

MME Refresher Course



Creating Projects vs
Creating Groups



Inviting Students



Monitoring Projects

STEM Challenge Professional Development 2020

October 15 2020




Welcome

ISTI welcomes you to the 2020-21 STEM Challenge Professional Development. We are excited to partner with 20 schools and 13 corporate partners this year!



What's in the room?



In the chat box, type one or two words that describe how you are feeling.

You can send it to everyone or privately message me if you are more comfortable.



Acknowledging trauma.

Students, teachers, and community.





01

8:30-8:45

Optional MME
Refresher



02

9:00-9:15

Brief welcome
from ISTI Staff



03

9:15-11:15

Design
Thinking in a
Virtual World



04

11:15-11:20

First Break



05

11:20-12:00

Designing Effective
Events - Major
Milestones and how
to get there



06

12:00-12:10

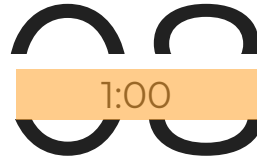
Grab lunch!



07

12:10-1:00

All things MME-
Roll out and
ongoing
communication



08

1:00

Specific Roles
and Chain of
Command (New
Teacher only)



09

1:00

Veteran teacher
breakout (1+ years
with ISTI)



Logistics

Zoom-
Breakouts/Chat/Polls

Digital Teacher Folder

Monthly Emails

A Year In Review



90%

Of students reported improved confidence in STEM skills - with higher increases for females and students of color



100%

Of teachers reported seeing improved STEM skills from students



90%

Of students reported their interest in pursuing STEM increased or stayed the same



73%

Of students reported working with a professional mentor for the first time


Design Thinking

Gail Rost, Senior Design Strategist
Educational Partnerships K-14
University of Illinois, Urbana
Champaign



Break

https://cte-s.education.illinois.edu/dotnet/laces/Tools.aspx/PDH_Evaluation_Create?event_id=92



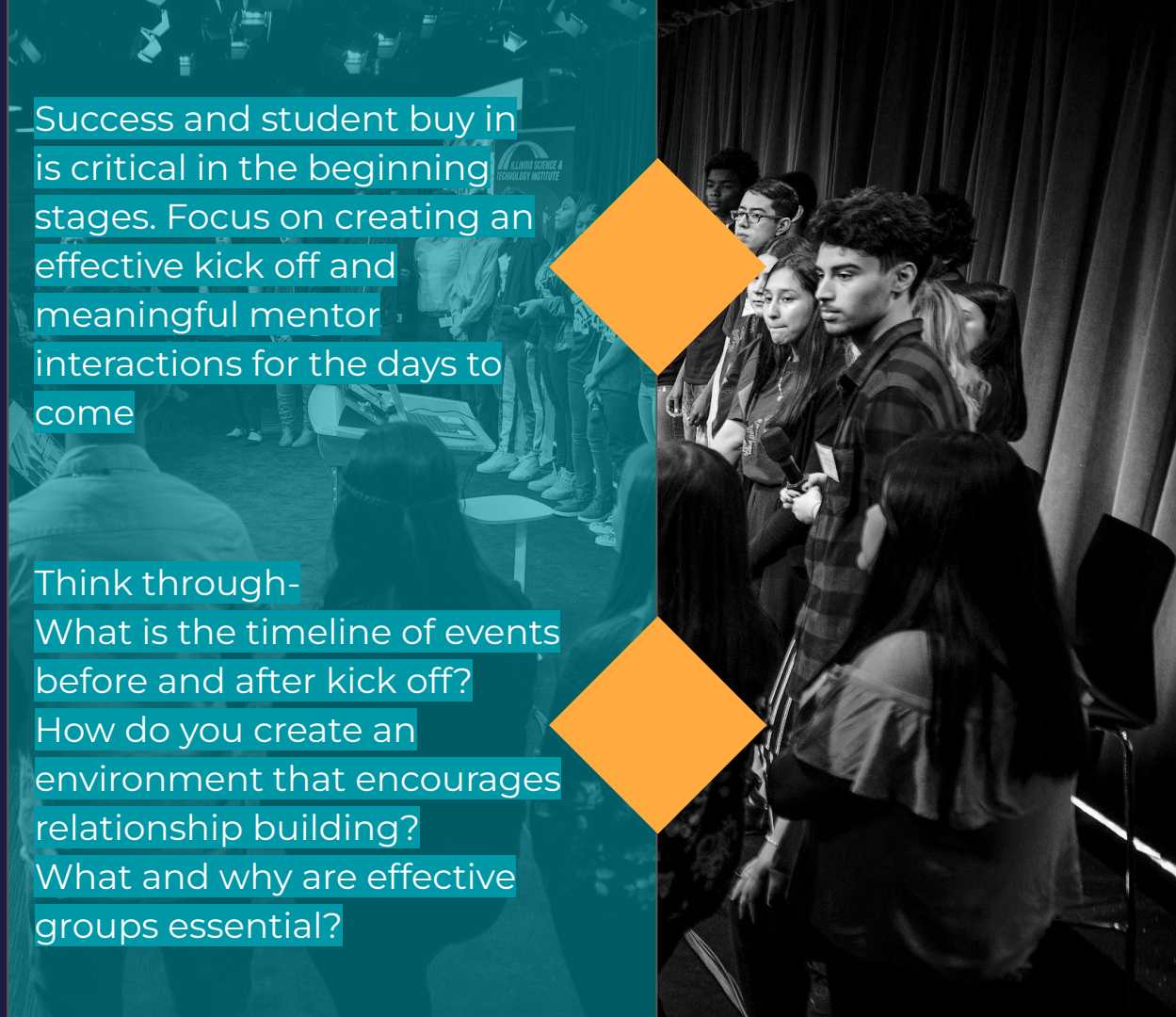
To Kick Off and Beyond

Designing Effective
Events and How to
Get There

Designing an Effective Kick Off and all that follows

Success and student buy in is critical in the beginning stages. Focus on creating an effective kick off and meaningful mentor interactions for the days to come

Think through-
What is the timeline of events before and after kick off?
How do you create an environment that encourages relationship building?
What and why are effective groups essential?



01

Coach Call
Before Kick off

02

MME Roll Out
Before Kick off

03

**Upload Students
to MME**
Before Kick off

04

**Create student
projects**
Before Kick off

05

**Complete and Share
Agenda**
Before Kick off

06

Kick Off Date

07

First post to mentors
Directly after Kick off

08

**Designated day to
post**

Creating the right environment IRL

01

What will the event actually look like?

02

Ice Breakers

03

Physical space to meet groups

04

Time to brainstorm

05

Creating collaborative expectations

Creating the right environment Virtually

01

What will the event actually look like?

Schedule a Run through

03

Virtual space to meet groups

04

Time to brainstorm/
ask questions

02

Ice Breakers

05

Creating collaborative expectations

Creating the right groups

Every student has a strength, use it strategically.



Translator



Visualizer



Strategizer

GUIDES are...

- Responsible for ensuring team members are on track
- Responsible for “picking up slack” in the event of team member absence
- **Deliverable:** MME & ...

TRANSLATORS are...

- Responsible for communicating directions and procedures with teams
- Responsible for communicating mentor messages/feedback to team
- **Deliverable:** MME (primary) &

VISUALIZERS are...

- Responsible for ensuring a **creative** solution that meets the needs of the client
- Responsible for overseeing prototype and final presentation development
- **Deliverable:**

STRATEGIZERS are...

- Responsible for overseeing research and development
- Ensures group is on track with project timeline according to the team’s Gantt Chart
- **Deliverable:**

EXPECTATIONS

- Each individual will be responsible for submitting work to show the team’s progress (see **Deliverable** under each role)

Creating the right experience

Trauma informed practices

01

Perfectionism

02

Impatience/Urgency

03

Defensiveness/
Preservation of
Power

04

Only One Right Way

Dismantling Supremacy Culture

attitude/behavior Perfectionism

description Focus on inadequacies; mistakes reflect badly on the person; lack of growth mindset

- antidote**
- Develop a culture of appreciation, where the organization takes time to make sure that people's work and efforts are appreciated
 - Develop a learning organization, where it is expected that everyone will make mistakes and those mistakes offer opportunities for learning
 - **Create an environment where people can recognize that mistakes sometimes lead to positive results**
 - Separate the person from the mistake; when offering feedback, always speak to the things that went well before offering criticism

Dismantling Supremacy Culture

attitude/behavior Sense of Urgency / Impatience

description Continued sense of urgency that makes it difficult to take time to be inclusive

- antidote**
- Recognition that things take as long as they take, rather than how long you want them to take
 - Learn from past experience how long things will take
 - **Mutually developing timelines and goals**
 - Recognize barriers or obstacles to different students for meeting the same timelines
 - Demonstrate a commitment to taking the time needed to achieve an objective

Dismantling Supremacy Culture

attitude/behavior Defensiveness / Preservation of Power

description Structure is set up and much energy spent trying to prevent abuse and protect power as it exists; criticism of those with power is viewed as threatening and inappropriate;

- antidote**
- Understand that structure cannot in and of itself facilitate or prevent abuse
 - **Seek opportunities to share or redistribute power**
 - Understand the link between defensiveness and fear (of losing power, losing face, losing comfort, losing privilege)
 - Give people credit for being able to handle more than you think
 - Discuss the ways in which defensiveness or resistance to new ideas gets in the way of the mission

Dismantling Supremacy Culture

attitude/behavior Only One Right Way

description Belief there is one right way to do things and once people are introduced to the right way, they will see the light and adopt it; when they do not adapt or change, then something is wrong with them (the other, those not changing), not with us (those who 'know' the right way)

- antidote**
- **Accept that there are many ways to get to the same goal**
 - Develop the ability to notice when people do things differently and how those different ways might improve your approach
 - When working with communities from a different culture than yours or your organization's, be clear that you have some learning to do about the communities' ways of doing

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Link up - Think Backwards

What do you want accomplished at the end of the process?

How do you want to evaluate your students?

How will you gauge their progress throughout the process?


Consider sharing that with the mentors and students at the kick off.

Presentations cover process



Rubrics for Evaluation

How can you create clear and mutual expectations from the start?



Takeda Research Challenge



Medication Adherence In the Elderly

Problem

→ How can we improve medicine adherence in patients treated for depression?

350 million:

Number of people worldwide who suffer from depression.



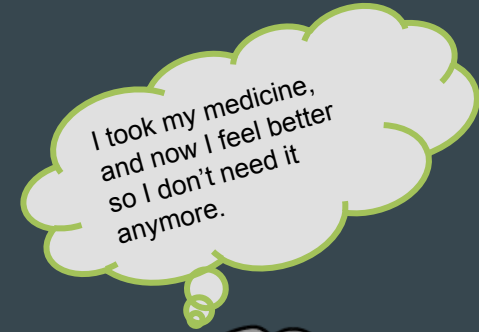
16 million:

Number of U.S. adults who had at least one major depressive episode in 2012.

Women are more likely to be diagnosed with depression than men.

Research Process

- We first narrowed our focus to the elderly (65+)
- We then narrowed our question to deal with self-prescribed stopping and/or misuse of medication.



Research Process

- After narrowing our focus we researched why the elderly would misuse or stop taking medication:
 - Unpleasant side effects
 - The half-life of the medication can alter perceptions of the medicine's effectiveness
- Our motive to prevent these issues led us to focus on visits to the pharmacy.

What is half life?

- Half life refers to the amount of time it takes for a drug to build up until the effects are felt.
- How long it would take before one feels a recurrence of the negative symptoms after they stop taking the medication.

Solution

- An “active listening” questionnaire sheet that all pharmacies would be required to use when dealing with elderly patients



How will this work?

- When picking up his/her medication, the patient will be taken aside by a pharmacist to fill out the question sheet.



What will this do?

- Our solution provides a simple way for elderly patients to actively retain information about their medication that would not otherwise be accessible.

Patient Name: _____

Name of Medication: _____

Medication Check-In

1. What does this medication do?
2. How often do I take my medication (at what time)? Will it affect my sleep routine?
3. About how much time will it take before I begin to feel the effects of my medication?
4. If I were to stop taking my medication because I feel better, about how much time will it be before the negative symptoms come back?
5. What are the most common side effects? Will they interfere with my daily routine and/or become life-threatening?
6. Will I feel the side effects of my medication before I feel the positive effects of the medication? If so, about how long after I feel the side effects will I feel the benefits?

Next Refill Pick-Up Date: _____.

Caveats

- Patients unwilling to fill out form
 - ◆ Not convinced that it is necessary
- Patients have too many medications to keep track of
- Time constraints for pharmacists and patients

This is a waste of time and I don't need to be doing this.



Our Response

- Kiosk separate from the line
- Complete questionnaire while waiting for pickup
- Active listening sheet required for pickup
- Refill medications separately
 - ◆ Can provide a chart for easy organization

The future of our product

- Our product can not only improve medication adherence, but it also offers a **simple** and **inexpensive** way to incorporate adherence support into pharmacies.



What was effective?



Timeline of Preparation



Timing is imperative for momentum on a long term project.

Phases are great resources to map out days or weeks of work.

01

Pre Kick Off
*October-
December*

02

Kick Off
January

03

**Ongoing MME
Engagement**
January- April

04

**Student Share
Out**
March- April

05

Showcase Event
April

06

**Post Program
Evaluation**
May





Your Turn

Kick off agenda and planning activity.

- Student and teacher questions
- Student issues should be resolved by/during kick off

Due to time constraints we will not be able to finish this by today.

Agenda must be shared at the time of request for a Kick Off

Lunch

Go get some chow
and hustle back



Students, meet MME

Laying a Foundation
for Success

A decorative graphic consisting of a vertical column of seven diamonds. The diamonds are arranged in a staggered pattern, with the top and bottom diamonds being teal, and the middle five diamonds being orange. The diamonds are separated by white gaps.

Rolling out MME

To better prepare ongoing communication, we are excited to share a **new resource** with all of you to help roll out MME to your students. Our hope is that it will **set the foundation to engaging and productive relationships** directly following the kick off event.

We will help you answer the questions: What is MME? Who are the key participants? How does it work? Why is it a unique opportunity? How do we facilitate effective communication from start to finish?

The Mentor Matching Engine

The Mentor Matching is an online platform that connects students and teachers with professionals in a wide variety of industries.

MME was designed for students to safely and easily communicate with professionals on a weekly, ongoing basis.



[About](#)

[Help Center](#)

Go beyond the classroom with
MME.

Log In



Email Address



Password

4

4

Key Participants

01

Students - Invited by
Teachers

02

Mentors - Represent
the partner company

03

Teachers -
monitoring

04

Coaches - helping if
necessary

05

ISTI - monitoring
and matching

Functionality



Creating a profile



Creating a project



Creating an introduction

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Opportunity for something unique

Only “20” schools statewide are participating in the STEM Challenge program. You were chosen by “Microsoft” because you are the future of Illinois innovation. They want to train the future workforce. These are skills you need to work for a company like microsoft.

ISTI along with your teachers will help facilitate the challenge, but you are now in control. You will connect with your mentors in person and virtually to tackle a real world challenge.



Your Challenge

Use student letter to introduce the challenge/ decide grouping



Effective Communication

Effective communication is not intuitive for many students. Model and explain how that might look.

Use greetings

Be proactive if you have not heard back.

Pose questions, even in an update

Include summaries after video conferencing



Essential Posts

01

Initial Posts

02

Pivot/Narrow
Down

03

Nudge

04

Summary/Recap

05

Updates

06

Alert of
Break



STEM Challenge MME Game



Online communication is essential for the success of this challenge. Using the examples below identify key elements for a successful post and classify each one. Think through the different types of posts your students may make and what is needed to make each one successful.

Use the following categories to label each post; First post, Recap, Nudge, Update, Alert of Break, Pivot/Narrow. Each label will only be used once.

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Student Example 1

Hi everyone,

We are starting to test how we can transfer water from one location to another using the water pump we purchased. We want to figure this out first before we add the filters and construct a prototype. The water pump does work, now we just need to actually create our system. Also, we are looking into ultra filters so we can further clean the water.

Is there a website where we can learn more about the process of water being filtered into drinking water? Or any videos demonstrating the process? We are having a hard time finding an example of what happens inside of the filter as the water goes through.

Thanks,

M, J, and M

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Student Example 2

Good Morning,

We are currently not in school due to the Coronavirus and we will not be back until March 31st. In the meantime we are still working on this project to make sure we met every deadline. I am currently working on all the graphics the team will need to make the animations. I will continue to keep everyone updated when I can. Thank you for your help during this time

-Team U

A decorative graphic on the right side of the page consists of several overlapping diamonds in teal and orange colors, arranged in a vertical, staggered pattern.

Student Example 3

The most impressive part of the field trip is it takes three days for the man-made lake to circulate around the entire plant. It was a pretty neat thing to know about. The part of the tour that really helped us with our project progression was the tour around the plant. We got to see what they actually do with their waste, one of which being coal ash. We also learned the number of people who work in the plant, the amount of automation and that many people work in the company for long periods of time.

So now we have one question:

- *What kinds of things do we want to have in place for our initial presentation on April 6th?*

And here are a few of our plans:

- *Create a brochure to give out and illustrate what coal ash is*
- *Creating an oral presentation*
- *Creating a movie/presentation to play in the background of pictures from our field trip and work on Wednesdays*

Student Example 4

Good morning! I have the links for all of the docs and slides we have.

Research questions/ideas:

https://docs.google.com/document/d/1amy7-vzl-pW1h8KqVrrHXjpYekIKw63yUWBbs_63BpY/edit?usp=sharing

Poster slide:

<https://docs.google.com/presentation/d/1vFtqdsLepXQfab3fxDzStsDwRajRBmMIZ2kvRj6sRew/edit?usp=sharing>

Research plan:

<https://docs.google.com/document/d/1ilupMquDTmO-CcmOdgeLaZLREs722Sq96F9o4jGqzUY/edit?usp=sharing>

We will be working on the STEM project every Wednesday and Friday from 10:50 to 11:36 AM in Anatomy. If you have the time to stop by or video chat with us during these times, it would be great! If you have any questions or ideas, don't hesitate to type in the Research Question document or leave comments. We are excited to begin this process with you guys, thank you!



Student Example 5

Mentor: *If you haven't done so yet - just pick one of your two options (air quality or traffic) - both are good problems to try to solve - focusing on one problem to solve is an important decision so that you can start working on your solution idea. And don't forget - you need to somehow use artificial intelligence in your solution!*

Student:

Thank you for your feedback .

We have chosen to focus on air in the community being dangerous for us to breathe.

It would be nice to have fresh clean air in our community.


How could AI help us with this?

Thank You!



Student Example 6

Hello, we noticed that you haven't responded to the message from about a week ago. Please respond to us as soon as possible. We are in need of assistance so we can have a final decision. Besides that, are any of you coming next week? Thank you and please respond as soon as possible.



Evaluating Posts - Grades and Expectations



Teacher Action Steps - MME Specific

01

Roll out MME to students and review functionality

02

Assign Groups and direct 1 student from each to create a project

03

Add the remaining students to the project and encourage a first post!

04

Notify ISTI to begin matching in mentors

Showtime: The Role We Each Play

New Teacher Session





Student and Mentor Relationship

The student mentor relationship is a differentiating factor in this program. The ease of accessibility allows students to collaborate and connect with mentors on an ongoing basis. Video conferences help further the relationship and build student confidence.

It is imperative that you encourage students to lean on their mentors.

Teachers and coaches encourage students.

ISTI and coaches encourage mentors.

Both sides have to do their part.

Student



Posting



Nudging



Ownership of
Project

Mentor



Content Expert



First point of
contact for student

Teacher



Student Trainer



Monitor



Facilitate

Coach



Curriculum



Engagement



Accessibility

ISTI



Crisis Manager



Logistics

Whose role is it anyway?

01

You are looking for assistance in getting students motivated after spring break.

03

You need to reschedule a mentor visit.

04

Students have a question about their research.

02

Students shared a closed link.

05

Mentors have not responded in 7 days.

Mock-Ups



People



Problem



Restraint

Follow and Engage



@theISTI



@_theISTI

