

Cohort 1: PTI Action Research Case Study

For Fall 2013

Using the unit on Force and Motion you will be teaching next year in one of your physics classes, conduct an action research activity to determine the effectiveness of your application of the PTI professional development you received this summer.

The action research activity will have the following components:

- 1) Description of the context of the Force and Motion unit including class used, textbook or other curriculum materials and Internet sites used as a part of the unit, number of students in the class, dates the unit and tests covered, etc.
- 2) Lesson plans or lesson outline (from textbook or individually designed unit, whatever you use) for each lesson in the unit.
- 3) Daily diary of events that occurred each day that seemed important to you – students' actions and reactions, things you did that worked or did not work, etc.
- 4) Administer a pre-test before the unit starts- modified version of the Force Concept Inventory
- 5) Administer a post-test after the unit is finished – modified version of the Force Concept Inventory
- 6) Interview a small group of your students at the end of the force and motion unit. Ask a version of the question, "What were your perceptions of this unit?" Some questions that you might ask include:
 - a) "What did you enjoy or like about the activities?" "What were the best parts of the unit?"
 - b) "What in the unit were you the most confident about learning?"
 - c) "What did you find difficult about the unit?"
 - d) "How did you get to the point where you finally got the idea in a difficult part?"
 - e) "What learning experiences did you find most helpful?"
 - f) "What do you think I wanted you to learn as a result of this unit?"
 - g) "Do you have questions about what we have learned?"
 - h) "How important was this topic to you?"
- 7) Write a narrative summary of the action research activity as a professional development activity. What did you learn? Was it successful? What would you change?
- 8) Report the results of this activity with parts 1-7, including the students' pre and post test scores and attach it in an email to dwsunal@bama.ua.edu.
- 9) Report (present) the results during one of the weekend workshops in the fall or spring so that others can gain from your lessons learned about ways to implement PTI summer activities into your physics teaching.