Proposal for Year-long Plan for Science Teacher Learning

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Introduction

It is clear that given the work that was accomplished during the 2015-2016 school year, that a major focus during the next several years in the science department at Troy Schools will be the implementation of the Next Generation Science Standards in every level across the district. These (NGSS) standards which have been partially adopted by the state of Michigan as the Michigan Science Standards (MSS) will be the starting point in the development of new curricula in all core science courses. In addition to this, there is a desire to create authentic assessments, and use visible thinking in the classroom as well.

During the 2016-2017 school year it will be imperative that professional development is tailored to this goal. Flexibility will also be key as each individual teacher will be at a different point in the adoption of these new standards this year. Educators must have the time to collaborate and develop rich curricula for each class. They must also be given tools and supports in order to be successful in their work. This professional development plan will allow the science educators of Troy Schools the opportunity to work together, grow together, and develop the best possible science education both vertically and horizontally. This will ensure that *every* student gets a superior educational experience.

Background & Rationale

This professional development plan was created with several fundamental ideas in mind. First and foremost, it conforms with expectations laid out at the district level. It was made clear at the end of the 2015-2016 school year that while making this transition, there would only be certain dates that *all* science teachers would be allowed to meet due to the availability of subs for PD use. It also fits with the schedule provided in the Troy Education Association contract.

With these logistic constraints in place, the next thing to consider was how to best approach learning in this school year. Flexibility continues to be important as every teacher is in a different place with the acceptance of new standards. While some are excited and ready to jump in, others feel that the current content should remain. Allowing for flexible implementation will keep tensions lower. A continuation of the content area team work (CAT work) will also allow for a formation of a "critical friends group" approach to tackling these problems. This will provide opportunities for deep collaboration and a continued nurturing of teacher leaders. It will also allow the focus to remain on the students (Easton, 2015). Finally, as PD and meetings occur it will be important that it is clear that the changes being made are lasting instead of a one-year process that won't be considered the following school year.

Proposal for Leading Teacher Learning

The primary goal for teacher learning this school year is the continued development of a guaranteed and viable curriculum for all students in science. This curriculum will be accomplished through the creation of new curriculum that embraces new Michigan Science Standards while also targeting the district's goal of "making thinking visible". In order to do this, there will need to be several steps taken.

1. The content area team (CAT) leaders selected during the '15-'16 school year will continue to work across the district with the goal of finalizing curriculum. They will continue creating the "at a glance documents" for each unit in each subject. This will be done through 3 regular CAT leader meetings at the district board office. These meetings will also provide teacher leaders with readings and skills to bring back to the building level.

2. CAT leaders will lead meetings at individual buildings to get information to and from the district level. Building administration should attend at least one of these during the year, if not more to work with teachers. This will improve rapport with teachers and keep things on track. Meetings will occur on a monthly basis and serve a few distinct functions.
    a. Relay any information from the leader meetings to all the other teachers. Get feedback on this information and bring it back to the district level. Any reading articles, or focuses shared at the district meetings will be shared (example: a reading on unpacking NGSS standards).
    b. Collaborate on new lessons, labs, and learning experiences that can be added to the "at a glance" documents created for district use.
    c. Since all teachers will be embracing the new standards and curriculum at differing the individual building meetings must be a place of reflection. Teachers should bring student work for different standards and compare educational strategies to find what works best.
3. All teachers will attend two district wide professional development meetings. This will be an opportunity for educators across the district to meet and accomplish the following.
    a. Teachers will collaborate on a specific unit in their content on a district wide level.
    b. Teachers will gain information about progress towards goals on a district wide level, and be briefed on future goals.
    c. Opportunities to learn new information through text, or through a speaker will be provided.

4. Building administration will need to keep the large amount of work ahead in mind when crafting building by building workloads. The understanding that science teachers are already highly dedicated to this work will be key in preventing burn-out.

Timeline

August

- Prior to the beginning of the school year ALL science teachers will meet for district wide professional development. Like always, half will be broad topic, and half will be based on subject area. Focus will be placed on the use of authentic assessments and all teachers present will be reminded that district-wide common formative assessments must be created and used.

October

- CAT leader meeting 1.

November – December

- Small groups meet at individual buildings at least twice.
- CAT leaders compile information from individual meetings.

January

- CAT leaders begin working with science coordinator to develop plans for CAT leader meeting 2. This will allow for further fostering of teacher leaders, and a greater investment in the project itself (p 50).
- CAT leader meeting 2.

February- March

- Small groups meet at individual buildings at least twice.

- CAT leaders compile information from individual meetings.

April

- Large group PD

May

- CAT leaders begin working with science coordinator to develop plans for CAT team leader meeting 3.
- CAT leaders compile teacher artifacts from the year for use in meeting 3.
- CAT leader meeting 3

Evidence of Accomplishment

Evidence that the goals outlined in this proposal have been accomplished will be collected at the end of the 2016-2017 school year.

1. The creation of 3 more units should be complete by the end of the school year. In most cases this will (once added to the 1 unit already finalized last year) complete the units needed for each course. For a unit to be complete its "at a glance" document must be tentatively finalized and submitted to the district's science coordinator for approval.
2. Each CAT leader will be expected to share work done at the building meetings at the larger meetings. These artifacts could be notes/whiteboard work, student work samples, new documents/labs created, etc.
3. Teachers at each building will be encouraged to share and showcase student work on common labs and activities via the district program Schoology. This will provide a jumping off point at district wide PD days near the end of the year and at CAT leader

meetings. It will also help teachers compare and contrast lessons from building to building.

Anticipated Impact

This plan will provide science teachers ample time to meet and work on curriculum choices in each of their classes. It will also provide time for reflection and the analysis of student work. The small meetings will have the largest impact on the quality of the educational experience students receive. It will be up to both educators, building administration, and the science coordinator to be available for as many of these meetings as possible in order to ensure work is being done. Time was one of the greatest concerns that individuals had after last school year, and while it is not necessarily the best scenario, given district constraints, it is a feasible solution.

Large group meetings will continue to provide helpful tools to teachers in science. It will be vital that the tools provided supplement the work being done adequately to ensure that all teachers are motivated. There is also a benefit to having larger group discussions across the two high schools as it includes more ideas and perspectives. These large group meetings will be key to developing a thorough list of activities for our new content. Comfort levels with the changes will also increase over time, especially with skeptical teachers (Easton, 2015).

Summary

It is clear that this year is a year of flux. It will be a crucial transition from the way we have taught in the past to the way that we will be teaching in the future. It is through the continued use of the CAT work, but most importantly through the use of individual building meetings that we

will be successful. By providing opportunities for teachers to work together, develop curriculum, and assess and reevaluate their work we will create a better science program for all students.

Next Steps

In the following years there will be a lot to do in regards to getting all educators on board with the new standards and curriculum. While the CAT method of getting things done is efficient, and works with the district financially in regards to getting substitute teachers, it will not work forever. It will be imperative in the future to get more days for large groups to work together across the district. This will allow the reflection and comparison of student work that will be done this year on the building level to be done on the district level. Once the courses are more solidified it will also become important to create authentic assessments for students which will be uniform across all classes. In addition to offering more time and opportunities to work together the district will need to continue to offer a variety of PD opportunities on general pedagogy, the use of technology, etc. to supplement the heavy focus on NGSS and MSS.

References:

Easton, L. B. (2015). Powerful designs for professional learning. Oxford, OH: Learning Forward.