HOW TO RUN A PROFESSIONAL LEARNING COMMUNITY IN SCIENCE

An AFT Resource to Promote Science Education

A Union of Professionals

WHAT IS A PROFESSIONAL LEARNING COMMUNITY?

A professional learning community or PLC, is a group of educators who get together to collaborate on student learning. PLCs can be used for educators to compare student performance data and learn from one another how to increase student learning. PLCs are not department or faculty meetings, training sessions or other activities where student learning is not the central focus of the discussion. PLCs provide occasions for teachers to evaluate how their students are performing based on agreed-upon benchmarks and collaboratively learn to improve instruction.

No matter what sort of PLC you are leading, a few ground rules need to be followed to be considered a "true" PLC.

Randi Weingarten
PRESIDENT

Lorretta Johnson
SECRETARY-TREASURER

Mary Cathryn Ricker
EXECUTIVE VICE PRESIDENT

OUR MISSION

The **American Federation of Teachers** is a union of professionals that champions fairness; democracy; economic opportunity; and high-quality public education, healthcare and public services for our students, their families and our communities. We are committed to advancing these principles through community engagement, organizing, collective bargaining and political activism, and especially through the work our members do.

Establish Group Norms

- Norms are agreed-upon standards for the meeting, including times, confidentiality, participation and decision-making.
- Example Norms:
  - » We will begin and end on time.
  - » What is discussed in the PLC stays in the PLC—student/teacher performance should not be shared with others outside the community.
  - » We will speak and listen with respect, and deal with conflicts respectfully.
  - » We will come to each meeting prepared with any data, results and materials.
  - » When making decisions, the majority rules.
- The role of the facilitator should be to help enforce PLC norms that have been established by the group. The facilitator does not make the norms, but helps to facilitate the making of the norms.
- During the early stages of a PLC, the facilitator may need to address the norms.
- Norms can be updated as time goes by. New situations or problems may arise that require adjusting the established norms.

Setting SMART Goals

- Traditionally a SMART goal is one that is

  S **specific**,

  M **measurable**,

  A **attainable**,

  R **realistic**, and

  T **timely**.

  For more ideas, go to https://www.projectsmart.co.uk/smart-goals.php.

- Some PLCs are able to set SMART goals very easily based upon national, state or district-level assessments. Other groups must first find commonalities between student groups and then set a SMART goal accordingly.
- SMART goals in middle and high school science can be difficult because the content varies from one grade level to another. Instead of focusing on content-specific goals, the PLC can shift its focus to skill-specific goals such as graphing, lab skills, technical reading and writing.
- Long-Term vs. Short-term SMART Goals
  - » Long-term SMART goals are for the big picture and can be used, for example, to determine how students will improve on the topic/objective/skill over the course of a year.

- » Short-term SMART goals are small steps that can help you to achieve your long-term goal. They are set for a monthly or quarterly timetable, for example, to make sure you are heading in the right direction to achieve your long-term goal.
- Sample PLC SMART Goal in Science
  - » Long-term SMART goal: Seventy percent of students will have a proficiency of 17/24 on analyzing data by creating and interpreting appropriate graphs as scored by the department rubric at the end of each year.
  - » Short-term SMART goals:
    - ○ All science classes will require that students be assessed on their graphing skills at the beginning, middle and end of each school year; students will show a 12 percent (3 point) increase in their ability to create and interpret an appropriate graph from data given as appropriate for their grade level.
    - ○ Eighty percent of students will create a title for the graph that includes both variables by the baseline given at the end of the 2016-17 school year.

Essential Questions

- Essential questions, also known as guiding questions, should be followed to help lead your PLC discussions. Each time you meet, focus your discussion on these main ideas.

- The answers to the questions will most likely update as your focus and SMART goals also shift. If you are having a hard time focusing the group or find the group off track, you can use these guiding questions to get you back where you need to be.

- Essential/Guiding Questions

  1. What do we want our students to learn?

  2. How will we know they have learned it?

  3. How will we respond when they are having difficulty?

  4. How will we respond when they already know it?

Creating Benchmarks

- A benchmark is an assessment that can be used to monitor student performance that focuses on your SMART goal.

- The benchmark can be an assessment that is already being given in your group as part of a national, state or district assessment. It can also be designed to specifically measure the goal(s) you have established.

- The group should be involved in the development of the benchmark so that it meets the needs of all group members. It may be necessary to alter the baseline by ability level, such as a regular or advanced/honors baseline.

- Create a rubric for grading the benchmark as a group. The rubric should reference key objectives the group has established to evaluate student performance.

  » Sample objectives created for a science PLC:

    ◦ Creates an appropriate graph from given data.

    ◦ Correctly identifies and labels X and Y axes.

    ◦ Selects appropriate type of graph.

    ◦ Graph has appropriate scale and accuracy (11 points of data).

    ◦ Interpolation (specific data points; identify data in graph with correct units).

    ◦ Qualitatively discusses the data obtained from the graph over a given interval.

    ◦ Quantitatively (uses calculations) finds a value from the graph and writes it with the correct units.

      ◦ Extrapolates (uses the graph trend to predict information outside the graph with correct units).

Analyzing Data

- Now that you have created a benchmark to evaluate your progress in meeting the SMART goal you created, you need to be able to analyze the data collected. There are a variety of ways to analyze the data based upon your group.

- First you will need a way to collect individual student data. If you are using a state or national assessment, you may already have these data. If you are using your own bench-mark, you will need to create your own way to record this information.

- Not only will you need a way to analyze individual student data, but also teacher data to see if one teacher has students performing at a different level than the rest of the learning community.
    - » Graphing Benchmark Data Tracker: To access this sample student information spreadsheet, go to http://bit.ly/2tU cOyp and see the "Template for Scoring" tab.
    - » PLC Group Data Tracker: To access this sample teacher tracking spreadsheet, go to http://bit.ly/2sUuaah.

- After the data have been collected, go through the data as a group. Each teacher can come to the PLC meeting with a sticky note of information. It is wise to limit the sharing from each member so that there is enough time to discuss everyone's data. Ideas for sharing data include:
    - » Everyone should come with a sticky note showing: one overall trend, two strengths and two weaknesses.
    - » What two objectives did your students do well in? What two objectives were the most difficult for your students?
    - » Did any one class perform at a level that was different from any other class?
    - » What type of student did really well with the baseline? What type did not do as well? What was the difference between the two groups?

- Focusing your group's discussion will save time and allow you to home in on the main points and not get bogged down with the details.

FOSTERING COLLABORATIVE
PROFESSIONAL LEARNING COMMUNITIES

Professional learning communities provide an opportunity for teachers to collaborate in order to focus more keenly on student learning. However, not all PLCs function at a level that fosters collaboration. Here are some tips for PLC leaders and participants:

- Pay attention to yourself and others. Think before you speak, and try not to let your emotions sabotage your intended meaning.
  - » Before speaking, take a few minutes to clarify your content and emotions.
- Rephrase what is being said in order to seek understanding of other members Try out the following sentence stems:
  - » "You're suggesting …"
  - » "So, what you're wondering is …"
  - » "You're proposing …"
  - » "So, you are thinking that …"
- Ask questions that delve for deeper understanding.
  - » "What do you think about those changes?"
  - » "Tell me more about _____."
- Presume that all members have the right intentions.
  - » Assuming that someone has ill intent is a sure way for a PLC team not to work well together.
  - » All members' ideas should focus on student learning.
- Avoid using vague language—nouns, pronouns and/or action without data to support findings—and challenge others who use vague language.
  - » They, the administration, the students, the parents (vague nouns and pronouns)
  - » Improve, enhance, modify, understand (vague action words without the detail of how severe the problem is—data)
  - » Better, larger, slower, more, least (than what? for whom?)
  - » We have to…, We shouldn't…, I can't… (Who made up that rule? What stops you?)
  - » Everyone, all, never, no one, always (Are there exceptions? To what degree?)
- Share your thoughts and put ideas on the table. Include data as well as impressions to better explain the issue/concern.
  - » Know when to share ideas with the group.
  - » Present ideas as a possibility, not an advocacy: "This is just a suggestion."
  - » Know when to pull ideas off the table: "This idea is blocking us; let's set it aside and move on to other possibilities."

- Summarize and organize discussion.
  - » "There seem to be two issues of concern here. …"
- Offer themes that either make abstractions clearer by providing details or broaden the focus depending on what is needed to move the group's thinking forward.
  - » Broader: "So the bigger concepts, goals are _____." This provides value to _____ idea(s). "This assumes that _____."
  - » Clearer: "So we need to (specific action) first."

DEVELOPED BY:
AFT SCIENCE CADRE