

CODING Classes
Research Instructions for
Year 1 UA Noyce Interns*
Summer 2017

What you will be doing:

During your week at the CODING camp, you will be participating in a variety of activities. You will be working in classes with students interacting with the CODING students.. While you are participating observe how students learn science a workshop environment (not a standard school classroom) and as such, we are asking you to develop a project. Each intern group will develop their own **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, **interviews of teachers/master teacher, recordings, videos, photos, student work, 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 one week of camp. The research that you have carried out during this week will be reported on the last week in the form of a **PowerPoint presentation**, no longer than **10 minutes**.

Research question

Procedure for collecting data including how you will collect data (need 3 different types)

Analysis procedure of the data collected

Results of analysis

Conclusion

How you will do it:

Day 1 – Develop Research Question – What do I want to know about how the students learn science in this environment? What do students think about learning science and why do they do come to summer class? 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 students know about ??? when they start the camp and what do they know about ??? by the end of camp?

2) What are students understanding of coding before the camp and after?

3) What are students' attitudes about coding and its applications before the camp and after the camp?

4) Any other question that you would like answered about what the teacher does and what students do?

*adapted from Cole, 1996 & Polman, 2006

At the end of day 1, email your research question to Dr. Sunal at dwsunal@ua.edu or Krystal Flantroy at kflantroy@crimson.ua.edu. Also 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.

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, like a play's script)
3. **Game-task level summary** (details about the specific games or tasks that you engaged in)
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 CODING 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 CODING camp 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 when you arrive. Describe the general atmosphere, your state of mind, your feelings, feelings expressed by others. This section describes the view from a wide angle. It should contain observations about the setting as you arrive and how you find your way in to the day's activities. In later notes, you should mark changes, things that are unusual. This section is usually about one or two paragraphs long.

Guiding questions:

- How were you and the other interns feeling before you/they arrived at CODING camp?
- What did you notice when you arrived at the CODING camp? What were the

students doing before class began?

- What was the feeling of the classroom, the general attitude of the student as a whole?
- What other activities in the neighborhood or in the world (current events) may be affecting the environment or atmosphere in the classroom?

2. Narrative (required)

In this section focus in on your and other's interactions in the class. 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 work at the CODING camp.

Pointers:

- Reflect on how you interacted with the students, how they interacted with you and how they interacted with each other.
- Be sure to note how you and the studnets 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 emotional qualities of interactions.
- Pay close attention to dialogue and language.
- Pay close attention to how persons use their bodies to communicate (e.g. gestures, gaze, body orientation)
- 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; in fact, they are very informative when we try to understand what goes on when things go well.
- 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 student(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):

Student'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 student go about solving it? How did you and/or the teacher structure the situation? What kind of understanding did you and/or the student start with? What happened afterwards? Were you and/or the student successful in solving the problems?
- * Did the student you were working with learn enough about the activity to be able to in the future complete the activity successfully by him/herself?
- * What strategies did you and/or the student use in solving the problem?

Student as student- teaching others:

- * If they taught you or another student how to do something, did it show that they understood how to do the activity being taught?
- * How did they teach it? Did you notice anything curious in their understanding?
- * How much did you have to intervene and ask more specific questions?

Facilitation or hindrance caused by another person.

- * How did they react? How did you?
- * What was the affective (emotional) quality of the interaction? Were you and the others

happy, sad, frustrated, angry, or indifferent during the activity or during different periods?

What role did you and others assume in the activity?

* Leader, teacher, peer, student, observer?

* Were the students you worked with eager, reluctant, timid, open-minded?

* Did you and/or the students 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 the students? Between you and the students(s)? 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 in CODING camp.

4. Reflection

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

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 at CODING camp. 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 at CODING camp changed your concept of teaching 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 your visit 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 in CODING camp, 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 a one submitted within 36 hrs of your visit. The later you submit your notes (after the 36 window), the less you will remember.
- *Detail:* include details that are relevant for assessing student (an 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.