

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.

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.

Sources:

<http://www.eschoolnews.com/2015/08/03/innovative-classroom-490/>



What are we doing?

Create an in-school/ 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 curriculum to school organizations and PD to set-up their own program.

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

Our Mission:

- Get students excited about learning (life-long learners).
- Have the reasoning skills to manage in today's society and begin to build a set of skills to use in multiple careers.
- Understand that problems are opportunities. The bigger the problem, the bigger the opportunity.

<https://youtu.be/f9LM88h-I-U>

- Have students better prepared for college or a career.

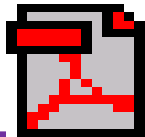


Ties in with State Needs:

The Office of College and Career Readiness contributes to the Department of Elementary and Secondary Education's (ESE) statewide effort to help prepare students for "*Success After High School*."

Massachusetts Definition of College and Career Readiness

In winter/spring 2013, The Massachusetts Board of Higher Education (BHE) and Board of Elementary and Secondary Education (BESE) approved the state's new **college and career readiness definition**



College and Career Readiness: Definition

Being college and career ready means that an individual has the knowledge and skills necessary for success in postsecondary education and economically viable career pathways in a 21st century

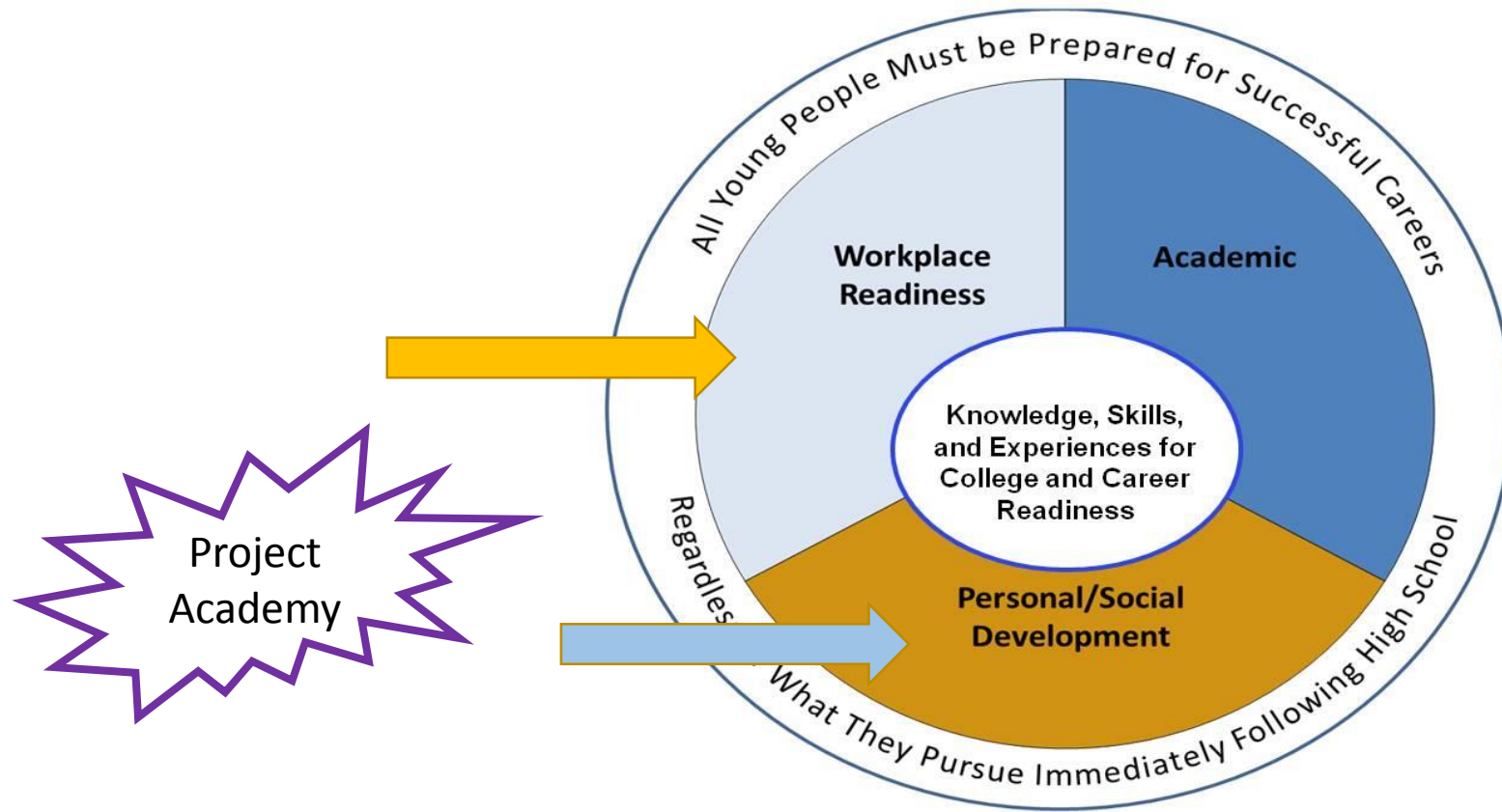


Exhibit A - Defining Career Readiness

Domains	Competencies for Success	Examples of Experiences that Build Career Readiness
A. Academic	<p>Knowledge of Core Subject Areas as depicted in CommonCore Standards and MassCore:</p> <ol style="list-style-type: none">1. Four years of English2. Four years of mathematics3. Three years of lab-based science4. Three years of history5. Two years of the same foreign language6. One year of an arts program7. Five additional "core" courses such as business education, health, and technology <p>Graduation Requirements in MA maintain that students must complete courses in American History & Civics and Physical Education as well as pass the grade 10 MCAS tests in the English Language Arts, Mathematics and one of the four high school Science and Technology Engineering tests</p>	<p>Lifelong Learning Skills and Literacies Developed in Core Courses including:</p> <ul style="list-style-type: none">▪ Scientific literacy▪ Information literacy▪ Economic literacy▪ Civic awareness▪ Mathematical reasoning▪ Reading skills▪ Study skills <p>Applied Academics: a chance to observe, try, and demonstrate academic skills in a variety of classroom, community and workplace settings, including:</p> <ul style="list-style-type: none">▪ writing for a school newspaper▪ participating in an environmental advocacy campaign▪ writing a business plan▪ creating exhibits for a local history museum
B. Workplace Readiness	<ol style="list-style-type: none">1. Career Exploration and Navigation2. Communication: <i>[Listening, Speaking, Writing, and Nonverbal Communication]</i>3. Critical Thinking, Problem Solving, and Creativity4. Teamwork and Collaboration5. Professionalism: <i>[Timeliness, Appropriate Dress, Respect, Adaptability]</i>6. Technical skills: <i>[Information Management and Digital Media Applications]</i>7. Knowing How to Learn	<ul style="list-style-type: none">▪ Jobs and/or Internships▪ Career Development Activities, including workshops, guest speakers, job shadows, and field trips▪ Career Vocational Technical Education (CVTE)▪ Career Electives▪ Career-Themed Schools or Career Academies▪ Classroom, Community and Workplace Projects▪ STEM After-School Programs, Science Fairs, Robotics programs▪ Community Service Learning▪ Contextual Learning and Applied Learning Projects
C. Personal/ Social Development	<ol style="list-style-type: none">1. Planning, Time Management and Goal-Setting Skills2. Motivation, Initiative and Persistence3. Ethical Decision Making4. Self-Confidence and Self-Efficacy5. Civic Engagement, Stewardship, and Cultural Competency6. Healthy Behavior7. Personal Financial Management	<ul style="list-style-type: none">▪ Future Planning and Exploration Activities, including "Your Plan for College" and other structured college and career planning tools▪ Mass Model for Comprehensive School Counseling▪ After-School Programs▪ School Leadership Roles▪ Student Government▪ Community Service Learning Experiences▪ Contextual Learning Projects

**Harvest
Workplace
Readiness
& Personal/ Social
Development Skills**
While solving a world
problem using P.B.L
skills.

Facilitator on the side
With Questions

Our method: Uniqueness

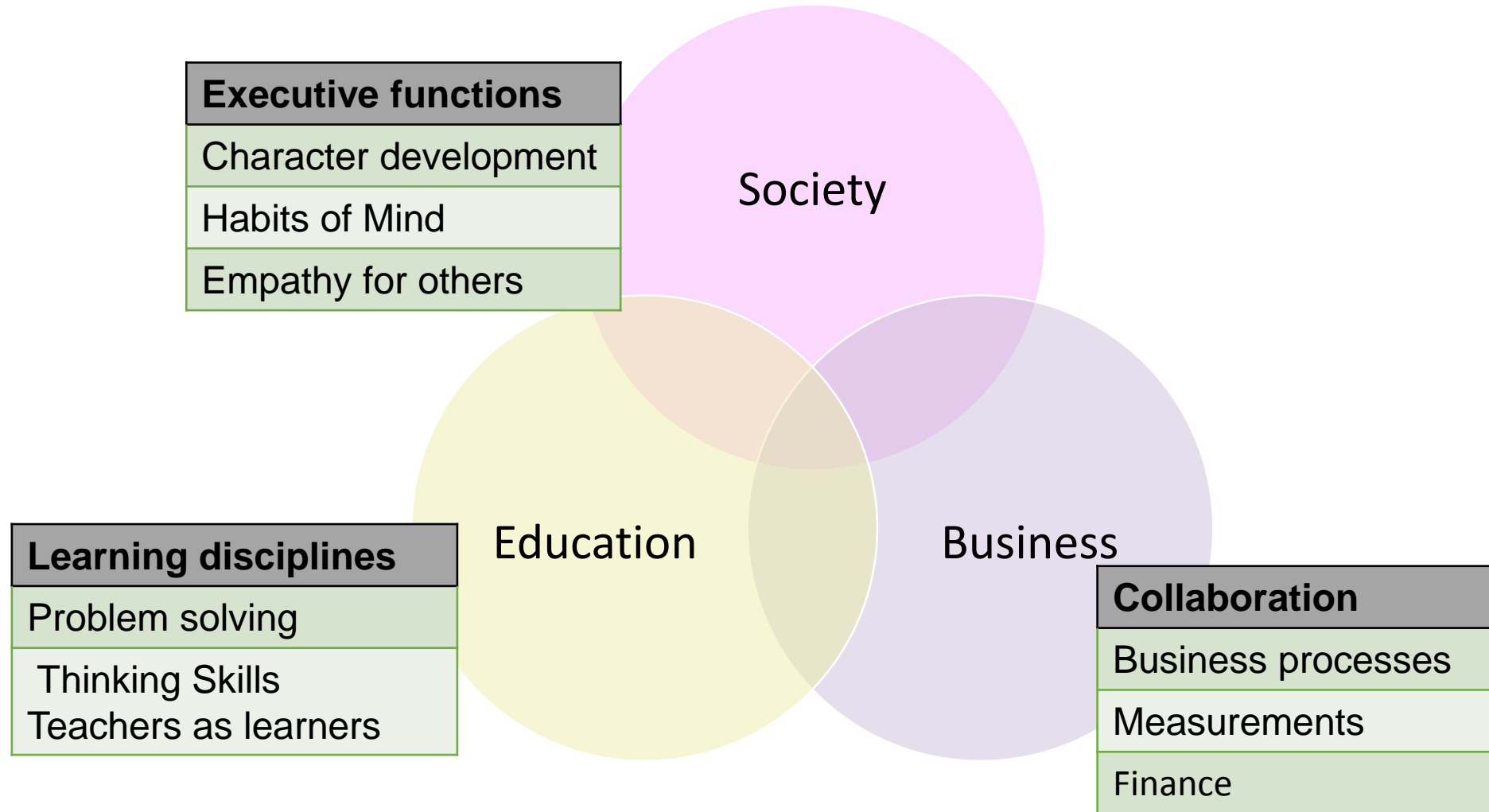
- Not another Silo.; Interdisciplinary
- Uses design to support real world learning.
- Students make decisions versus learning through highly scripted program.
- Integrates existing learning institutions and utilizes their material as part of the process (character.org, Mindtools)
- Team bring a strong focus on engineering design and business skills.
- Integrates assessment, continuous improvement and measurement for learning

Supports academic learning ...learning life skills

A growing body of research, drawn from the science of child development, demonstrates the extent of the impact that nonacademic and social-emotional skills such as self-regulation, problem-solving, social awareness, and growth mindset-have on academic outcomes and success in the workforce and in life. While some label these skills as supplemental, recent studies have shown that what we have long considered to be the softer side of education is requisite for success.

*Nonacademic Skills Are the Necessary Foundation for Learning
By K. Brooke Stafford-Brizard Education Week July 22, 2016*

Life Skills (Holistic Approach)



Key learning elements:

- Creating and having a strong organizational culture.
- Using questioning, why, what and how are we doing activities.
- Creating learning targets...How will I be successful. measurements & feedback.
- Developing a team mind-set. Teams build character, culture and community.
- Understanding brain plasticity... growth mindset.
- Internalize the problem solving process.
- The benefits of continuous improvement and excellence.

Create a Problem to Solve ... PBL

- Use the life skills along the way that you use to solve the problem
- Create learning elements around those life skills

- PBL is not enough... *Students must be cognitively aware of the skills they are using*
- Reflection on their action

World Problems / Community Problems

We only think when we are confronted with problems. [John Dewey](#)

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

Record the World visual stories

Recycle the World

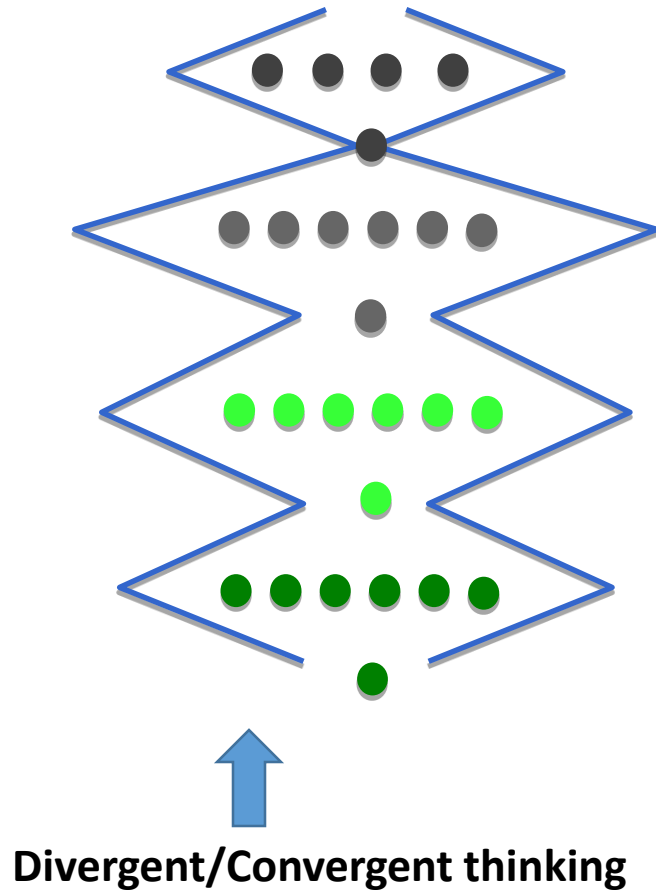
WPI/Engineeringlens

Other possible problems that could be worked on are [the Grand Challenge](#) for engineering determined by the National Academy of Engineering.

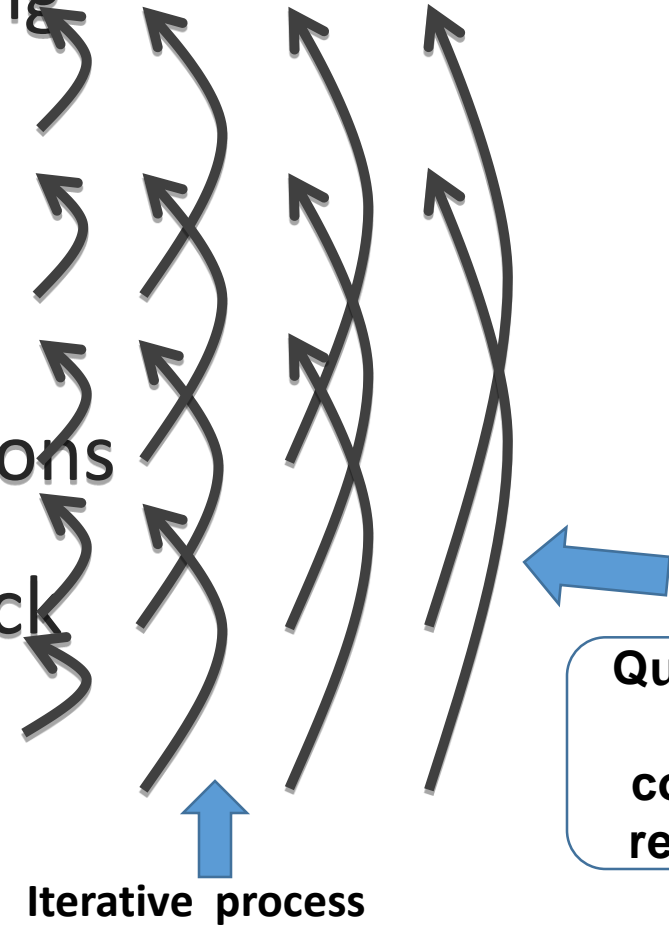


Look how rich the process is:

Problem Solving



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



Questions,
Meta-
cognitive
reflection

Community



Example Projects:

Need to focus problems that the students can be successful

Heal the World	How can we get our leaders to listen to each other and begin to get a caring community re-started? Bring in Business & Community organizations Can we first apply it locally?
Recycle the World	How can we create a recycling business in our community that focuses on senior citizens and has one aspect of helping them improve their exercise rate? Bring in the Callahan senior center as advisors.

Team Mindset

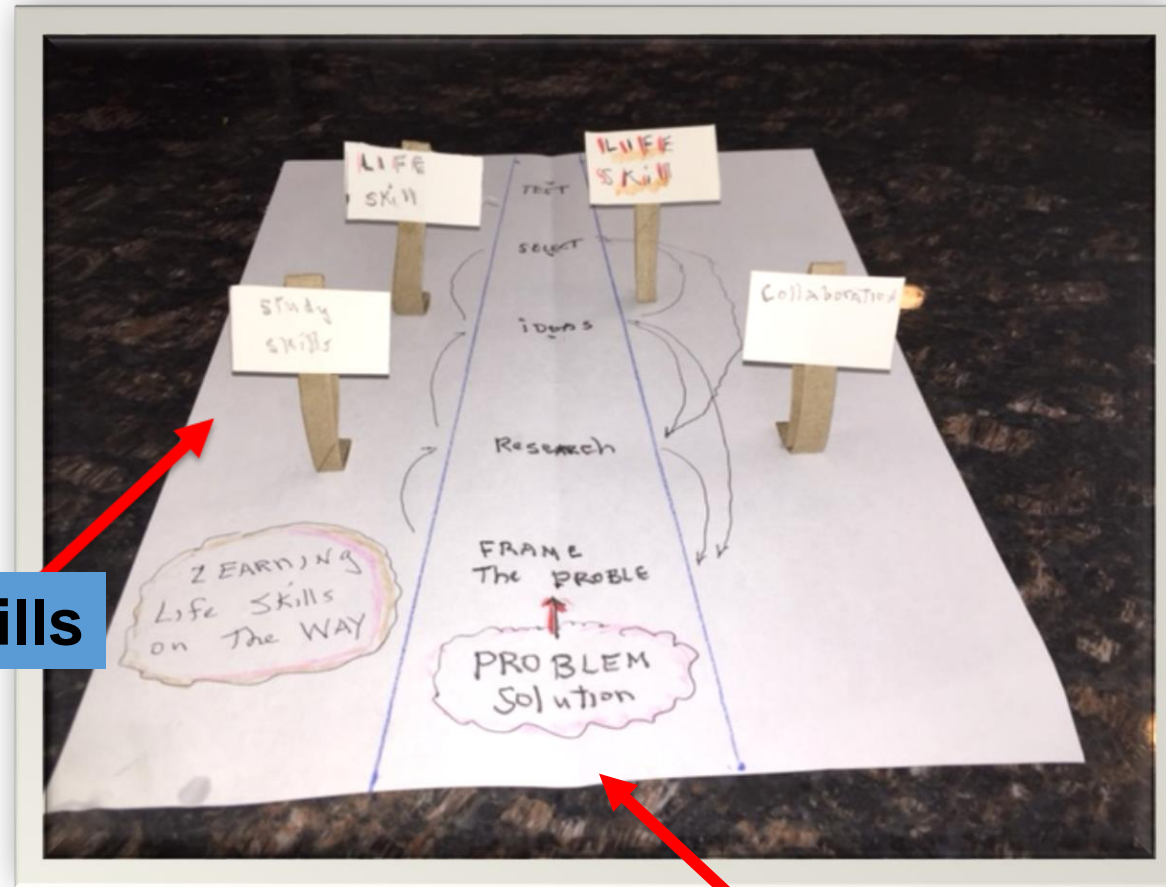
- To prepare the student for the workplace by providing opportunities to learn social and organizational skills
- To improve the educational experience thru collaboration with fellow students.

- Create the team charter
- Roles
- Operating norms
- Project management

Project Uniqueness:

One page Skill sheet

Life Skills



Start of Project

Skills Harvested

Project Formation:

- Creative and Critical thinking
- Questioning
- Reflection

Planning and Scheduling

- Time management
- Financial literacy
- Measurements/ Feedback
- Quality systems

Dealing/ Collaboration

- Self-control
- Flexibility
- Character traits

Problem Solving / Process

- Innovation
- Risk taking
- Entrepreneurship

Team Formation;

- **Values/ Culture / organization**
- **Negotiation**
- **Decision making**
- **Collaboration**
- **Social skills (listening, self-image, non-verbal)**

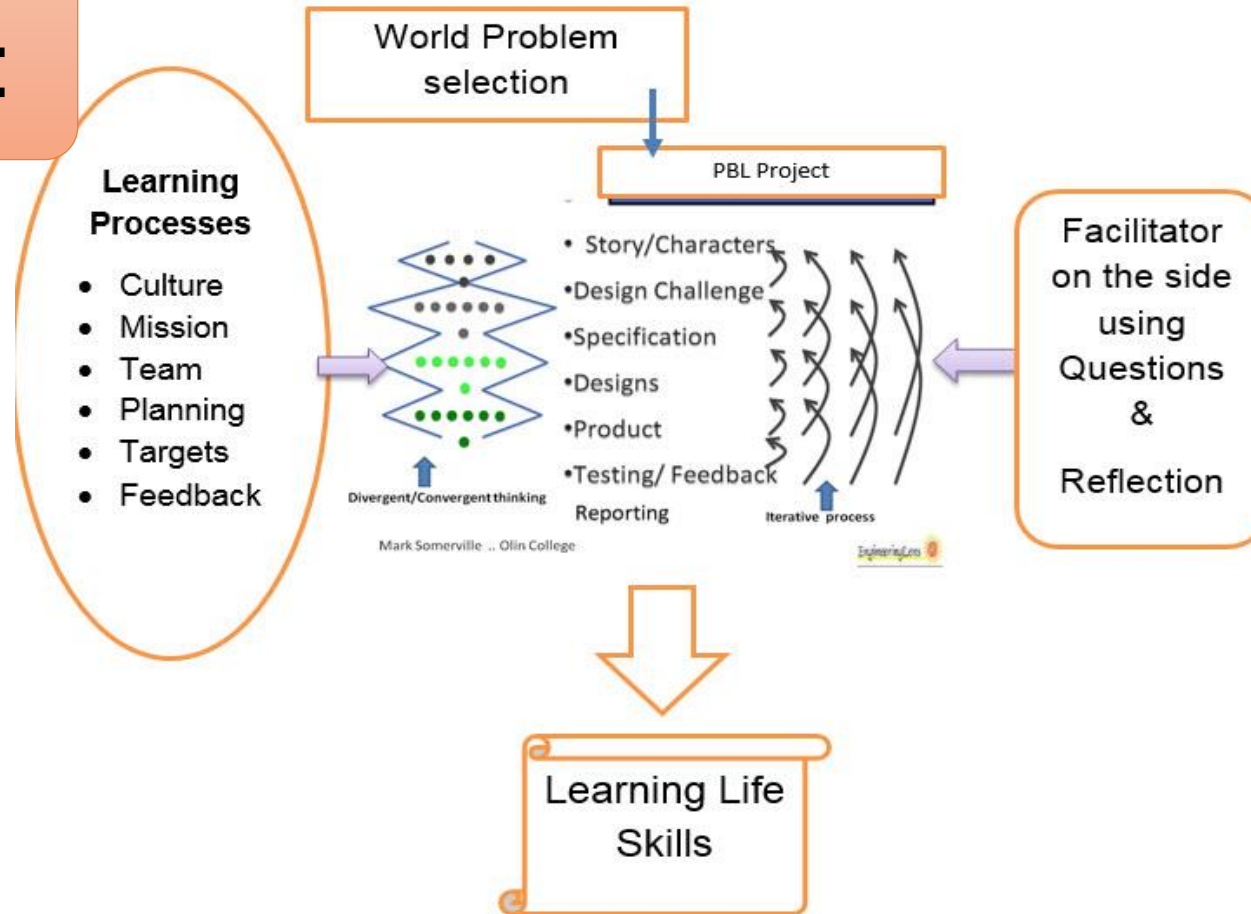
How do we operate?

we will act as a facilitator using **questions** to get the students to design their process and operating ground rules.

- What is the definition of the process?
- How should it operate?
- How does it compare to a other processes?
- What are our roles?
- How am I successful?
- How do we communicate and collaborate together?

Summary Sheet:

Learning Skills for Society and Business using PBL



One page Skill sheet

Problem Solving	Financial literacy	Time management
Thinking skills	Character traits	Self-control/ Values
Collaboration	Continuous improvement/ Quality	Process methods
Measurements/ Feedback	Planning	Risk taking/Stretch goals
Learning from failure	Entrepreneurship	Innovation
Study Skills	Negotiation	

About us?

- Non-profit ... MA State
- Previous success with “Engineering Lens” ...
- Building an organization ...
- Looking for early adaptors
- Looking for community partners/ business
- Talking to stakeholders about needs
- Looking for partners who want to be part of helping society



Thank you

Additional questions?

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Project Academy

