Foundations of Action Research in Science Education

Instructor: John Graves, EdD. 406-581-1253. D2L email

Course Description and Goals

The purpose of this course is to assist students in learning the conceptual underpinnings of action research in science education as they relate specifically to curriculum, teaching, and learning of science at the middle and high school levels. As a result of this course, students will be able to practice practical and applied classroom research. The course emphasizes a constructivist philosophy in an applied educational setting. The emphasis is on the teacher as inquirer, actively engaged in the construction of new knowledge about science education through the action research process.

Expected learner outcomes

- learning about the nature of science education research, especially how it is related to classroom-based inquiry
- utilizing internet based resources and participating in science education/action research interest groups
- analyzing conceptual and methodological aspects of a variety of science action research
- analyzing the relation of specific action research to the effectiveness of classroom instruction and local practice
- developing an understanding of the science teacher as an active producer of research-based knowledge
- understanding how action research techniques can inform science and learning
- completing required Institutional Review Board (IRB) Training, and
- designing a personal action research project plan.

At the completion of the course, each student will have completed an ACTION RESEARCH PROJECT PROPOSAL that includes a focus statement, a literature review (conceptual framework), a description of the proposed treatment, and data collection strategies. In most cases, this proposal will be implemented during the MSSE 509 course during the fall semester following MSSE 505.

Texts

Action Research: Improving Schools and Empowering Educators (Mertler - Sage)

Grading

Assignments will scored on the basis of the writing rubric, found on the Help Pages. Unlike rubrics in other courses that are more specific, these are more broad due to the open nature of individual writing of educational research.

Remember, this is a graduate level course and the writing must be graduate level quality. Extensive guidance is provided on the Writing Expectations of the Help Pages. Please review these before submitting your written assignments.

Course Grading:
A (94-100%)
A- (90-93%)
B+ (87-89%)
B (84-86%)
B- (80-83%)
C+ (77-79%)
C (74-76%)
C- (70-73%)
D+ (67-69%)
D (64-66%)
D- (60-66%)
F (0-59%)

Submitting Assignments

When submitting assignments, please save your file as a Microsoft Word document. Nearly all files in the MSSE Program are created on Microsoft Word. I use the Track Changes feature of Word to provide feedback and editing of your papers. Be sure to have Track Changes turned on in your Word application. Also, be sure to submit a "clean" copy file each time you submit. Assignments will be returned to the Dropbox within one week after submission. If more time than that has transpired, be sure to check with John about the status of your assignment(s).

Re-doing Assignments

You are welcome to re-do an assignment if you did not receive a score acceptable to you. You must re-submit the assignment in its entirety, having made the appropriate corrections or additions. Leave the original submission intact and then ADD your corrections in bold or in color. If you are using Microsoft Word, make the corrections in a type and/or font other than you used for the original assignment. That makes it easy for me to see the exact changes you made. It is assumed that the revised work will be of "exemplary" quality and your score will be changed to reflect your extra effort and work. At some point in the course, this option may be removed...be sure to check weekly assignments. Resubmissions will be awarded a maximum of 90%.
Maintaining Intellectual Integrity (Plagiarism)

Paraphrasing or quoting another’s work without citing the source is a form of academic misconduct. Even inadvertent or unintentional misuse or appropriation of another’s work (such as relying heavily on source material that is not expressly acknowledged) is considered plagiarism. All sources of information that are not your original thoughts need to be cited. This includes, but is not limited to, journal articles, textbooks and online resources. Adapted from MSU Syllabus language page: http://www.montana.edu/teachlearn/TLResources/SyllabusLanguage.html

The Dropbox of D2L has a plagiarism checking feature attached to it called Turnitin. It will be activated for all submitted assignments.

Discussion Seminar Participation

Each week, you must participate in the general discussion. The discussion assessment will be based on the self-assessment reflection rubric, which each student will submit at the end of each week to the Dropbox. If you are assigned Discussion Leader for the week, please follow the Discussion Leader Guidelines and submit the Discussion Leader Rubric.

Late Work

Assignments are due by midnight, Montana time, on the date posted. Submissions received AFTER that time will receive a late penalty of 10%. However, if you know you are going to be late with an assignment, please let JOHN know and you will be exempt from the late penalty as long as you have a compelling reason for the lateness and you provide a reasonable, timely due date. A phone message on Sunday night informing John of an internet connection problem and that you hope to be able to submit by noon on Tuesday is an acceptable reason to receive an exemption from the late penalty. The instructor realizes that we are all busy and situations will arise that are beyond our control. The request is that you be responsible with both communication and completion of the required work.

Grades

Current grades and your standing in the course will be available by checking the Grades link on the course. If you have questions or concerns about your grades, be sure to ask.

Keys to Success

The following practices have proven to help students be as successful as possible in my online courses:

• Communicate, communicate, communicate. When in doubt, ask. If you are behind, let
me know. If you get stuck, give a call. I can usually clear up in a five minute phone call what may take you days to figure out on your own.

• Keep up with NEWS and email messages. I post vital information in the NEWS section and through email messages. Make it a habit to check these every time you login.
• Use the course Helps. The resources are there to assist you with assignments, writing and more. Use them.
• Read all the feedback provided on assignments and make changes accordingly to the next assignment. Don't get into the habit of creating bad habits...each assignment should be an improvement on the prior.
• Try not to fall behind. If you do, stay current with the week you re-join the course and make up the missing work as you can. That prevents you from getting farther behind.
• Enjoy the journey. This is a process...a marathon, not a sprint. Enjoy it, but don't forget to take that first step.

STUDENT CONDUCT

Montana State University expects all students to conduct themselves as honest, responsible and law-abiding members of the academic community and to respect the rights of other students, members of the faculty and staff and the public to use, enjoy and participate in the University programs and facilities. For additional information reference see

[link]

Collaboration:

University policy states that, unless otherwise specified, students may not collaborate on graded material. Any exceptions to this policy will be stated explicitly for individual assignments. If you have any questions about the limits of collaboration, you are expected to ask for clarification.

Academic Misconduct:

Section 420 of the Student Conduct Code describes academic misconduct as including but not limited to plagiarism, cheating, multiple submissions, or facilitating others’ misconduct. Possible sanctions for academic misconduct range from an oral reprimand to expulsion from the university.

Academic Expectations:

Section 310.00 in the MSU Conduct Guidelines states that students must:

A. be prompt and regular in attending classes;
B. be well prepared for classes;
C. submit required assignments in a timely manner;
D. take exams when scheduled;

E. act in a respectful manner toward other students and the instructor and in a way that does not detract from the learning experience; and

F. make and keep appointments when necessary to meet with the instructor.

In addition to the above items, students are expected to meet any additional course and behavioral standards as defined by the instructor.