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Leadership in STEM Certificate  
Practicum Proposal

**Title:** Developing Flipped Lessons in a Student- Centered Classroom

**Option:** In-person Professional Development

**Audience:**

My audience will consist of middle school science teachers at my school, M.S. 51 William Alexander in Park Slope, Brooklyn. There are about three science teachers per grade who exclusively teach science, and a few others who were assigned to a single section (in combination with math). I will also invite teachers from other content areas to join, as many educators at my school are interested in tech integration. In my school the 6th and 7th grade science teachers focus mostly on the physical sciences like the introduction of physics, earth science, and chemistry, while 8th grade teachers teach the regents Living Environment course, which focuses exclusively on biology and ecology. Each science teacher in my school teaches between 120 and 155 students (four to five classes of 30-34 students each). My school has 1,100 students enrolled in all grades.

**STEM:**

My project will demonstrate how to deliver direct instruction in a student centered way using biology content, aligned with the NGSS and with the NYS Living Environment regents standards. The last unit is titled “Human Impacts on the Environment” and I will use a NASA lesson set from the Biosphere category from myNASAdata.org to demonstrate flipped teaching strategies. For example, I may use aspects of the [Phytoplankton Distribution unit plan](#) in my PD.

**Outcomes/ expectations:**

I hope that teachers in my school will feel empowered to decentralize the classroom from themselves and minimize the amount of time they spend lecturing daily. I will demonstrate one of my past units, where I recorded myself teaching the science content, uploaded my video to EdPuzzle and added pauses throughout to incorporate questions, note-taking instructions and highlight key vocabulary words. I also made guided notes pages to go along with the videos. This method frees up educators so they can support more students in small groups and individually when processing new content. In the beginning of each unit, students independently watch these videos in class with headphones, take notes, and then we follow up with labs, inquiry-based lessons, and class discussions. I want to motivate teachers to use their existing slideshows to create student led experiences, using headphones, interactives, and gallery walks whenever possible.

**Follow- up:**

I will check in with the participants after 2 weeks and then again after a month. I will offer to meet during common planning periods and offer curriculum planning support where possible. Also, I will offer to share my existing flipped lessons so that teachers can adapt them or use them as is.