we will conduct a student satisfaction survey to understand the overall curricula and the performance of facilities and staff.
- In the middle and end of the curriculum we will conduct project reviews to gauge how people are connecting the content to their community.

4. Choose What You Want to Measure

Looking at your core concepts that need to be developed, think through what you want to evaluate. This should be connected to the purpose and goals of your curriculum.

Next, think through why you want to measure these things. What purpose will they serve and how are they connected to the big picture of your overall curriculum?

EXAMPLE

What do you want to measure?

- 1) Demographics
 - Zip codes served
 - Age
- 2) Student/client satisfaction
 - Facilitation
 - Logistics
 - Content and flow
- 3) Self-transformation
 - Growth in relationships
 - Growth in vision
 - Growth in skills
- 4) Ripple impacts
 - Skills shared with others
 - Application of skills in life and work

How are these measures connected to your curriculum?

- Demographics—to ensure we are reaching people most impacted by the subjects we are teaching.
- Student satisfaction—allows us to see if we are developing the classroom we set out to (community-rooted, accessible, relevant to multiple learners from different backgrounds) as well as make sure we are teaching the content in a way that is accessible.
- Self-transformation—self-determination is a transformative process and we want to make sure we are on the right track in reaching this goal of self-determination and building capacity need.
- Ripple impacts—we aim to train trainers so neighborhoods can grow their digital capacity. The ability to share skills is important.

Now think through what you would like to be able to say after you are done. What type of story do you hope to tell? Use this opportunity to project into the future here. Make sure you are specific in what you hope to share.

The information you gather is connected to people's experiences, and people's information is not something to take lightly. You will want to think through how you will use the information you gather to make sure you gather what you need. You'll also want to be able to communicate why you are asking learners for their information and feedback. Knowing in advance what you plan to do allows for transparency.

EXAMPLE

What story do you want to be able to tell with the information you gather?

- X out of Y learners indicated their work/lives were impacted by participation in X.
- Learners found X practices of education were the most valuable in informing their learning.
- X percent of participants refined their approach to (technology/organizing) to be more participatory.
- X number of people stated that they learned _____ in this program, which they did not know about before.
- X number of learners shared their skills with approximately _____ (number of) people.
- X number of people received second hand training from our learners.
- X number of neighborhoods have been impacted by our _____ service.
- One participant indicated that _____ was impacted when _____.

What do you plan to do with the information you gather?

Internally

- Course-correct
- Refine content and approach
- Understand our methods and practices more deeply

Externally

- Present back to learners their growth and how their feedback impacts the design of the program
- Demonstrate impact to stakeholders

5. Choose Your Evaluation Method

Now that you know what you need to measure and why, think through what methods would work best.

Pre- and Post-Test

These are tests that are created directly from your goals. The idea is that you have your learners take them before they learn anything and then directly after to assess what information was understood. This is a great tool to help understand your classroom's pace.

Surveys

These can be specific or open-ended, depending on what you are trying to measure. If your goals are less about numbers and more about self-transformation or relationship building, you may want to collect testimonials by creating surveys that allow people to share their stories rather than asking "yes" or "no" questions.

Transcribed Conversations

Giving learners a debate and transcribing it is a method we learned from Detroit Future Schools. It is a great method for witnessing learning in action. After you transcribe a conversation or debate you can go back and highlight key points in which learning occurred, then use that information to have learners think about how they are using their knowledge.

Attendance

A sign-in sheet can go a long way. It can help you understand engagement by the frequency that learners show up.

Written Reflections

This is great for both teachers and learners to see where they are and where they have come from. Reflections can show us how we learn best, what works and what does not, and gives a space for brainstorming to course-correct if something is not working well.

EXAMPLE

What evaluation methods will work for what you want to do?

- Needs assessment
- Pre-/post-test
- High/low/hope to measure progression
- Student satisfaction survey at the end of the course

6. Develop Questions

Finally, take some time to brainstorm some questions you can ask in your evaluation.

EXAMPLE

What questions do you need to ask in order to reach evaluation goals?

- Name
- Age
- What skills did you learn that you DID NOT know before participating. (Add matrix of skills offered)
- I feel most confident in _____ skill(s). (Have folks rate their level of confidence along a Likert scale, if possible)
- I plan on using (add a matrix of skills taught) in my work.
- Please explain your work and how you will use these skills.
- My participation in _____ changed the way in which I approach (add main goal of program)? Strongly agree/strongly disagree
- Give an example of a way in which you were impacted
- The (pace/ facilitation/teaching) of _____ was accessible. Strongly agree/strongly disagree
- What (facilitation/ teaching) methods were the most effective for you as a (learner/participant) (add matrix of practices used in that program/ service)
- How has your participation in _____ impacted your community and the people around you?
- During _____ did you share your skills with others or use your skills to help others? Y/N
- If so, how many people? What did you teach them? What did you help them with?

TEMPLATE: EVALUATION STRATEGY

To download editable templates, visit:
detroitcommunitytech.org/teachcommtech

Project Name:

What key concepts need to be evaluated in order to reach your curriculum goals?

What method of evaluation would be good to measure these concepts?

How will you coordinate major milestones with evaluation?

What do you want to measure?

How are these measurements connected to your curriculum?

What story do you want to be able to tell with the information you gather?

What do you plan to do with the information you gather?


What evaluation methods will work for what you want to do?

What questions do you need to ask in order to reach evaluation goals?

Curriculum Checklist

Now that you have completed the handbook, you should have what you need to begin teaching technology with your community. Here are a few questions to ask yourself after designing a project or curriculum to ensure you are practicing community technology.

- Are you responding to a need you heard articulated by the community you are working with?
- Is there community input in what information you are teaching?
- Are you shifting people from being users of technology to producers of technology?
- Do you have a strategy to involve a diverse group of community members (especially people who are usually excluded from technology)?
- Did you backward plan your lessons based on what you want learners to learn?
- Are your activities fun? Did you find ways to make the more boring and technical stuff accessible?
- Did you create moments in your curriculum for learners to reflect? To be the decision-makers? To take on the role of teachers, leaders, and experts?
- Did you give learners the chance to connect to their experiences and analyze the root causes of problems in their community?
- Do your activities address the needs of a diverse range of learners?
- Did your community collectively determine the solution to their problem? Is it the simplest solution?
- Is the community in charge of building and maintaining the technology?



“We never know how our small activities will affect others through the invisible fabric of our connectedness. In this exquisitely connected world, it’s never a question of ‘critical mass.’ It’s always about critical connections.”

- Grace Lee Boggs