Video-Analysis Summer 2018
Research Project Instructions for
Year 1 UA Noyce Math-Physics Interns*
Written and Oral Presentation Report due 6/28/18

What you will be doing:

During your week at the Video-Analysis activities, you will be participating in a variety of activities. While you are participating observe how you and other STEM professionals learn science a classroom environment and as such, we are asking you to develop a project. Each intern group (form groups) will develop their own problem to investigate, research question and procedure for collecting data. At least 3 different types of data should be collected and can include, but is not limited to notes, videos, photos, real data, etc. You will then analyze your data to answer your research question and report your results based on your analysis and what conclusion you have reached based on your research during week 1 and week 3. The research that you have carried out will be written up during week 3 and reported on the last week in the form of a PowerPoint presentation, no longer than 10 minutes.

Outline:
1. Introduction to problem
2. Review of the literature on the problem
3. Research question
4. Procedure for collecting data including how you will collect data (need 3 different types)
5. Analysis procedure of the data collected
6. Results of analysis
7. Conclusion

How you will do it:

Week 1:

1. Form a research Group: What are their names?
2. Develop Research Question –What do I want to know about the problem in this environment? What do think about the solution to the problem? What is a question that I can ask about my research problem that can reasonably be answered with the materials I now have or can find? These are some examples but we had rather you not use these, but develop your own questions based on your major.

Examples:
1) What do you (and other high school and college students) know about ???? when they start a the problem investigation and what do they know about ???? by the end activities with it?
2) What is your (and other high school and college students) understanding of what scientists do before investigating this problem and after?
3) What is your (and other high school and college students) attitude about investigating this problem before and after?
4) Any other questions that you would like answered about your own and other students’ learning.
At the end of Week 1 and before Week 3, each group should email their research question to Dr. JW Harrell jwharrelljr@gmail.com, Dr. Sunal at dwsunal@ua.edu, & Krystal Flantroy at kflantroy@crimson.ua.edu.

During Week 3: At the end of each day you should write field notes as part of your experience. Directions for writing field notes are described below. Please do not stress about this, they do not have to be a novel, but they should contain each of the five sections. Post on Group web site. Clearly identify each posting and the group names involved.

Field note sections
There are five sections to in the interface for the field note database:

1. General site observations (setting the scene)
2. Narrative (the main section, what did you do?)
3. What did you find out and conclude today?
4. Reflection (like a postscript commentary in paragraph form, what did you learn, how did it make you feel, what value did it have)
5. Digital media (upload relevant pictures, documents, etc.)

The following explanations of the five sections of your field notes include questions and suggestions that are meant help you organize and write your field notes. Use these questions and suggestions as prompts to help you remember and identify details about your participation in the Visual-Analysis research experience. You can do this by having these questions handy when you write your field notes and/or reading them before and/or after you complete activities each day. Again, these are guiding questions and suggestions. You are not required to directly answer each question, but make sure that your field notes generally address the topics that these questions orient you towards.

1. General Site Observations (required)
Here you are setting the scene for those who will read your notes. Describe the things you notice during the activities. This section is usually about one paragraph long.

2. Narrative (required)
In this section focus in on what you planned and did and the results of your activities each day. Also describe you attitudes and feeling expressed during this time. Try to be as accurate, thoughtful and honest as you can. This is the longest section of the field note and contains several paragraphs. The length should run as long as is needed to describe your lab work.
Pointers:

- Reflect on how you interacted with the teachers, how they interacted with you and how they interacted with each other.

- Be sure to note how you and the others came to work on a particular activity together, what their reactions were to the activity, and what difficulties or problems they encountered when dealing with the activity. Think also about how you reacted, and what difficulties or problems you encountered.

- Pay close attention to dialogue and language.

- Pay close attention to how physical materials or tools are used during the course of activities.

- Remember that negative events such as ways interactions break down, or misunderstandings about the activities, are as interesting as positive ones.

- Be careful to report behaviors rather than imputing your interpretation of a student’s mental state. For example, rather than write “Carlos was happy” report what made you think he was: “Carlos ran in, smiling, jumping, and waving a paper.”

- Be sure and include a description and a pseudonym for the teacher(s) you are writing about.

- If you do any internet-based work, be mindful of the websites you use and include URLs or close-enough search terms so that your audience can access the sites.

- A productive strategy to use is to try to recall parts of the day that stand out in your mind, and work backwards and forwards in time from them.

Some aspects to attend to (do not feel that you need to do all of these, but use them for ideas/to jog memory):

* **Teacher’s understanding and interaction with an activity:**

  * No difficulty. We immediately got into our task. (How?)

  * Some difficulty (describe it). How did you and/or the teacher go about solving it? How did you and/or the teacher structure the situation? What kind of understanding did you and/or the others start with? What happened afterwards? Were you successful in solving the problems?

  * What strategies did you and/or the students use in solving the problem?

* **Student-student teaching others:**

  * Did student-student (peer) teaching take place? Describe.
What role did you and others assume in the activity?

* Leader, teacher, peer, student, observer?

* Did you and/or the others enjoy the activity? Did you find it difficult, easy, or what?

Collaborative interaction among participants:

* What was the nature of the collaboration? Were others helpful? Supportive? Actively engaged? How or how not?

* Was there competition among members in the group? Describe it. Was this healthy or destructive for the group as a whole?

3. Task- Level Summary (dependent on the kind of activity engaged in)

In this section you will describe the activity or activities that you did. Describe the materials used and instruments use to collect data.

4. Reflection

In this section, state your thoughts and opinions about what happened.

What have you learned about the concepts, practices, etc. that you were exposed to this day? What did you learn about yourself and others?

You can bring in your background experiences or any information that helps frame your thoughts about your experiences. Note any thoughts you might have about previous experiences that relate to what's going on, beliefs that may have been challenged or relevant to the way you acted, or ideas about what you may have wanted to do differently. How has the experience of working in the lab changed your concept of science and science education? Also take this opportunity to comment on aspects of the activities you and others engaged in that you think are particularly positive or problematic, and any other ideas that may be helpful in the next weeks for yourself, other students, or future classes.

5. Digital Media (optional)

The database where you submit your field notes is configured to let you upload digital files (documents, pictures, small movies, etc.). If you have a cell phone, digital camera, etc. we encourage you to take pictures of the events and objects you describe in your field notes. If you are going to take pictures ALWAYS ASK PERMISSION OF THOSE WHO WILL BE PHOTOGRAPHED. YOU ARE NOT TO ENGAGE IN BEHAVIORS THAT MAKE ANYONE FEEL LIKE AN OBJECT UNDER OBSERVATION.

ONE LAST THING!!!!: If something occurred during lab that you think is especially critical for the instructor to know, please highlight this in your field note by using ALL CAPS in the text that describes the incident. ALSO, please contact the instructor directly (via email) if you are especially concerned.
Evaluation

Remember, there is no way to say anything wrong in your field notes. I am looking for your honest observations. Your field notes will be evaluated on when and how thoroughly you report on your experiences at the site (see criteria listed below.) The richer, more detailed and complete your notes are, the better you we will be able to understand and evaluate processes of learning and development of science research in a lab or in a classroom, and the more resources you (and your classmates) will have to draw on in developing your project.

Points to Remember

- **Timeliness:** A good field note is one submitted within 36 hrs of your lab day. The later you submit your notes (after the 36 window), the less you will remember.

- **Detail:** include details that are relevant for assessing student (and your own!) learning and development. The guiding questions above are there to orient you to those relevant details. A good field note addresses these questions (within the scope of the activities you engage in).

- **Completeness.** When you write your field notes you will be writing about a series of events. Make sure that when you describe these events you do so in a way that allows the reader to understand how the event began, what happened during the event, and how the event ended.

- **Learning:** We will be reading and commenting on your notes. We will be looking to see if you are trying to apply this advice in subsequent field notes (e.g. moving from a description that only states that a student solved a problem to one in which you describe what the student did to solve the problem.) If you disagree with the advice given, let us know when we debrief, or by emailing us directly.