Stone Child College
Action Research in Education
EDU 460

Course Information

a. *Number:* EDU 460
b. *Credits:* 3
c. *Prerequisite:* Acceptance into TEP program
d. *Corequisite:* EDU 480
e. *Offered:* Fall Semester

Personal Information

TBA

Course Materials

Hendricks, C. (2016). *Improving schools through action research.* Pearson: *www.*Pearson.com.

Description

Action Research in Education will allow candidates to explore and apply theory and methodology for conducting classroom based action research through the investigation of a significant question or issue related to teaching in K through 8th grade classrooms. This course serves as the prerequisite and foundation for EDU 495 taken during student teaching in which candidates gather and analyze data as they carry out their research, report results, and develop implications for their future teaching practice and continued action research.

Course Rationale

This course will introduce candidates to the methodologies used in carrying out action research for the purpose of informing pedagogical practice usually at the individual classroom level. Candidates will be instructed in the research skills of proposing researchable problems, reviewing existing research, designing appropriate methodologies, conducting an analysis of data, and applying the findings to improving practice. The action research carried out in this course will serve as a beginning of the capstone research project required for graduation.

The overarching purpose of this course is for education candidates to learn how to use objective data to improve the education of their students. By appropriately collecting and analyzing objective data, best practices can be more accurately defined and implemented as well as more easily shared with other educators and with the parents of future students. Objective research elevates the findings to a form that makes it much easier for others to see the validity of what you is being stated, simply because the data is objective rather than subjective.

Course Objectives

- Students will reflect on the cultural relevancy of their proposed action research as part of the research proposal process;
- Students will observe, discuss, and reflect how culturally relevant instruction plays a role in their focus classroom;
- Students will reflect on the impact their study has on the cultural responsiveness of the instructional practices in their focus classroom;

- Students will critique current educational research articles based upon research standards in development of their action research proposals;
- Students will critique their own educational research by ensuring both the development and writing of their action research projects are based upon objective standards rather than opinion;
- Students will identify a research problem and propose an associated research question, review existing research and design a methodology appropriate to the research problem, collect and analyze the data, and apply the findings to a self-selected action research problem;
- Students will formally share the results of their action research projects with students, colleagues, and other professionals in order to illuminate how they came to better understand best practices in their own classrooms;
- Students will conduct action research that contributes to the education of their students and subsequently to the common good of the school and community;
- Students will formally share the results of their action research projects with other education candidates, colleagues, and other professionals as a means of improving instruction for all students throughout the reservation and beyond.

Course Requirements

In this course, students will use APA writing style and do the following:

1. Identify possible areas of interest for classroom level research;
2. Provide a draft of the action research problem;
4. Provide a draft of the current research as it relates to the action research problem;
5. Provide a draft of the appropriate methodology to investigate the research problem;
6. Write a finished APA version of the research plan and submit for approval;
7. Using mock data, analyze, and report findings;
8. Create a final version of the complete action research project and explain how to use the findings to mitigate the problem addressed by the students' action research.

Credit Hours

In order to meet the identified student learning outcomes as per the SCC Credit Hour Policy, this 3 credit course will be delivered over a 15-week term to include:

1. Three hours per week of classroom or direct faculty instruction;
2. Six hours per week of independent work on developing class assignments.

Out-of-class student work will approximate a minimum of six hours each week or as needed to meet the course learning objectives. This will include research, writing, and assigned readings.

Grading

Grades for this course are earned based on the criteria and rubric outlined below.

1. An Incomplete grade ("I") is NOT a common option and only given in the case of an extreme emergency. The instructor must be notified within 48 hours of the emergency and has sole discretion in granting (*rarely done*) or denying an incomplete grade.
2. Your final grade will be determined as outlined below.

Weekly Assignments/Quizzes <u>*Grades by Percentage*</u>

Research Problem	A → $90 \leq$ grade ≤ 100
Review of Literature	B → $80 \leq$ grade < 90
Analysis and Findings	C → $70 \leq$ grade < 80
Complete Research Project	D → $60 \leq$ grade < 70
Reflective Essay for InTASC Principle 9	F → < 60
3 Evidence Documentation Forms	

If for any reason work is to be handed in after an identified deadline, previous arrangements must have been made with the instructor *prior* to the deadline. Late work *will not be accepted* if not prearranged.

Relevant PEPP Standards and InTASC Principles

InTASC Principle 9: Professional Learning and Ethical Practice and PEPPS 10.58.501 (i)	The candidate engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.
Assessment Indicators	4.1 Engage in ongoing professional learning to provide all learners with engaging learning experiences 4.2 Evaluate outcomes of teaching using a variety of data, including systematic observation, information about learners, research to adapt planning and practice 4.3 Reflect on teaching practices to improve instruction

Attendance/Class Policies

Attendance and being on time are of the essence to this course as well as throughout all of your professional life! You are expected to remain in class until the designated time set for dismissal. If you must leave early, please inform the instructor *prior to the start of class*.

Class time is not a time to be engaged in personal communications. Use of cell phones or other personal communication devices is strictly reserved for class requirements; all devices should be in *silenced mode* during class.

For you to get the most from this course full participation is a necessity. Being a fully participating member in this course requires that you come with the materials, tools, and any completed assignments necessary for each class period. There will be many discussions, and assignments you will not be able to make up due to the nature of the activity. Consequently, poor attendance will result in missed information, missed assignments, quizzes, and tests resulting in possible failure of the course.

Students are responsible for coming prepared to every class and to do so on time.

This is a course designed to help you prepare to be a professionally engaged teacher. When you become a classroom teacher, it will continue to be of the essence to be at school at all times and on time if not earlier. Consistent attendance and promptness both in your college classes and later in your own classrooms are clear evidence that you accept the responsibilities expected of a professional educator. Arriving early and leaving late is often a great time to

help students who avoid seeking help during class time. One of the most important things your letters of recommendation can contain is a statement from your reference stating that you are always prompt and rarely if ever miss a class or work.

Other

Course Responsibilities
Knowledge of the course content, class lectures, assignments, activities, and syllabus content are the responsibility of the student regardless of absenteeism. Syllabus content and calendars are tentative; your instructor will notify you of any changes.

Instructional Methodologies
The methodologies of instruction in this course include using techniques of inquiry, hands on experiences, forming knowledge, discussions, lecture, and independent practice as well as other instructional practices. One such practice is the effective and appropriate instructional use of technology to enhance learning experiences.

Course Outline
Below each week is listed with an intended focus for that week. This schedule is tentative and the students will be notified of whenever changes are made.

Students will cover action research concepts and terminology.

Students will development their research problems and research questions.

Students will review appropriate literature.

Students will develop their research methodologies.

Students will write the final version of their research plans, present to the class, and submit for approval.

Students will be given practice or dummy data for their research and work in class to analyze their data and determine how their findings and conclusions will inform their practice.

Students will work in class on the final write-ups of their research.

Students will give an in-class presentation of their research and turn in their final write-ups.

Note: A completed Action Research Project is a graduation requirement that must be completed by the end of the student teaching experience. This research project may serve as a guide, template, or actual draft for the final project you submit upon completion of student teaching.

RUBRIC AND LEVELS OF PERFORMANCE FOR MEETING THE ASSESSMENT INDICATORS RELATIVE TO THIS COURSE

RUBRIC FOR REFLECTIVE ESSAYS: InTASC PRINCIPLE 9
The essential elements assessed in the Reflective Essay are: 1) The writing of the essay must be clear and articulate and reflect the 6 traits of writing (Ideas—the main message; Organization—the internal structure of the piece; Voice—the personal tone and flavor of the author's message; Word Choice—the vocabulary a writer chooses to convey meaning; Sentence Fluency—the rhythm and flow of the language; Conventions—the mechanical correctness; 2) the essay must include an explanation of how the Principle applies to the candidate's teaching and student learning; 3) the

essay must describe examples of evidence related to the candidate's experiences and artifacts or evidence being submitted; 4) the essay must include a summary statement on the candidate's goals for continued growth and the candidate's continued commitment to implementing the principle in future work.

Stone Child College's Education Department
Reflective Essay Rubric

Domain:_____ InTASC Principle:_____
Candidate:_____
Reviewed by:_____/Date/s:_____

Essential Elements for the Reflective Essay	0 Unacceptable	1 Developing	2 Proficient	3 Exemplary
In a thoughtful, articulate, and clearly written essay: **(1) Explain how the principle is relevant or meaningful to your teaching and student learning;** **(2) Describe ways you have implemented the principle or examples of evidence that support your strengths;** **(3) Summarize your commitment to the principle and highlight your goals related to the principle.**	Unacceptable (0) is defined to be a level of work lacking clear demonstration of more than one essential elements being assessed.	Developing (1) is defined to be a level of work that indicates all essential elements have been demonstrated, but one of those critical elements are underdeveloped to the degree it would be prudent for the candidate to receive additional preparation in the underdeveloped area.	Proficient (2) is defined to be a level of performance that indicates all assessed elements have been developed to the degree that it is reasonable to conclude the candidate has succeeded in meeting the stated expectations of the assessment.	Exemplary (3) is defined to be a proficient candidate who has developed beyond expectations in 50% or more of the essential elements being assessed.

Score:_____ Comments and suggestions:

EVIDENCE DOCUMENTATION RUBRIC AND GUIDELINES

Evidence Documentation Form 1: The essential elements for this assessment are: The artifact must demonstrate the candidate's ability to engage in ongoing professional learning to provide all learners with engaging learning experiences (Assessment Indicator 4.1).

Evidence Documentation Form 2: The essential elements for this assessment are: The artifact must demonstrate the candidate's ability to evaluate outcomes of teaching using a variety of data, including systematic observation, information about learners, research to adapt planning and practice (Assessment Indicator 4.2).

Evidence Documentation Form 3: The essential elements for this assessment are: The artifact must demonstrate the candidate's ability to reflect on teaching practices to improve instruction (Assessment Indicator 4.3).

Essential Elements	0 Unacceptable	1 Developing	2 Proficient	3 Exemplary
The artifact must demonstrate the candidate's ability to 1) apply knowledge in the areas of language, speaking and listening, reading and writing processes, literature, print and non-print texts, which are inclusive of texts from and about American Indians and tribes in Montana; and technology, and 2) plan, implement, assess, and reflect on English/language arts and literacy instruction that promotes critical thinking and creates engagement. 3) The Evidence Documentation Form must reflect the 6 traits of writing.	Unacceptable (0) is defined to be a level of work lacking clear demonstration of more than one of the essential elements being assessed.	Developing (1) is defined to be a level of work that indicates all essential elements have been demonstrated, but one of those critical elements are underdeveloped to the degree it would be prudent for the candidate to receive additional preparation in the underdeveloped area.	Proficient (2) i s defined to be a level of performance that indicates all assessed elements have been developed to the degree that it is reasonable to conclude the candidate has succeeded in meeting the stated expectations of the assessment.	Exemplary (3) i s defined to be a proficient candidate who has developed beyond expectations in 50% or more of the essential elements being assessed.

Notes for Action Research

Primary Objective: Candidates will demonstrate knowledge of a teaching intervention and the ability to determine the degree, if any, to which the intervention is associated with mitigating the research problem by conducting action research and engaging in professional reflection.

Chapter 1

Within two weeks of the student teaching or clinical field experience, the candidates will identify a problem involving student achievement (educational performance) in their placements. The candidates will propose a research question addressing the problem in order to explore the problem in such a way that the answer to the question may very well mitigate the problem.

Chapter 2 Review of Literature

A literature review of 4-5 research based articles will be critically reviewed. The intervention should target the identified problem with the purpose of mitigating the problem by increasing appropriate learning outcomes.

Chapter 3 Methodology

The population for the research will be the students being taught by the student teacher or a subgroup there of. The researcher must state the specific research question(s) that will serve to form the methodology an appropriate hypothesis to address the research question. The basic design for the research will be to implement an intervention to generate data that allows for comparisons of group means and/or provides data for a correlational/regression analysis. The methodology should establish *a priori* the level of findings the researcher will consider to be an important level and hence actionable in the classroom.

To make the determination of effectiveness, the candidate will utilize a pre-post research design or at least provide a baseline level of performance. The candidate will use the same or a very similar assessment to determine if the strategy was effective (this is the post-test).

Chapter 4

The candidate will then implement the devised teaching intervention and report the findings from the resulting data and analysis thereof.

Chapter 5

Finally, the candidate will reflect on the conclusions from the data analysis to determine the answer to the research question/hypothesis, the utility of the strategy, and appropriate modifications that could be employed to inform future research.

Components of the Applied Research Paper
C1 Introduction to the Issue
C2 Review of Literature for the Proposed Strategy
C3 Description of the Assessment to be used for Pre-Post Testing
C4 Description of the Results
C5 Reflection on the Overall Process

Comment
Action research requires the same conceptual rigor as the most formal educational research but does not require the same material logistics. Hence, the same logic model is used in action research, e.g., the five chapter format, which is required of the most sophisticated research but distinguishes itself from such sophisticated research by researching small populations. As such, action research uses parameters rather than statistics given it does not sample populations and calculate indicators of sampling error (p-values). Consequently, findings from action research are not generalizable beyond the actual participants.

The point of most quantitative research is to identify how one variable is **related** to another, i.e. how independent and dependent variables are related. Like all levels of educational research, action research cannot establish a casual relationship among variables. While it would be very useful if a researcher could logically conclude the presence of causal relationships, there is no valid educational research design in existence to allow for such a conclusion. So we cannot validly

conclude after the analysis regardless of the findings that one variable "caused," "had an impact," "had an effect," "determines," "accounts for," or "had an influence," etc. on another variable. So if we cannot say one variable causes the other, how are we to characterize the relationship that does exist between independent and dependent variables? There are essentially two ways for the educational researcher to characterize quantitative data, that is, (a) to compare the means and/or (b) to establish the degree to which the research variables are associated. The method by which variables are analyzed is simply dependent upon how the research question is framed.

In a broader scope of research, samples are randomly taken from populations followed by the computation of sample means wherein the mean differences are then computed and used to reflect on the research question and hypothesis. They are usually computed using t-tests or a variety of ANOVAs. However, in action research, these tests are not necessary because action research does not sample populations. Instead, parameters rather than statistics are used and means are compared using ordinary arithmetic procedures. The mean differences are then easily calculated and conclusions drawn from those findings.

If finding the association among variables is important, then the researcher has a variety of correlations available, though the most common is to use a Pearson r. The closer r is to 1 or -1, the stronger the relationship or association. Since interpretation of the Pearson r is quite subjective, a much better sense of the strength of the association can be calculated simply by squaring r and expressing as a percentage. When r is squared, the resulting value is known as the "coefficient of predictability" (previously called the "coefficient of determination;" however, the value of r^2 tells nothing about the degree to which one variable determines (causes) the other but it does reveal the percent of **predictability** the predictor (independent) variable has on the criterion (dependent) variable. Obviously the higher the correlation (r), the stronger the predictability (r^2) will be. When a correlation is also used as a means of prediction, it is then called a regression analysis instead of a correlational analysis. In order to actually use the regression (or predictive) analysis, a regression equation must be calculated. This can all be done on Excel.
For example, suppose a correlational study was done in a high school having 200 high school students to see what association, if any, exists between the number of days absent and GPA. Using all 200 students' GPAs and number of absences respectively, a Pearson r is conducted and it is found that r = -.94. Given -1 is the lower bound for a negative correlation, -.94 is a very strong thought negative correlation. In this case, this is good because a negative correlation means as one variable goes up, the other goes down. So as the number of days absent goes up, the GPA can be predicted to go down or in the contrary, as the number of absences goes down, the GPA can be predicted to go up.

So what can you do with this information? You can tell the parent or student the contents of the sentence immediately above, but you are very limited in what the r = -.94 specifically means. So you can easily calculate the coefficient of predictability and find r^2 = 88%. Now you have something more specific, you can say that the number of days a student misses school provides 88% of the predictability of that student's GPA. That does not mean the days absent cause the GPA, but it does say quite nicely that 88% of the predictability of GPA can be predicted just by knowing how many days the student missed school.

However, there is an even more useful piece of information available from doing the regression analysis (r^2) and that is the predictor equation. Suppose Excel calculated the predictor equation and found that a student's grade point average may be predicted using this equation: GPA = -.15 x

(number of days absent) + 3.92. This is a simple linear equation having a slope of -.15 and a y intercept of 3.92.

Since the regression produced 88% of the predictability, this equation won't be perfectly accurate, but it will make a very strong point. For example, if the student misses no days, the equation predicts a 3.92 GPA (or the y intercept). The equation shows that for every day a student misses, the predicted GPA goes down by .15. So the predicted GPA for a student who misses 10 days would be 2.42 but we cannot say if a student misses a day, it will *cause* his/her GPA to drop .15. We can *predict* it with pretty good certainty given the 88% figure but we cannot conclude a causal relationship.

So each of these methods, i.e., comparisons of means, expressing a correlational coefficient, such as r, using the coefficient of predictability (r^2), and finally, the predictor equation are all ways to answer a research question. Whether you use mean differences, degree of association, degree of predictability, the predictor equation, or a mixture thereof depends upon how you want to ask your research question and how you want to express your findings. ETS, for example, is concerned primarily with predictive validity. That is, the purpose of the SAT (or all standardized college entrance exams) scores is to serve as the value they use for the predictor variable in their predictor equation that ETS generates to predict college GPA. That is, your SAT, GRE, or whatever scores serve as an indicator of the predictability of your higher education GPA. The correlation for SAT scores and higher education GPAs is usually around r = .2, which gives an r^2 of 4%. That is, 4% of the predictability of your higher education GPA can be predicted by your SAT scores.
So in short, these techniques should always be kept in mind and used when possible in order to squeeze out the last bit of information found in the research. BTW, ETS never reports r^2 as r (.20) looks a lot better than r^2 (4%)!