Action research is an approach to scholarly inquiry that can be also be used as a vehicle for empowering teachers and learners. Action research involves a spectrum of activities (e.g., research, planning, theorizing, learning and development) aimed at the resolution of a problem or problems. In EDUC 369, you will create an Action Research Project Design Document that describes and details the action research study project you will implement for your capstone project. The purpose of this information packet is to provide you with guidelines and suggestions for writing your Action Research Project Design Document.

Action Research Project Design Document Outline

Your design document should have the following components:

- Title page
- Abstract
- Chapter 1 Project Overview
- Chapter 2 Literature Review
- Chapter 3 Action Research Design
- References
- Appendices (optional)

Your document should follow the American Psychological Association (APA) guidelines for style, references and citations. Please refer to the *Publication Manual of the American Psychological Association* (5th edition) as you write your design document.

Title Page

Your title page should have these three sections:

- Running header (e.g., “Problem Solving”) at the top of the page
- Project title (e.g., “Problem Solving: Teaching Mathematics to Students in a Changing World”)
- Author, school and date

Abstract

In this section, you provide a 100-200 word description of your project, the research problem, context, methodology, etc.
CHAPTER 1 PROJECT OVERVIEW

This chapter introduces the research topic to the reader, discusses why the topic is important to you, and describes what the project is fundamentally about. Here are typical sections within your chapter 1.

- Introduction (this heading does NOT appear in your document)
  - Statement of the Educational Topic or Problem
  - Include references as appropriate
  - Reason for selecting this topic
- Purpose of the study
  - The purpose of this study is to ...
- Research questions
  - State driving questions
  - (Optional: Distinguish between primary questions and secondary questions)
- Description of the intervention or innovation
  - Briefly describe the target population or participants, and what you will be doing
- Definition of Terms (Optional)
  - This is important when you are using terms that some readers may not be familiar with

CHAPTER 2 LITERATURE REVIEW

This chapter is a summary of relevant education research and educational theories related to the study topic. It should include a minimum of 5 empirical research articles. An empirical research article is an article which describes the results of a research study that uses data derived from observations or experiment. Empirical research articles are generally published in academic journals. In addition, you may want to discuss other relevant literature. Here are typical sections within a literature review.

- Introduction (this heading does NOT appear in your document)
  - General introduction topic area, problem, and/or research questions
  - Provide an advanced organizer; briefly preview the major themes or sections of this chapter
- First main theme (this is typically identified with a header – see APA style manual to review proper header formatting)
  - Summary of article 1
  - Summary of article 2
  - Summary of article 3
- Second main theme
  - Summary of article 4
  - Summary of article 5
  - Summary of article 6
- Conclusion
  - Summarize your findings
  - Identify the educational theories or perspectives from the literature that inform your project
WRITING LITERATURE REVIEW ARTICLE SUMMARIES

For each of your empirical research summarize the following:

- Purpose of study, research questions, and context
- Methodology
- Results and discussion

A typical summary will be 300-500 words long. Here is an example of a summary of an empirical research article by Capobianco and Lehman (2006):

In an action research study investigating the effects of integrating instructional technologies into an elementary science methods course by a science teacher educator, Capobianco and Lehman (2006) found that the use of instructional technologies helped preservice teachers learn science content, promoted productive scientific inquiry, and facilitated self-reflection.

Capobianco, the first author and a science teacher educator, collaborated with faculty and graduate students associated with the Purdue Program for Preparing Tomorrow’s Teachers to Use Technology (P3T3) to infuse instructional technologies throughout a semester long elementary science methods course. The participants in this study were 38 preservice teachers from two different sections of the course offered in the spring 2003 (N=14) and fall 2003 (N=24) semesters.

It was Capobianco’s intent to create numerous opportunities for preservice teachers to use technology in multiple ways throughout the course that went beyond basic communication and information search tasks. Students in her course used software such as Excel and PowerPoint, probeware (electronic laboratory sensors that interface with computers) such as temperature probes and heart rate monitors, and digital cameras. The students used these technologies to engage in scientific inquiry, explore productive questioning and journaling, and to plan and conduct experiments. The researchers collected data from student feedback forms, classroom observations, field notes, reflective journals of students and the instructor, student work, and the instructor’s lesson plans. Capobianco and Lehman (2006) found that after taking the course, students’ interest in and ability to use technology increased, students’ perception of the usefulness of technology was positive, and students had a high interest in integrating instructional technologies into their own teaching. They concluded that the incorporation of instructional technologies was beneficial in developing pedagogical content knowledge in science education among the participants in the study.

CHAPTER 3 ACTION RESEARCH STUDY DESIGN

This chapter describes in detail what you will be doing in your action research project. Here are common sections of this chapter:

- Introduction (this heading does NOT appear in your document)
  - Statement of the Educational Topic or Problem
- Purpose of the study
  - Area of focus
- Research questions
- The role of the researcher
- Participants (or target population)
- Description of the intervention or innovation
- Data collection
- Statement of resources
- Timeline

REFERENCES

All of your references and sources should be listed here. Each article used in your literature review must be cited. Remember to use APA style and formatting.

APPENDICES (Optional)

If there are things that would be helpful for the reader to see and read that do not fit in the body of your document, please include them here. Things you might include in your appendices are: questionnaires, data previously collected, curriculum unit plans, sample assessments, and report summaries.

RECOMMENDED RESOURCES:


APA Formatting and Style Guide. (N.D.) Purdue University. http://owl.english.purdue.edu/owl/resource/560/01/

Sample MA in education capstone project titles from Santa Clara University

Using social justice, critical thinking, and service learning to teach effective citizenship in the high school U.S. history classroom
Parent volunteering in the classroom: increasing student success by training parents to teach and work with children in the classroom
Technology integration in an elementary science methods course: a curriculum project
Dance curriculum to build protective factors for at-risk youth
Blogs, podcasts and multimedia presentations: a curriculum project studying meaningful learning in an advanced high school Spanish classroom
A case study: critical success factors for implementing electronic portfolios in the liberal studies program at Santa Clara University
Crossing the starlight bridge from risk to resiliency: fostering resiliency through literature
The application of constructivist theory to the design of online learning environments in higher education
Integration of multiple sources of primary and secondary information: a curriculum unit designed to help students learn about the changes that took place in California prior to statehood
"Basically fun MATH!": going back to the basics in mathematics
Educating for a more peaceful world: incorporating social intelligence, gender equity, and character education into the existing curriculum
Integrating character education into kindergarten language arts
A literature-based character education unit
Teaching methodologies that promote student learning in mathematics
Inferring with primary readers: a reading comprehension unit
The application of best practices in teaching the elementary science curriculum
Living-learning centers, academic programs, and their educational outcomes: a comparative case study of Santa Clara University and the University of Denver
Attitudes towards the use of technology in the social studies classroom
Emotional intelligence and writing in the high school English classroom
"What's the point!?": challenging the gifted child through grouping and curricular modifications
Multicultural children's literature: an integration
Improving the writing skills of deaf and hard of hearing middle school students in a mainstream classroom
How social studies teachers should deal with religious themes as presented in the state standards
The parables: a literature unit on the New Testament parables
Ignatian education: a curriculum unit designed around Ignatian pedagogy to help improve adolescent boys' secondary education
Using children's literature to facilitate character education in the kindergarten classroom
Factors sustaining the ACOT teacher development center research project
Using Classworks and Houghton Mifflin to teach phonemic awareness

Examples of MA action research project titles

The Effects of Foreign Language Study on SAT Verbal Scores
The Effect of Math Clubs on Mathematics Achievement and Attitudes Toward Mathematics of Eighth-Grade Females
The Effects of Mentoring on the Academic Achievement and Behaviors of Middle School African American Males
The Effects of the Second Step Violence Prevention Program on the Climate and Discipline in a Suburban Middle School
Reading Motivations: A Study of Fourth-Grade Students and the Factors Influencing Their Tendency to Read for Pleasure
The Effects of Occupational Stressors, Locus of Control, and Teaching Efficacy on the Attrition Rate of Special Education Teachers
The Effects of Cooperative Homework Teams on Homework Completion and Accuracy of Sixth Graders
The Effects of Interscholastic Athletics on Academic Achievement
The Effects of Engaging Teaching Strategies on the Academic Achievement of At-Risk High School Students in French Class
The Effects of Mentoring on the Academic Achievement of At-Risk African American Male Students
The Effects of Comprehending Expository Text in Content Reading Through Direct Instruction of SQ3R Strategy
Increasing Homework Effectiveness: An Examination of Adult-Guided Intervention on Students who Fail to Complete Homework Regularly
The Effects of a School-Wide Vocabulary Program on Eighth Grade Reading Achievement
The Relationship Between Instrumental Music Instruction and Achievement in Mathematics Among Fifth-Grade Students
The Effects of “Earobics” on Phonemic Awareness Achievement of a Third-Grade Student With Speech and Language Disabilities
The Effects of Parental Involvement With Math Homework on the Achievement of Fifth-Grade Students
Your task is to design an action research study to answer a school-based question. Use the following steps to create the components of your written plan:

1. Write an area-of-focus statement.
2. Define the variables.
3. Develop research questions.
4. Describe the intervention or innovation.
5. Describe the membership of the action research group.
6. Describe negotiations that need to be undertaken.
7. Develop a timeline.
8. Develop a statement of resources.
9. Develop data collection ideas.

**Write an Area-of-Focus Statement**

An area of focus identifies the purpose of your study. To start, write a statement that completes the following sentence: “The purpose of this study is to...” For example:

The purpose of this study is to describe the effects of an integrated problem-solving mathematics curriculum on student transfer of problem-solving skills and the retention of basic math facts and functions.

The purpose of this study is to describe the impact of bringing audience members into an interactive relationship with teen theater productions on participants' abilities to identify issues and incorporate solutions to similar problems in their own lives.

The purpose of this study is to describe the effects of student-led conferences on parent and student satisfaction with the conferencing process.

**Define the Variables**

As part of the area-of-focus statement construction process, write definitions of what you will focus on in the study. These definitions should accurately represent what the factors, contexts, and variables mean to you. A variable is a characteristic of your study that is subject to change. That is, it might be the way you are going to change how you teach, the curriculum you use, and student outcomes. Definitions may also emerge from the literature, but it is important that you are committed to whatever you are defining and communicate that to others. In the preceding examples, the researchers would define what they mean by “an integrated problem-solving mathematics curriculum,” “transfer of problem-solving skills,” “the retention of basic math facts and functions,” “interactive relationship with teen theater productions,” “student-led conferences,” and “parent and student satisfaction with the conferencing process.” If you are clear about what you are examining, it will be easy to determine how you will know it when you see it! That is, your data collection ideas will flow more freely, and there will be no confusion when you communicate with your action research collaborators about your purpose.

**Develop Research Questions**

Develop questions that breathe life into the area-of-focus statement and help provide a focus for your data collection plan. These questions will also help you validate that you have a workable way to proceed with your investigation. For example:

What is the effect on student performance on open-ended problem-solving tests of incorporating math manipulatives into problem-solving activities?
In what ways do students transfer problem-solving skills to other areas of mathematics?
How do students incorporate problem-solving skills into other curriculum areas?
How do students transfer problem-solving skills to their life outside of school?

Describe the Intervention or Innovation
Describe what you are going to do to improve the situation you have described. For example, you might say, “I will implement a standards-based integrated problem-solving mathematics curriculum.” “I will include audience improvisation as part of the teen theater performances I direct,” or “I will incorporate student participation in student-parent-teacher conferences.” You need only to provide a simple statement about what you will do in your classroom or school to address the teaching-learning issue you have identified.

Describe the Membership of the Action Research Group
Describe the membership of your action research group, and discuss why its members are important. Will you be working with a site council team? A parent group? If so, what will be the roles and responsibilities of the group’s participants? For example:

I will be working with seven other high school math teachers who are all members of the math department. Although we all have different teaching responsibilities within the department, as a group we have decided on problem solving as an area of focus for the department. Each of us will be responsible for implementing curriculum and teaching strategies that reflect the new emphasis on problem solving and for collecting the kinds of data that we decide will help us monitor the effects of our teaching. The department chair will be responsible for keeping the principal informed about our work and securing any necessary resources we need to complete the research. The chair will also write a description of our work to be included in the school newsletter (sent home to all parents), thus informing children and parents of our focus for the year.

Describe Negotiations That Need to Be Undertaken
Describe any negotiations that you will have to undertake with others before implementing your plan. Do you need permission from an administrator? parents? students? colleagues? It’s important that you control the focus of the study and that you undertake the process of negotiation to head off any potential obstacles to implementation of the action plan. It’s very frustrating to get immersed in the action research process only to have the project quashed by uncooperative colleagues or administrators.

Develop a Timeline
In developing a timeline, you will need to decide who will be doing what, when. Although not part of a timeline in the strictest sense, you can also include information on where and how your inquiry will take place, which will help you in this stage of your planning. For example:

Phase 1 (August–October). Identify area of focus, review related literature, develop research questions, do reconnaissance.


Phase 3 (January–May). Modify curriculum and instruction as necessary. Continue ongoing data collection. Schedule two team meetings to discuss early analysis of data.
Phase 4 (May–June). Review statewide assessment test data, and complete analysis of all data. Develop presentation for faculty. Schedule team meeting to discuss and plan action based on the findings of the study. Assign tasks to be completed prior to year two of the study.

Develop a Statement of Resources

Briefly describe what resources you will need to enact your plan. This is akin to listing materials in a lesson plan—there is nothing worse than starting to teach and finding you don’t have all the materials you need to achieve your objectives. For example, to participate in the study of math problem-solving skills, the team determines that it will need teacher release time for project planning, reviewing related literature, and other tasks; funds to purchase classroom sets of manipulatives; and a small budget for copying and printing curriculum materials. After all, there is no sense developing a study that investigates the impact of a new math problem-solving curriculum if you don’t have the financial resources to purchase the curriculum.

Develop Data Collection Ideas

Give a preliminary statement of the kinds of data that you think will provide evidence for your reflections on the general idea you are investigating. For example, brainstorm the kind of intuitive, naturally occurring data that you find in your classroom or school, such as test scores, attendance records, portfolios, and anecdotal records. As you learn more about other types of data that can be collected, this list will grow, but in the early stages think about what you already have easy access to and then be prepared to supplement it with interviews, surveys, questionnaires, videotapes, audiotapes, maps, photos, and observations as the area of focus dictates.

The tasks just described can be undertaken whether you are working individually, in a small group, or as part of a schoolwide action research effort. The resolution of these issues early in the action research process will ensure that you do not waste valuable time backtracking (or even apologizing) once you are well down the action research path.