

Clinical Interactions Handbook

Physics 209 – *Introduction to Teaching High School Physics*

Physics Teacher Education Program

Illinois State University

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TO THE STUDENT: The 25 hours of clinical experiences in PHY 209 consist of required clinical observations and supplemental clinical interactions. Clinical observations primarily are based upon the introductory activities of this course and the NSTA standards. Guidelines and templates for clinical observations may be found on the PHY 209 administrative materials web page that is hyperlinked to the course syllabus. Guidelines for clinical interactions can be found only in this *Clinical Interactions Handbook*. **Students must** complete clinical interactions taken from the guidelines included in the *Clinical Interactions Handbook*.

Students should choose their clinical observations wisely. Choosing a broad range of interactions will make it much easier for the cooperating teacher to assess clinical student performances in the areas of intellectual, moral, and social virtues. Remember, clinical observations generally do not provide the cooperating teacher with the information he or she needs in order to assess the intellectual, moral, and social dimensions of a clinical student's professional character. Only clinical interactions can serve this role.

Clinical observations in PHY 209 are grouped into three areas: *Individual and Small Group Instruction*, *Whole Group Instruction*, and *Assisting and Assessing Outcomes*. Students must participate in clinical interactions in each area. Note that students must complete a minimum of 2 hours in each category.

WARNING: Clinical students are prohibited from interacting with high school students without direct supervision of the cooperating teacher or a substitute teacher. All students must wear readily visible university ID tags when in attendance at the Service Learning Project site. No clinical student should agree to go beyond the stated boundaries of an activity for which they are not qualified even if asked by the cooperating teacher. For instance, no student should agree to teach a 50-minute class. Experiences in this area in particular have turned out very poorly in the past and are, without special permission from the course instructor, expressly prohibited.

I. Individual and Small Group Instruction (2 hours required)

Clinical Interaction Clock Hour Credit

- 1a** The clinical student will work one-on-one or in a small group to tutor any classroom student(s) who is (are) “behind,” of low ability, or poor performance. **Maximum Credit: 1hr**
- 1b** The clinical student will work one-on-one to tutor or assist one or more classroom students with physical disabilities or handicaps. **Maximum Credit: 1hr**
- 1c** The clinical student will participate in small group activities with classroom students from diverse ethnic, racial, gender, and socioeconomic groups. **Maximum Credit: 1hr**
- 1d** The clinical student will provide a “gifted” student with a challenging yet rewarding enrichment activity. **Maximum Credit: 1 hr**
- 1e** The clinical student will facilitate one or more classroom students with the use of technology in lab. **Maximum Credit: 1hr**

II. Whole Group Instruction (2 hours required)

Clinical Interaction Clock Hour Credit

- 2a₁** The clinical student will re-teach a short (10-15 minutes) lecture-demonstration portion of a single class, patterning his or her procedures after those of the cooperating teacher. **Maximum Credit: 1hr**
- 2a₂** The clinical student will re-teach a short (10-15 minutes) problem-solving session of a single class, patterning his or her procedures after those of the cooperating teacher. **Maximum Credit: 1hr**
- 2b₁** The clinical student will set up or take down an “off-the-shelf” lab activity. **Maximum Credit: 1hr**
- 2b₂** The clinical student will conduct a short pre-lab overview describing procedures and noting safety concerns. **Maximum Credit: 1hr**
- 2b₃** The clinical student will facilitate one laboratory activity. **Maximum Credit: 1hr**
- 2b₄** The clinical student will conduct a short post-lab classroom discussion. **Maximum Credit: 1hr**
- 2c** The clinical student will conduct a discussion-based review session in preparation for a quiz. **Maximum Credit: 1hr**
- 2d** The clinical student will provide an orientation to classroom students in the use of a particular computer or other laboratory technology. **Maximum Credit: 1hr**
- 2e** The clinical student will conduct a whiteboarding session using the approach known as the Socratic dialogue. **Maximum Credit: 1hr**
- 2f** The clinical student will conduct classroom climate setting for a teacher who uses an inquiry-oriented form of instruction. **Maximum Credit: 1hr**

III. Assisting & Assessing Outcomes (2 hours required)

Clinical Interaction Clock Hour Credit

- 3a** The clinical student will assist the cooperating teacher with the development of instructional resources for a particular lesson or lab activity. **Maximum Credit: 1hr**
- 3b** The clinical student will collect, score, record, and return homework or other assignment. **Maximum Credit: 1hr**
- 3c** The clinical student will create and utilize a rubric for grading student lab reports or another complex task. **Maximum Credit: 1.5hr**
- 3d** The clinical student will create and administer a quiz and conduct a follow-up analysis. **Maximum Credit: 1hr**
- 3e** The clinical student will create, administer, and review results of a practice test with classroom students. **Maximum Credit: 2hr**
- 3f** The clinical student will, starting with the very beginning of the class period, bring student to complete attention, and then and only then give an assignment or make an announcement, and take attendance. **Maximum Credit 0.5hr**
- 3g** The clinical student will assist with an extracurricular activity such as an academic competition, sport, of social event. **Maximum Credit 1 hour**
- 3h** The clinical student will participate in a parent-teacher conference. **Maximum Credit 1 hour**

CLINICAL INTERACTION 1a

ACTIVITY: The clinical student will work one-on-one or in a small group to tutor any classroom student(s) who is (are) “behind,” of low ability, or poor performance.

GOAL: to provide clinical student an opportunity to assess ability to work with students with diverse abilities and/or interest

PROCEDURE:

- 1) With the aid of the cooperating teacher, select an appropriate student to tutor who is “behind,” has low ability or a poor disposition for learning the subject matter.
- 2) Conduct one tutoring session.
 - Get to know student and determine student’s understanding of the topic in question as well as learning background.
 - Help student set realistic learning goals.
 - Select and adapt instructional resources, including technology, lab, and community
 - Stimulate an interest in subject if appropriate.
 - Work with student, providing guided practice, to remediate deficiencies.
- 3) Report on the experience using the criteria below.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- 1) Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Student’s actions and reactions and changes as you moved through the session.
- 2) Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of assistance.
 - o Describe how your actions/reactions changed as you moved through the session.
 - o Describe improvements in student understanding achieved through this session.

- 3) Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 1b

ACTIVITY: The clinical student will work one-on-one to tutor or assist one or more classroom students with physical disabilities or handicaps.

GOAL: to provide clinical student the opportunity to assess ability to work with students with diverse backgrounds

PROCEDURE:

- 1) With the aid of the cooperating teacher, select an appropriate student to tutor or assist who has physical disabilities or handicaps. Be certain that you understand the limitations imposed by the physical disability and/or handicap before you begin your work with the student.
- 2) Conduct at least one tutoring session.
 - Get to know student and determine student's understanding of the topic in question as well as learning background.
 - Frankly and openly speak with student about physical disability and/or handicap.
 - Select and adapt instructional resources, including technology, lab, and community
 - Assist student to overcome limitations.
- 3) Report on the experience using the criteria below.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Nature of physical disability and/or handicap.
 - o Student's actions and reactions and changes as you moved through the session.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of assistance.
 - o Describe how your actions/reactions changed as you moved through the session.
 - o Describe improvements in student understanding achieved through this session.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 1c

ACTIVITY: The clinical student will participate in small group activities with classroom students from diverse ethnic, racial, sex, gender preference, and socioeconomic groups.

GOAL: to provide clinical student the opportunity to assess ability to work with students with diverse backgrounds

PROCEDURE:

- 1) With the aid of the cooperating teacher, work in a small group with students from diverse ethnic, racial, gender, and socioeconomic backgrounds.

- 2) Participate at least one session.
 - Get to know students and determine students' understanding of the topic in question as well as learning background.
 - Work with students as one of the team members.
- 3) Report on the experience using the criteria below.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Characterize students' diversity.
 - o Student's actions and reactions and changes as you moved through the session.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of assistance.
 - o Describe how your actions/reactions changed as you moved through the session.
 - o Describe improvements in student understanding achieved through this session.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 1d

ACTIVITY: The clinical student will provide a “gifted” student with a challenging yet rewarding enrichment activity.

GOAL: to provide clinical student the opportunity to assess ability to work with a “gifted” student

PROCEDURE:

- 1) With the aid of the cooperating teacher, select a student who has been identified as “gifted.”
Attempt to understand the nature of “giftedness” and the needs of the student in relation to this trait.
- 2) Identify the “gifted” student's interests in the subject matter.
- 3) Identify pertinent enrichment activity.
 - Get to know the student and determine students' understanding of the topic in question as well as learning background.
 - Help students identify learning goal for enriching activity.
 - Select and adapt instructional resources, including technology, lab, and community to develop a challenging and rewarding activity.
 - Work with the student, providing all necessary assistance.
- 4) Report on the experience using the criteria below.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the nature of the student's “giftedness.”
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:

- o How do you feel about this experience?
- o How might you improve such an experience in the future?
- o Do you currently feel qualified to work with such a student?
- o What future education do you need to do a better job?

CLINICAL INTERACTION 1e

ACTIVITY: The clinical student will facilitate one or more classroom students with the use of technology in lab.

GOAL: to provide clinical student the opportunity to assess ability to help all students learn using available technology.

PROCEDURE:

- 1) Several days (preferably a week) prior to the time when the technology will be introduced or used, identify the computer software/hardware or other form of technology with which students need assistance.
- 2) Prepare to assist students with technology. If this means getting to know some common computer hardware/software (e.g. PASCO's *ScienceWorkshop/DataStudio*, Vernier's *LabPro/LoggerPro*, *Interactive Physics*, *Graphical Analysis*, graphing calculators with probes, etc.), visit with the PHY 209 course instructor for assistance. Do NOT ask your cooperating teacher to teach you how to use the technology. If, on the other hand, the cooperating teacher volunteers to train you should training be necessary, you are welcome to accept the offer.
- 3) Work with one or more students to assist them in the use of the designated lab technology.
 - Get to know the student and determine students' understanding of the technology in question.
 - Stimulate an interest in subject if appropriate.
 - Work with the student, providing guided practice as necessary.
- 4) Report on the experience using the criteria below.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the technology that was being used.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 2a₁

ACTIVITY: The clinical student will re-teach a short (10-15 minutes) lecture-demonstration portion of a single class, patterning his or her procedures after those of the cooperating teacher.

GOAL: to provide clinical student the opportunity to see what it is like to teach, if only for a short while

PROCEDURE:

- 1) With the assistance of your cooperating teacher, determine the nature of the subject matter that will be taught on the following day after which you will pattern your presentation.
- 2) Clearly identify which component of the day's lecture-demonstration you should be prepared to present.
- 3) Carefully review your background in the subject matter area the night before the lesson.
- 4) Observe the cooperating teacher as (s)he presents the lecture-demonstration that you have agreed to re-present.
- 5) During a subsequent class period present as was agreed to by yourself and the cooperating teacher.
- 6) Hold a short debriefing following your presentation.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the presentation.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Overall, how do you feel about this experience? Did energize you? Were you nervous? How did you feel emotionally after you completed this experience?
 - o Conduct an honest self-assessment of this activity explaining what you believe went well.
 - o Conduct an honest self-assessment of this activity explaining what you believe did not go well.
- Reflect upon your experience giving due regard to the following:
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with students in such a way?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 2a2

ACTIVITY: The clinical student will re-teach a short (15 minutes?) problem-solving session of a single class, patterning his or her procedures after those of the cooperating teacher.

GOAL: to provide clinical student the practical experience of teaching if only for a short while

PROCEDURE:

- 1) With the assistance of your cooperating teacher, determine the nature of the subject matter that will be taught on the following day that you can pattern your work after.
- 2) Clearly identify which component of the day's recitation you should be prepared to present. Note the specific problems numbers if available.
- 3) Carefully review your background in the subject matter area the night before the lesson, and work through each problem being certain that you thoroughly understand the solutions.
- 4) Observe the cooperating teacher as (s)he presents the problem set that you have agreed to re-present.
- 5) During a subsequent class period present as was agreed to by yourself and the cooperating teacher.
- 6) Hold a short debriefing following your presentation.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the presentation.

- o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 2b1

ACTIVITY: The clinical student will plan, set up or take down one “off-the-shelf” laboratory activity.

GOAL: to provide clinical student the opportunity to familiarize himself with the rigors of preparing laboratory activities

PROCEDURE:

- 1) With the aid of the cooperating teacher, select an appropriate laboratory activity.
- 2) Plan for needed materials.
- 3) Collect needed materials.
- 4) Set up laboratory.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the lab set up activity
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain how you feel students will benefit from the lab experience.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 2b2

ACTIVITY: The clinical student will conduct one pre-lab classroom discussion.

GOAL: to provide student teacher the opportunity to acquaint himself with important elements of laboratory preparation

PROCEDURE:

- 1) Perform dry lab
- 2) Discuss safety with cooperating teacher including a summary of “standard” laboratory safety procedures
- 3) Identify steps for students if appropriate
- 4) Manage transition from discussion to lab

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the lab.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

Incorporate or address the following issues as appropriate:

- state procedures to be followed
- give location of equipment/supplies
- discuss data collection
- discuss analysis of data
- explain format of report/reporting procedure
- state time constraints
- cite sources of problems/errors
- mention ethical considerations
- require proper use of equipment
- state policy about clean up/waste disposal
- state pre-laboratory directions clearly and concisely
- cite and explain safety considerations if any
- state time limitations and expectations clearly
- provide clear expectations and goals as part of pre-lab
- incorporates references to science ethics
- students should analyze data as they progress through the experiment -- waiting to the end can result in data which is useless because it was improperly collect
- students should look for reasonable results as they progress through the experiment

CLINICAL INTERACTION 2b3

ACTIVITY: The clinical student will facilitate one laboratory activity.

GOAL: to provide clinical student the opportunity to familiarize himself with tasks associated with proctoring lab activities

PROCEDURE:

- 1) Manage transition from pre-lab to lab.
- 2) Facilitate laboratory activity.
- 3) Manage transition from lab to post-lab.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:

- o Time, date, place, duration, subject matter, conditions, etc.
- o Describe the situation and the nature of the presentation.
- o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

A well-proctored lab activity will incorporate the following:

- teacher mobility in lab
- not answering questions “too directly” - providing direction, not solutions
- enforcing/monitoring safety
- point out possible errors as students progress
- questioning/reinforcing students
- assuring time on task
- attentive to student conversations
- enforcing correct procedures
- watching for abuse/misuse of equipment
- eliminating horseplay
- modifying rules/procedures as appropriate
- deal effectively and efficiently with student questions and needs
- work with students during lab activity by providing assistance -- let students find the answers

CLINICAL INTERACTION 2b4

ACTIVITY: The clinical student will conduct one post-lab classroom discussion.

GOAL: to provide clinical student the opportunity to in draw a laboratory activity to a close

PROCEDURE:

- 1) Manage transition from lab to class.
- 2) Conduct follow-up discussion.
- 3) Write a brief report about what you learned through this experience.
- 4) Place written materials in clinical experiences documentation folder.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the presentation.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?

- o Do you currently feel qualified to work with such a student?
- o What future education do you need to do a better job?

A well-conducted post-lab will contain some or all of the following elements:

- teacher elicits student summary of goals
- teacher elicits student summary of procedure
- teacher elicits student summary of findings
- teacher elicits student summary of accuracy in findings
- sources of error
- how to improve experiment or procedure
- identify meaningful trends in data
- results appear reasonable
- summarizes mathematical procedures
- summarizes ethical dimensions, if any
- rejection of superfluous data, if any
- reliability of data
- validity of findings
- teacher uses appropriate questioning strategies
- teacher demonstrates ability to move discussion along

CLINICAL INTERACTION 2c

ACTIVITY: The student teacher will conduct a discussion-based review session in preparation for a quiz.

GOAL: to provide clinical student the opportunity to facilitate classroom discussion dealing with a limited range of subject matter

PROCEDURE:

- 1) Make arrangements with cooperating teacher to conduct a discussion-based review session.
- 2) Review the content and activities associated with subject matter to be reviewed.
- 3) Conduct review session.
- 4) Discuss your performance with cooperating teacher.
- 5) Write a brief synopsis of your findings, noting strengths and weaknesses.
- 6) Place written materials in clinical experiences documentation folder.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the presentation.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?
- preparation reflects consideration of objectives to be assessed in quiz.
- provide students opportunities for guided practice
- attempt to ascertain extent of student knowledge -- remediate deficiencies

- clearly state learning goals and/or behavioral objectives

CLINICAL INTERACTION 2d

ACTIVITY: The clinical student will provide an orientation to classroom students in the use of a particular technology in lab.

GOAL: to provide clinical student the opportunity to assess ability to help all students learn using available technology

PROCEDURE:

- 1) Several days (preferably a week) prior to the time when the technology will be introduced or used, identify the computer software/hardware or other form of technology for which students need orientation.
- 2) Prepare to assist students with technology. If this means getting to know some common computer hardware/software (e.g. PASCO's *ScienceWorkshop/DataStudio*, Vernier's *LabPro/LoggerPro*, *Interactive Physics*, *Graphical Analysis*, graphing calculators with probes, etc.), visit with the PHY 209 course instructor for assistance. Do NOT ask your cooperating teacher to teach you how to use the technology. If, on the other hand, the cooperating teacher volunteers to train you should training be necessary, you are welcome to accept the offer.
- 3) Provide a whole-class orientation in the use of the designated lab technology.
 - Get to know the student and determine students' understanding of the topic in question as well as learning background.
 - Stimulate an interest in subject if appropriate.
 - Work with the class, providing orientation and guided practice as necessary.
- 4) Report on the experience using the criteria below.

REPORT CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the technology that was being used.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 2e

ACTIVITY: The clinical student will conduct a whiteboarding session using the approach known as the Socratic dialogue.

GOAL: to provide clinical student the opportunity to assess student thinking

PROCEDURE:

- 1) Several days (preferably a week) prior to the time when you will conduct the whiteboard discussion, read the following two papers:
 - a. [Whiteboarding & Socratic dialogues: Questions & answers](#)
 - b. [Engaging students in conducting Socratic dialogues: Suggestions for science teachers](#)
- 2) Work with the class, providing orientation and guided practice as necessary.
- 3) Report on the experience using the criteria below.

REPORT CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the whiteboarding experience.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain how effective you were at eliciting student participation.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to conduct Socratic dialogues?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 2f

ACTIVITY: The clinical student will conduct classroom climate setting for a teacher who uses an inquiry-oriented form of instruction.

GOAL: to provide clinical student the opportunity to understand the importance of climate setting to the success of inquiry-oriented instruction.

PROCEDURE:

- 1) Several days (preferably a week) prior to the time when you will conduct the classroom climate setting, read the following paper: [Minimizing resistance to inquiry-oriented science instruction: The importance of climate setting](#).
- 2) Work with the class, provide orientation as necessary.
- 3) Report on the experience using the criteria below.

REPORT CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the climate setting process.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain how effective you were at conducting classroom climate setting.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to conduct climate setting?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 3a

ACTIVITY: The clinical student will assist the cooperating teacher with the development of instructional resources for a particular lesson or lab activity.

GOAL: to demonstrate that the clinical student can be both reliable and resourceful

PROCEDURE:

- 1) During the course of your clinical student experiences keep copies of all assessment instruments utilized by cooperating teachers.
- 2) Note especially alternative assessment instruments.
- 3) Write a report about your findings, including appropriate examples.
- 4) Place written materials in clinical experiences documentation folder.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the instructional activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 3b

ACTIVITY: The clinical student will collect, score, record, and return homework or another assignment.

GOAL: to provide clinical student the experience of some after-school activities that are required of all teachers

PROCEDURE:

- 1) Indicate availability to your cooperating teacher for the purpose of collecting, scoring, and recording homework or another assignment.
- 2) Agree upon what project will be collected and scored, and how the recording of scores can be accomplished – either with a separate sheet containing student names and scores, or direct entry into the cooperating teacher’s record book or computer program. **UNDER NO CIRCUMSTANCES** should the clinical student remove the cooperating teacher’s official records from the school.
- 3) Ask the cooperating teacher about the scoring procedure for the homework. Some use a detailed, problem-by problem approach; others use a general look-see approach where the assignment is scored holistically. Score and record results as agreed upon.
- 4) Turn back student papers and scores of the assignment.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:

- o Time, date, place, duration, subject matter, conditions, etc.
- o Describe the situation and the nature of the homework assignment.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 3c

ACTIVITY: The clinical student will create and utilize a rubric for grading student lab reports or another complex task.

GOAL: to acquaint clinical student with the nature and utility of grading rubrics

PROCEDURE:

- 1) Familiarize yourself with a structured lab activity, perhaps by working through the lab exercise itself.
- 2) Determine the nature of the expected outcomes to questions, findings, etc.
- 3) Create a grading rubric for the lab activity following the criteria below.
- 4) Share grading rubric with cooperating teacher, eliciting suggestions for change.
- 5) Grade the lab reports from students who have completed the lab activity.
- 6) Place written materials in clinical experiences documentation folder.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the presentation.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

A good grading rubric will have the following characteristics:

- possesses inter-rater reliability
- has even number of categories
- criteria are public
- criteria established using student input if possible (most suitable for open-ended activities)
- expectations are reasonable
- avoids subjectivity
- no "holes" exist in the grading continuum
- tasks are instruction-related activities

- criteria are generalizable
- criteria are clear, meaningful, and credible
- students are provided examples of items that meet various parameters in rubric

See your methods course instructor for details about writing rubrics.

CLINICAL INTERACTION 3d

ACTIVITY: The clinical student will create and administer a written quiz and conduct a follow-up analysis.

GOAL: to familiarize clinical student with difficulty of and problems associated with the preparation of a reliable and valid quiz

PROCEDURE:

- 1) Analyze a poorly written exam provided by methods course teacher.
- 2) Consult cooperating teacher about topic for a quiz.
- 3) Write a “good” quiz, being mindful of the pitfalls associated with question writing.
- 4) Have quiz approved by cooperating teacher, allowing sufficient time for revisions as indicated by cooperating teacher.
- 5) Administer quiz.
- 6) Grade quiz, record scores, and return quiz to students.
- 7) Conduct a question-by-question follow-up discussion with students, obtaining feedback.
- 8) Rewrite poor questions.
- 9) Place written materials in clinical experiences documentation folder.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Include a copy of the quiz you produced.
 - o Describe the situation and the nature of the quiz.
 - o Student’s actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain how you feel in light of this experience. Was your experience successful? A disaster? Did you find it trying? Time consuming?
 - o Look at your questions in light of student responses. Did you get the type of responses you expected?
 - o Were you able to accurately score your students’ responses?
- Reflect upon your experience giving due regard to the following:
 - o How might you improve your test writing in the future?
 - o Do you currently feel qualified to write tests and quizzes?
 - o What future education do you need to do a better job?

The following are some characteristics of suitable assessment:

- teacher assesses students’ knowledge and skills prior to introducing the new content
- teacher analyzes assessment procedures and students’ responses and behavior to ascertain indicators of progress and reasons for problems
- teacher analyzes the reliability and validity of the assessment procedure and modify rubric as needed
- teacher aligns assessment with goals of science curriculum
- teacher tests at different cognitive levels -- knowledge, comprehension, analysis, synthesis, application, etc.
- teacher has students to demonstrate interconnection skills -- the application of knowledge to other disciplines and/or real world experiences

- teacher uses a wide range of assessment methods and strategies aligned with the central goals of the science curriculum (objective tests, essay tests, performance assessment, portfolio assessment, research project, interview, etc.)
- teacher assess students on a daily basis (such as before, during, and after instruction) and is interactive with it (oral questioning, discussion, lab performance, etc.)
- teacher employs student self assessment
- the teacher provides students with periodic and meaningful feedback on exams, labs, in-class assignments and homework, etc.
- the teacher acknowledges correct responses and responds to incorrect and incomplete responses by probing, repeating the question, giving clues, rephrasing the question, waiting, or explaining why the answer is incorrect

CLINICAL INTERACTION 3e

ACTIVITY: The clinical student will create, administer, and review results of a practice test with classroom students.

GOAL: to provide clinical student with the opportunity to align assessment with objectives and teaching

PROCEDURE:

- 1) Analyze a poorly written exam provided by methods course teacher.
- 2) Consult cooperating teacher about topics for the sample test.
- 3) Write a “good” test, being mindful of the pitfalls associated with question writing.
- 4) Have test approved by cooperating teacher, allowing sufficient time for revisions as indicated by cooperating teacher.
- 5) Administer test.
- 6) Grade test, record scores, and return quiz to students.
- 7) Conduct a question-by-question follow-up discussion with students, obtaining feedback.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Include a copy of the test you produced.
 - o Describe the situation and the nature of the subject matter.
 - o Student’s actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

The following are some characteristics of suitable assessment:

- teacher assesses students’ knowledge and skills prior to introducing the new content
- teacher analyzes assessment procedures and students’ responses and behavior to ascertain indicators of progress and reasons for problems
- teacher analyzes the reliability and validity of the assessment procedure and modify rubric as needed
- teacher aligns assessment with goals of science curriculum
- teacher tests at different cognitive levels -- knowledge, comprehension, analysis, synthesis,

- application, etc.
- teacher has students to demonstrate interconnection skills -- the application of knowledge to other disciplines and/or real world experiences
- teacher uses a wide range of assessment methods and strategies aligned with the central goals of the science curriculum (objective tests, essay tests, performance assessment, portfolio assessment, research project, interview, etc.)
- teacher assess students on a daily basis (such as before, during, and after instruction) and is interactive with it (oral questioning, discussion, lab performance, etc.)
- teacher employs student self assessment
- the teacher provides students with periodic and meaningful feedback on exams, labs, in-class assignments and homework, etc.
- the teacher acknowledges correct responses and responds to incorrect and incomplete responses by probing, repeating the question, giving clues, rephrasing the question, waiting, or explaining why the answer is incorrect

CLINICAL INTERACTION 3f

ACTIVITY: The clinical student will, starting with the very beginning of the class period, bring student to complete attention, and then and only then give an assignment or make an announcement, and take attendance.

GOAL: to provide clinical student the experience of establishing and maintaining class attention

PROCEDURE:

- 1) Arrange to give an assignment and/or make an announcement, as well as take attendance at the beginning of a class.
- 2) Do same.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the introduction.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Did you feel comfortable performing this clinical experience?
 - o Was this clinical experience a "winner," or did it leave you feeling less than successful?
 - o Describe the reactions of the students as you made your introduction.
- Reflect upon your experience giving due regard to the following:
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to do the work of a teacher?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 3g

ACTIVITY: The clinical student will assist with an extracurricular activity such as an academic competition, sport, of social event.

GOAL: to provide clinical student with an understanding of the non-academic responsibilities of a teacher

PROCEDURE:

- 1) Arrange to attend, observe, and even participate in a non-academic responsibility of your cooperating teacher.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the extracurricular activity.
 - o Student's actions and reactions and changes as you moved through the activity.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of an enriching experience.
 - o Describe how your actions/reactions influenced the student.
 - o Describe improvements in student understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with such a student?
 - o What future education do you need to do a better job?

CLINICAL INTERACTION 3h

ACTIVITY: The clinical student will participate in a parent-teacher conference.

GOAL: to provide clinical student with an understanding of the role of parents in a student's education

PROCEDURE:

- 1) Arrange to attend, observe, and even participate in a parent-teacher meeting with approval of your cooperating teacher.
- 2) Prepare for the meeting by collecting pertinent information about the student's performance, and prepare to share this with the teacher.

CRITERIA:

Write a report in which you describe, analyze, and reflect upon your experience.

- Document your session in considerable detail giving due regard for the following:
 - o Time, date, place, duration, subject matter, conditions, etc.
 - o Describe the situation and the nature of the parent-teacher meeting.
 - o Parents' actions and reactions and changes as you moved through the meeting.
- Analyze your experience giving due regard to the following:
 - o Explain why you believe this student is in need of assistance, if any.
 - o Describe why you feel the parents came in for the meeting.
 - o Describe improvements in parent understanding achieved through this activity.
- Reflect upon your experience giving due regard to the following:
 - o How do you feel about this experience?
 - o How might you improve such an experience in the future?
 - o Do you currently feel qualified to work with parents of your students?
 - o What future education do you need to do a better job?