EDCI 509 Implementing Action Research in Science Education
Syllabus

Course Description
This course is the second in a two-part series of studies in Action Research offered in the intercollege Masters of Science in Science Education (MSSE) Degree. As such, it will help students implement their action research as it relates specifically to science teaching, learning and curriculum in middle and high school classrooms. This course will help the student to effectively complete a practical and applied classroom research project, which if the student and his/her graduate committee agree, could be the basis for the capstone experience in their graduate program.

The course emphasizes a constructivist philosophy in education. The emphasis is on the teacher as inquirer, actively engaged in the construction of new knowledge about science education.

Expected Student Learning Outcomes include

• COMPLETE AN ACTION RESEARCH-BASED PROJECT IN YOUR CLASSROOM
  • complete an application for the Capstone project for IRB approval
  • complete an electronic "poster" describing your action research-based project to be shared with your Project Director
  • communicate extensively with teachers who have similar interests
  • apply the action research process to professional staff development plans
  • engage in an on-going discussion with your Project Advisor regarding your action research and subsequent capstone project

Action Research Outline
1. Living educational action research.
  • similarities and differences to other research paradigms
  • main features of the process
2. Starting the action research.
   • working with other people
   • interpersonal skills
   • ethics
   • action planning
3. Doing the action research project
   • research cycle
   • implementing the plan
   • getting started
4. Monitoring and documenting the action
   • collect data
   • manage data
   • involving others
5. Techniques for dealing with data
   • research diary
   • interviews
   • visual data
6. Making claims to knowledge and validating them
   • what does that mean?
   • validation
   • criteria and standards of judgment
7. Making the research public; creating your living theory
   • sharing your work
   • epistemology of educational practice
   • writing the report

Performance Outcomes

• Performance requirements:
  - application of action research principles in your classroom
  - synthesis of concepts across disciplines and application to teaching and learning
  - evaluation of teaching and learning
  - collaboration with other teachers who have similar interests
Performance Assessments
• Student learning will be assessed through the following:
  - active participation in on-line class discussions and activities
  - electronic poster of the action research study
  - completion of an action research project
  - evidence of on-going discussion with your Project Advisor

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 (60-66%)
• F (0-59%)

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 the MSU Syllabus language page.

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

Final Action Research Paper

By the end of the course you will submit an action research-based project undertaken in your classroom. It will still be a WORK-IN-PROGRESS as you are expected to continue treatment and data collection January-March of next year for your Capstone. For the purposes of the paper in this course, you will complete one (1) round of data collection only. Many students view this as PILOT to their study.
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 everytime 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.