

# Opening Thought

How can we motivate our young adults to be productive members of society and our work force?



# New School Proposal

**Create an after-school academy that will provide a fun environment around interdisciplinary project based learning for Charter, Public high school, home school and drop outs.**

**We will also offer a one year apprenticeship program prior to college.**

**Our mission is to get students excited about learning and have the skills to manage in today's society.**

# Needs

- Students are bored with the factory model of learning.
- Home-schoolers/Drop-out students need an environment for collaborative-interdisciplinary learning.
- A growing number of students are finding it difficult to manage the complexities of life relating to the interface of society, schools and business.

- **Mission...** Our mission is to help provide a focus to young adults who are not engaged into today's society and give them options to advance.
- To create an organization that is social responsible and educates young adults in Technology skills, Problem solving, Thinking skills and Soft-skills.
- A strong focus on Executive skills and Character development will be integrated within the process.

# What is it about?

Create a world-class non-profit educational and development organization based on interdisciplinary learning using mindset thinking ownership & engineering design as the connector

- Provide out-sourced Tec-Ed to Charter schools, Home-School and Drop Outs
- One year Apprenticeship Program prior to College
- Building a Repair Business

# Future Direction

- Create a full time school
- Life skills after-school program
- Teachers as developers...  
curriculum development

**We cannot solve our problems with the same thinking we used when we created them. Albert Einstein**

# Uniqueness

- Teachers do Development/ Research on learning
- Mindset Thinking; Ownership, Engineering,
- Organization structure is non-silo based
- Students do their own assessment on how to manage projects
- Focus on students strengths
- Learning by developing solutions to real issues

*The only source of knowledge is experience. Albert Einstein*

# Our method: Uniqueness

- Not another Silo.; Interdisciplinary
- Uses design to support real world learning.
- Students make decisions versus learning through highly scripted program.
- Integrates the learning of thinking skills, system thinking, self assessment and softskills.
- Open source for educators.
- Connection to community, education institutions, business and non-profits for learning
- Integrating assessment, reports and measurement for learning



# Mindset Thinking

- **Ownership mindset** ... think like an owner
- **Cultural engineering mindset** ... manage tasks around a project
- **Growth mindset** ... The brain is like a muscle use it or lose it
- **Team mindset:** ...work together like a winning learning team.

# Holistic Approach

## Executive functions

Character development

Habits of Mind

Empathy for others

**Society**

## Collaboration

Business processes

Measurements

Finance

**Education**

**Business**

## Learning disciplines

Problem solving

Thinking Skills

Team work



# Background: [www.projectAcademy.org](http://www.projectAcademy.org)

- Created Syllabus for 3 credit course (FSU)
- One-credit on-line course FSU
- Implemented a K-5 grade program in public schools connecting Stories to Math and Science.
- "Tufts CEEO" has received an NSF research grant(DRK-12) based on this concept.
- "WPI (K-12 program)" is using our concept with Head Start in Worcester, MA

**Connection:** Engineering design and thinking skills provides the glue (engagement, ownership, fun, innovation & collaboration) that **connects** Mathematics, Language Arts, Science, Social Studies and Soft-Skills for learning that enhances the school year.

## **Benefits of the program as a student:**

- Fun and exciting
- Lots of ways I can participate (roles )
- I can see why I need to know all disciplines(math and science, language arts, social studies, art, and sports)
- It's exciting creating new things and processes.(feel & touch)
- I'm part of making the rules



# **Start out with a problem that is both interesting and authentic.**

There is no such thing as a problem that is going to be interesting to every kid. This means that a project has to be flexible enough for students to tailor it to their own interests.

Authenticity comes from using real tools to tackle problems that don't have their answers printed at the back of the book. Ideal projects dictate some general parameters and tools, but leave the specific problem definition up to the student.

# Project based learning

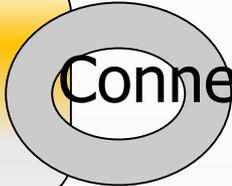


World Issues  
Project ideas  
Drivers

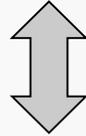


**Project**  
Activity

**Team**



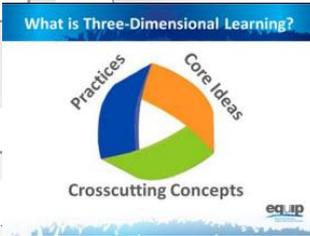
Connections



Learning  
Disciplines

- Fun/Joy Plan
- Assessment Team
- Learning Disciplines
- Connections to the Community
- Customer Support

- Thinking Skills**
- Creativity . Critical
  - Character/Strength's
  - Social Skills
  - Executive Functions
  - Questioning / Reflection



# Project Focus

- Exciting & Engaging students about learning:
  - Technology around systems that use batteries (Sensors/Actuators, IOT's,)
  - Engagement by World problems, Building a business (product repair)
  - Development of augmented reality process and repair tools ( How to use Augmented Reality tools in Society)
  - Local issues...Growing food ... Hydroponics

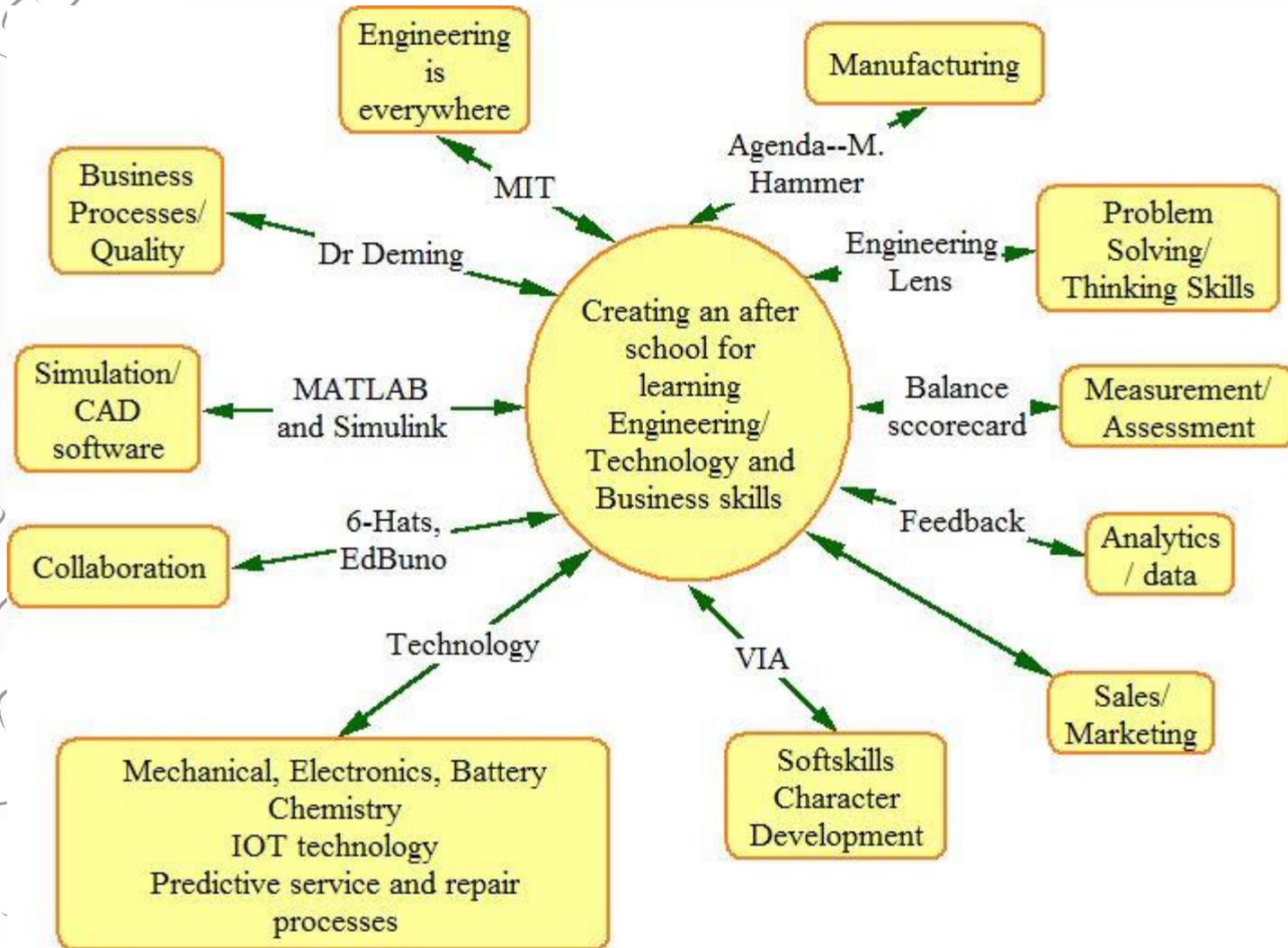
**Education is not preparation for life; education is life itself.** John Dewey



**Having a core theme of Design thinking  
(problem solving) the learning will have the  
following:**

- Relevance
- Engagement
- Collaboration
- Structure around Thinking Skills
- Innovation/ Entrepreneurship
- Ownership of learning by the students
- Risk taking

# Elements of the program



# Engagement/Themes

Themes/ Projects used as vehicles for learning: "World Issues"

Note: Rather than "the World", you can substitute "Home", "Classroom", "Village", ETC.

Feed the World  
Heal the World  
Clean the World  
Power the World  
Respect the World  
Connect the World  
Entertain the World  
Sports of the World  
Music of the World  
History of the World  
Educate the World

WPI/Nobel Skills

**Possible tools:** Elements used in the projects can vary:



- People
- Places
- Engineering
- Art / History
- Consumers
- Math. / Science
- Language Arts
- Suppliers
- Design
- Technology
- Business Processes

**We only think when we are confronted with problems. John Dewey**

# Example ... Feed the World

<b>Create team and operating guidelines</b>	<b>Pick to work on a local level ... Community</b> <ul style="list-style-type: none"><li>• <b>Braining-writing</b></li><li>• <b>Shaping</b></li><li>• <b>Decision matrix</b></li></ul> <b>... Create Hydroponic training center</b>
Frame to problem:	<ul style="list-style-type: none"><li>• What are the drivers</li><li>• Break problem in small chunks</li><li>• Find Multiple Perspectives</li><li>• <b>Create problem statement</b></li></ul>
Research:	
What's are school learning requirements	Develop program plan Develop assessment plan
Begin Plan	<ul style="list-style-type: none"><li>• Braining-writing</li><li>• Shaping</li><li>• Decision matrix</li></ul>

# Build on potential partner's experience



Learning Platform with analytics

- Lynda.com
- YouTube.com

On-demand training and skills development



Blending live online classes, dynamic course content and real-world experiences, our approach gives students the opportunity to realize their full potential. Facilitate our World Issues



Metrics and analytics

Documentation Software

<http://www.dozuki.com/>

Project Foundry

Project Foundry is a streamlined, collaborative workflow, portfolio and reporting solution for project-based learning.

# Passing trends or here to stay?

Micro-schools (most famously AltSchool, [www.altschool.com](http://www.altschool.com) ) are receiving an increasing amount of attention from both the media and investors. We asked Insiders to share their predictions.

Insiders believe micro-schools are here to stay, but don't anticipate massive scale for emerging models. Some caution that the price and micro-schools' ability to scale may slow the trend.

**Micro-Schools** ... Whiteboard advisors

# 5 Minds for the Future ...Howard Gardner

**The Creating Mind** -- the capacity to uncover and clarify new problems, questions and phenomena

**The Ethical Mind** -- fulfillment of one's responsibilities as a worker and as a citizen.

**The Synthesizing Mind** -- the ability to integrate ideas from different disciplines or spheres into a coherent whole and to communicate that integration to others.

**The Respectful Mind** -- awareness of and appreciation for differences among human beings and human groups

**The Disciplinary Mind** -- the mastery of major schools of thought (including science, mathematics, and history) and of at least one professional craft.

Howard Gardner ... Harvard Ed School, creator of the multiple learning styles

# Business Model

## **Income:**

- Fee for outsource TecEd. resources
- Selling education curriculum
- School revenue

## **Expenses:**

- Facility
- Team
- Supplies
- Capital equipment
- Insurance

# Looking for Feedback and Partners!

- My thoughts
- Where do you see the after-school market going?
- Could this become a full day school?

**Need support in start-up funds for 6 months to develop plans, build initial team and contact partners. \$60k**

- **Lawyer, Office, Staffing,**



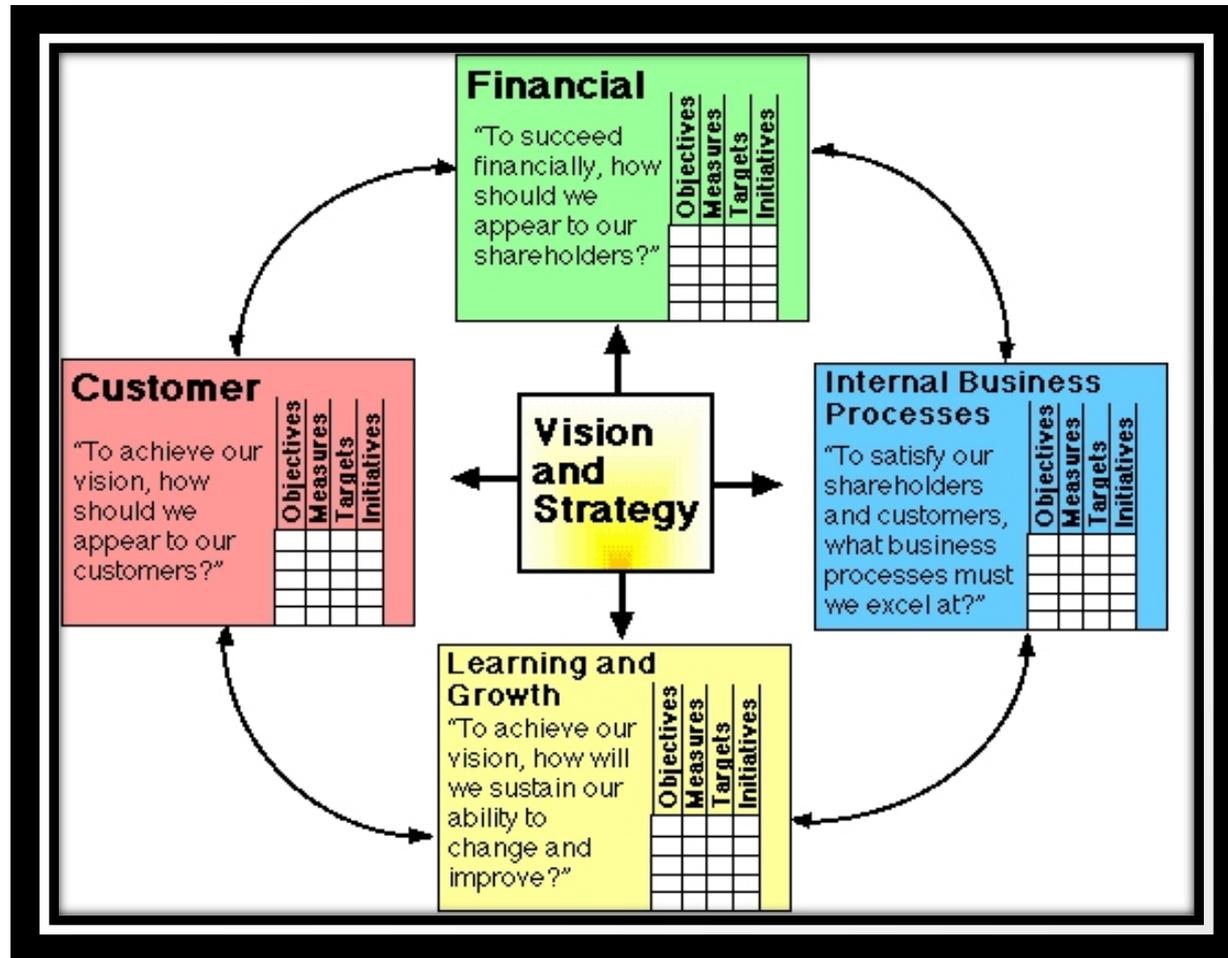
How can your skills be used to  
create better traits for our future  
citizens?

**Thank you**

*Project Academy*



# Setting Measurements for learning





**Mission...** Our mission is to provide the best learning experience for students that engage them with the love of learning and the tools to be lifelong learners in a supportive environment. Our approach will use project based learning with the students creating projects to solve real society problems using technologies.

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- **Vision...** we believe in providing the best learning environment for young adults to learn relevant technologies while solving world problems. Our students should become socially responsive and productive citizens in our society. Learning development by the staff will be a key factor of the school by encouraging development and research in teaching aids and diagnostics, allowing for predictive service and repair processes.

- **Goals...** the following goals will be established to meet our initial mission

- Create a facility that will allow the student training and building a business model to solve world problems ... one year
- Establish the legal documents for the organization ... 6 months
- Establish a relationship with an electric bike repair shop... 3 months
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- **Measurements/ Assessments** ... We will establish a Balance scorecard approach for the organization as well as learning goal/ outcomes for the students. The students will understand why we are doing this and have an input on what they want to achieve ... 6 months

- **Deliverables...**

- Curriculum and syllabus
- Annual report
- Web site

- **Finance:** The organization will be a non-profit entity and raise funds to pay for the development and operation.

- **People:** the initial team will be three people composing of:

- Engineer familiar with IOT, augmented reality for T/S.

- Education specialist (2)



## **Rules of Brainstorming**

- ✓ Quantity, not quality.**
- ✓ Withhold criticism.**
- ✓ Encourage unusual ideas.**
- ✓ Build on others' ideas.**
- ✓ Think in advance.**

# Shaping Ideas

**Why generate crazy ideas?**

**So you can shape the into innovative ideas!**

Leaves falling on the lawn...

Use a leaf  
blower

!



!?

Trees that  
pick up

!!!???

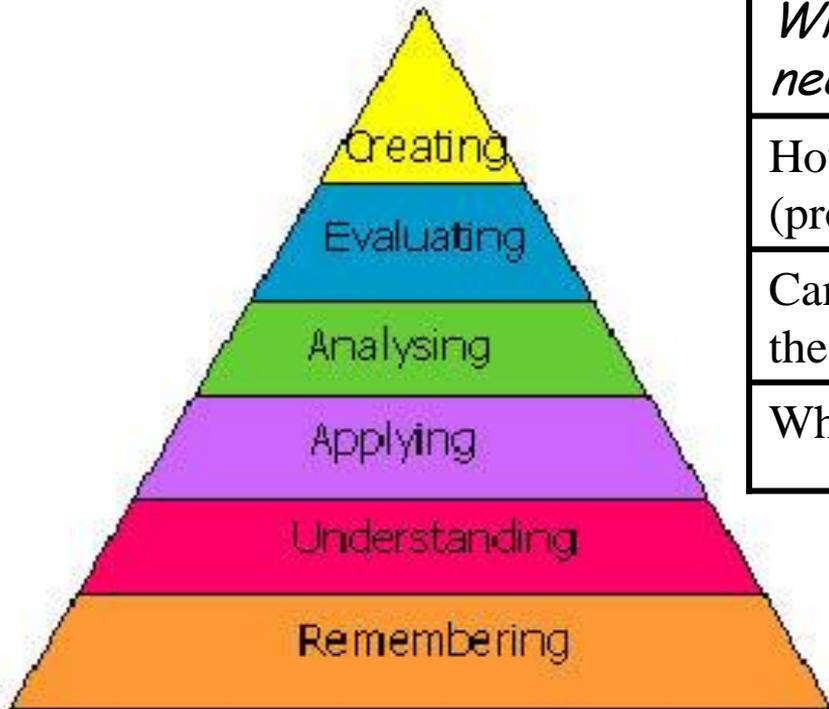
magic

# Decision matrix

Use a scale of 1-10 to judge the ideas

Requirements	Importance of the Reqr. (Weight )		
Use of Science	9		
Safety			
Uses easy to find materials			
Parts can be re-used			
<b>Total=</b>			

# Revised Bloom

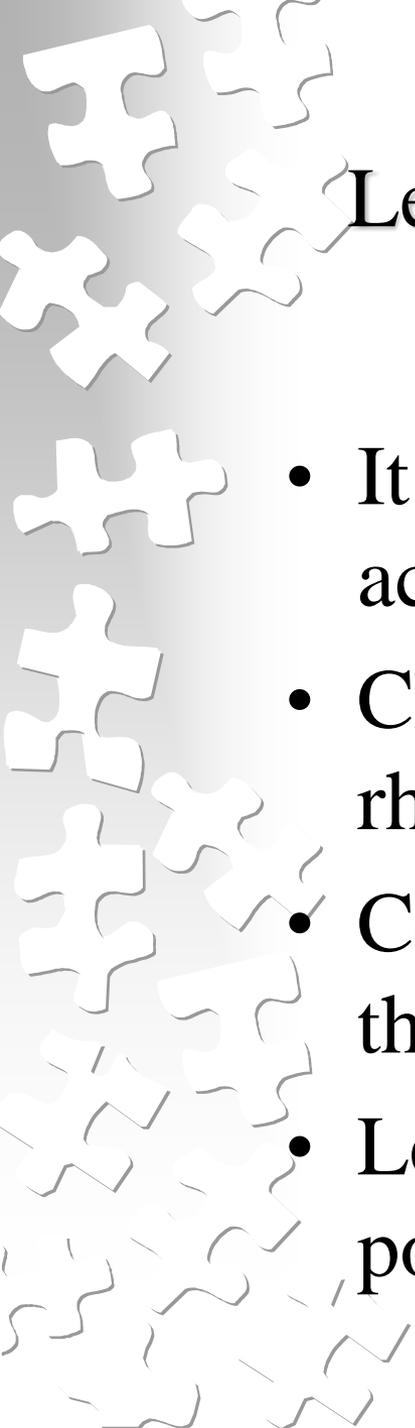


*Which design challenge best fits our needs?*

How can we connect these design challenges (problems) to science and math

Can you find any problems or issues that some of the characters are having?

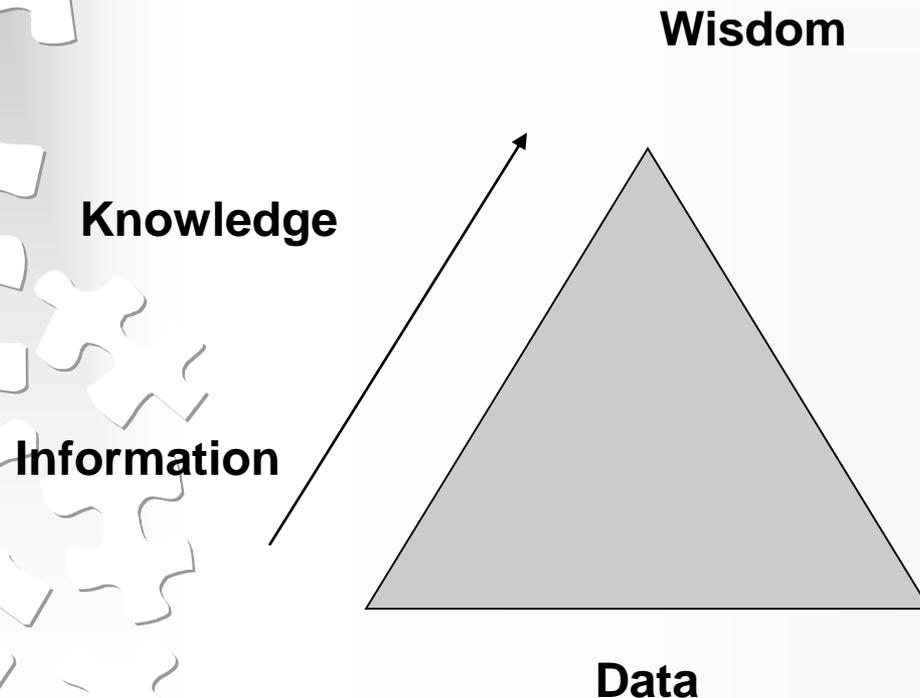
What happens in the story?



## Learning is so much more than a transfer of information

- It can mean wholeness, empowerment, actualization, liberation
- Children naturally follow their interests and rhythms
- Consider mistakes as information rather than something wrong.
- Learning is discovering that something is possible.

It's not failure to fall short of realizing all that we might dream. The failure is to fall short of dreaming all that we might realize ... Dee Hock



## **Need to step back from the data;**

Pondering, discussing, wondering, contemplating, musing, reflecting ... all of which is needed to notice patterns, stories, relationships and interactions.

## Track Assets rather than Deficits

A child tracks success and discards failures.

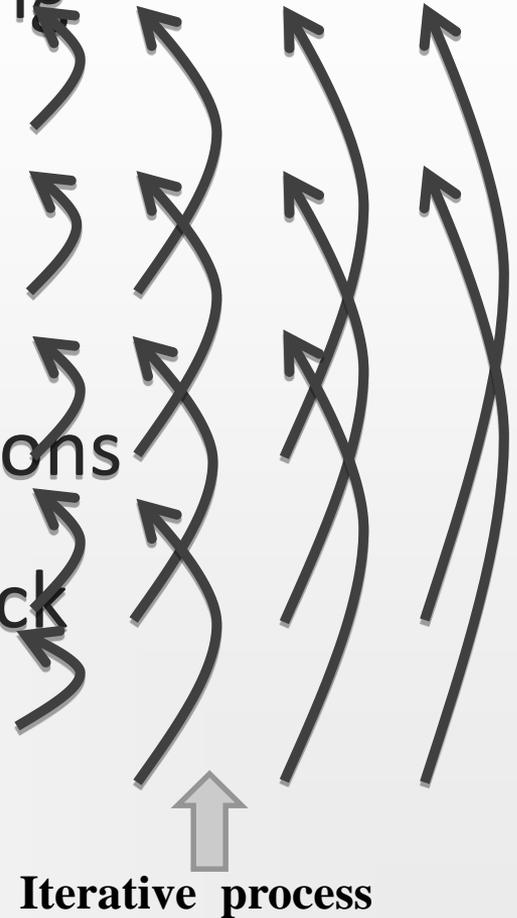
In schools we track failures. As a consequence, we tend to deskill our children, train them in their incompetence, and interfere with their natural passion to learn.

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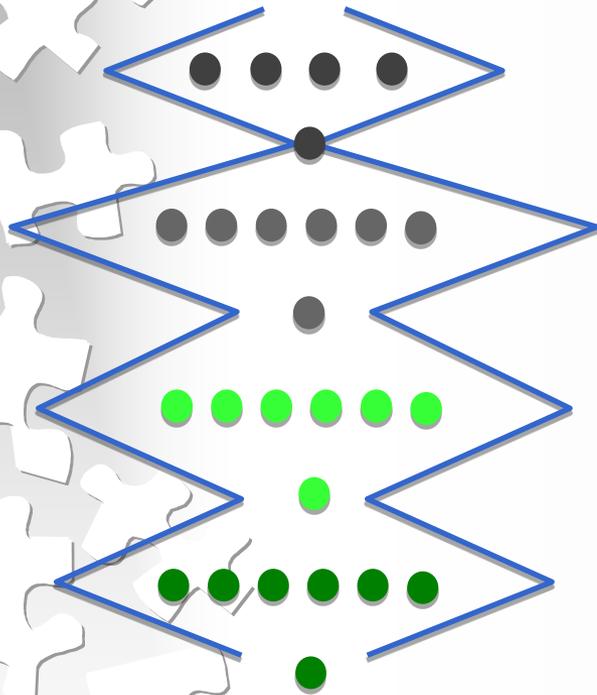
We teach child to be aware of all the things that are wrong with them.

# Problem Solving

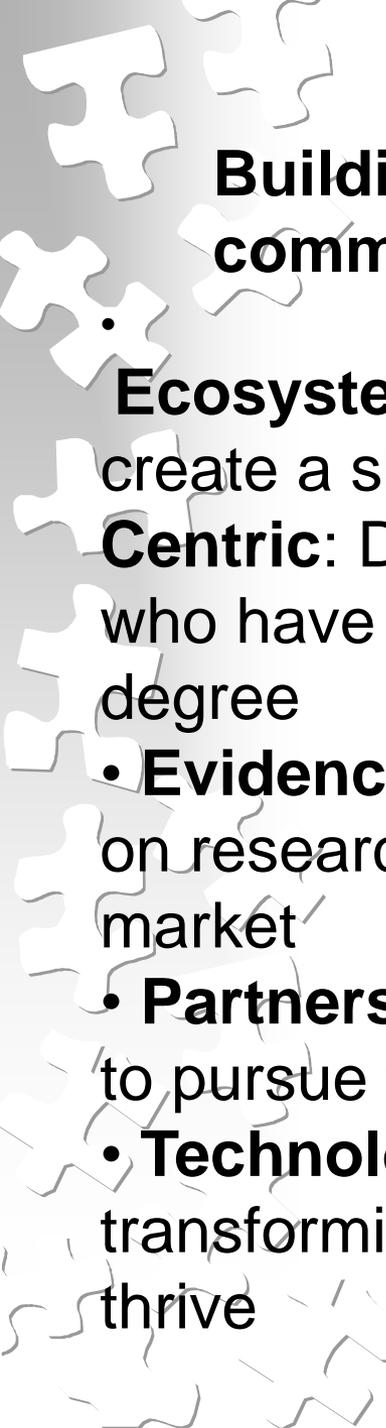
- Problem Framing
- Requirements
- Many Designs
- Pick a few Solutions
- Testing/ Feedback
- Reporting



Iterative process



Divergent/Convergent thinking



## **Building a skills-based labor market requires a commitment to being:**

- **Ecosystem Focused:** Engage with existing players to create a skills-based labor market
- **Skilled-Worker Centric:** Design initiatives to reach and support job seekers who have completed high school but do not have a college degree
- **Evidence Based:** Create and iterate approaches based on research and experience with partners across the labor market
- **Partnership Oriented:** Collaborate with existing players to pursue the fastest, most effective path to change
- **Technology Enabled:** Harness the technologies and data transforming the economy to help companies and workers thrive