

SCED 678 Science Education Seminar
Summer 2015
eMeet: Tuesday 9:00 – 11:30 a.m.
2 credits

Instructor: Wendy Adams

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Office Hours: By Appointment

Course Website: www.unco.edu/nhs/physics/faculty/adams/SCED678home.html

Course Description: Investigate current science education research, report on topics of interest in recent literature, discuss individual research problems.

Course Objectives:

This course has two main goals. The first is to provide students with the beginnings of the foundation of science education research related to how students learn and effective classroom practices. Secondly, students will investigate areas of interest, pick a focus for their Action Research and complete the first two chapters of their Action Research project; the Introduction and Literature Review.

To address these goals, the course will be divided into three units: 1. Acquisition of literature research skills while building a basic theoretical foundation of science education research; 2. Independent exploration of the literature; and 3. Development of a research problem and corresponding Literature Review

More specifically, after this course, students will be able to:

Unit 1:

- Locate research literature using UNC libraries or Google Scholar.
- Describe, apply and evaluate research results using the theoretical foundations of effective teaching practices including but not limited to, growth mindset, cognitive load, effortful practice and memory/building neurological connections.
- Write an annotated bibliography

Unit 2:

- Search for and locate relevant literature on a particular research topic

Unit 3:

- Summarize and synthesize multiple pieces of research material on a particular topic
- Articulate their theoretical framework relevant to their action research project
- Defend how their Action Research Study will contribute to the literature.

Textbook:

There are no required textbooks for this course. All materials will be electronic and available freely online or online through the UNC library.

Course Website: www.unco.edu/nhs/physics/faculty/adams/SCED678home.html

All assignments will be listed on this page. You are responsible for checking this page daily since not all assignments will be announced when we meet. Although this is an on-line course, it is not an independent study. Please check the calendar on the course website for timelines. Everyone will move forward at the same pace.

Course Content:

The content of this course includes the following:

1. Introduction to science education related research literature
2. Compilation of an annotated bibliography
3. Searching for literature on a topic of interest
4. Determining an Action Research project that will contribute to the literature
5. Literature Review on Action Research Area of Focus

Grading:

The course grade will be based on the activities described below. In most cases, a scoring rubric will be provided for any assessment to guide your completion of assignments. This on-line course requires student participation in course activities, discussions, and on-line experiences. Failure to participate in discussions or to complete assignments impacts the overall grade earned in this course.

Method of Assessment	Approximate weight
Participation in discussion	10%
Posts/Comments	20%
Research Topic/Chapter I	15%
Annotated Bibliography	25%
Literature Review/Chapter II	30%

Grading Scale: A=90-100% B=80-89% C=70-79% D=60-69% F<60%

Late Assignments:

All assignments must be completed and submitted by the deadline to receive full credit. Assignments are due by the end of the day, 11:59 p.m., on the due date unless otherwise specified. In select instances, the deadline is posted as 8:00 a.m.

Annotated Bibliography:

During this course you will produce an annotated bibliography of all the research material that you read for this course. Immediately after you read each article or book chapter, you will create a new entry in your annotated bibliography. At the end of this course, everyone will receive a copy of the SCED 678 complete annotated bibliography containing ~100 entries compiled from each student's personal annotated bibliography. Detail on this assignment and relevant dates can be found [here](#).

Participation in Discussion:

The purpose of the weekly synchronous meetings, “eMeets”, is to have a dialog about the week’s reading assignments. Research material is deep, not always well written and takes time to unpack. Each member of this course will come away from each reading with a slightly different set of key points. Discussions are needed to delve into the topic and understand the implications of each study and how it fits within our theoretical framework. Small groups will be formed to allow every student in each group to contribute to the conversations.

Posts/Comments:

Each week the members of this course will be asked to post a response to that week’s reading. Then other members of the class will be asked to read their classmates posts and to respond to those. These posts and comments to posts will serve as an asynchronous meeting and provide the starting point for our weekly synchronous conversations.

Research Topic/ Chapter I:

During this course you will identify and clarify your Action Research Topic. While doing this you will be asked to write the first chapter of the Action Research Project. Chapter I is the Introduction which should include the purpose, context and area of focus for the project. Detail on this assignment and relevant dates can be found [here](#).

Literature Review/ Chapter II:

This course will also guide you in reviewing relevant literature for your Action Research. You are expected to review between 10 – 20 articles and book chapters related to your project. The review of literature is intended to provide a scholarly basis for the research questions of the Action Research Project, including the theoretical foundation as well as a critical analysis and synthesis of a published body of research material. Detail on this assignment and relevant dates can be found [here](#).

Student Expectations:

- The course time commitment is expected to be an average of 10 - 12 hours per week including synchronous meeting times.

Students are expected to

- thoroughly read and analyze all assigned research material.
- participate in synchronous discussions.
- turn in assignments on announced due dates.
- actively participate in group functions and fulfill other group responsibilities.
- be respectful and thoughtful of others.
- reference all work. See UNC’s policy on [Plagiarism](#)
- follow UNC’s Honor Code and Student Code of Conduct

<http://www.unco.edu/dos/Conduct/codeofconduct.html>

Minimum Technology Requirements

A microphone and camera are required to participate in synchronous discussions. You must have an internet browser, Microsoft Office (or equivalent) and software that can display Adobe PDF format. (free [Adobe® Reader® 7.0.](#)) While this course can be completed via 56K dialup modem, higher-speed access is recommended.

Technical skills required

This course requires some technical knowledge to facilitate its online delivery. You should be able to download and upload documents and spreadsheets from Blackboard, create documents in MS Word or other word-processing software, navigate the internet and send and receive e-mail.

Using Blackboard

This course will use Blackboard, a web-based course supplement, to deliver much of the course material and to manage on-line quizzes and discussion. Quizzes will be posted at least two days in advance of their due date. *It is advised that you don't wait until the last minute to complete quizzes, since technical difficulties may arise to prevent you from completing quizzes on time.*

Blackboard access: <http://bb.unco.edu>.

Blackboard Login Instructions

1. Login with the first eight characters of your UNC-generated email address.
 - a. Example: ADAM1234
2. Your password will be your student number. Look up your [Bear Number](#)
3. If you have problems accessing Blackboard, contact User Support at 970 351-4357.

Disability Support Services

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the [Disability Support Services](#) (970) 351-2289 as soon as possible to better ensure that accommodations are implemented in a timely fashion.

Library Services for Distance Education and Off-Campus Students: Obtaining Materials from UNC Libraries

Off-campus students residing within 50 miles of the UNC campus are required to come to the library and borrow materials in person. Students residing more than 50 miles from campus may request that materials be delivered to them. All requests must include complete citations. We will supply materials from the UNC Libraries, as well as materials from other libraries obtained via Interlibrary Loan. Articles will be delivered via email. Books will be mailed first class. Delivery time by U.S. postal service is approximately 1 week. It is the responsibility of the student to return books by the date due. UNC does not pay return postage on books. For information on document delivery, call (970) 351-1446.

Requests for materials may be made through the following methods:

Online: <http://www.unco.edu/library/forms/distancerequest.htm>

By email: library.ocp@unco.edu

By fax: (970) 351-2540

Course Withdrawal Information

In accordance with University and Colorado Department of Higher Education policy, if you drop this class after the course starts you will be assessed a drop fee. The drop fee is pro-rated up to the half-way point in the class. You are legally responsible for payment of full tuition once 50% of this course has been concluded. In order to be eligible to receive any refund of tuition, you must contact the Office of Extended Studies (1-800-232-1749) to formally withdraw from your class. Your refund, if applicable, will be based on the date of contact with our office. Withdrawals received via telephone during non-business hours will be processed and dated on the next working day. Failure to notify us will result in UNC tuition being owed even though you do not attend or complete the coursework.

Equity and Inclusion Statement

The University of Northern Colorado embraces the diversity of students, faculty, and staff, honors the inherent dignity of each individual, and welcomes their unique perspectives, behaviors, and worldviews. In this course, people of all races, religions, national origins, sexual orientations, ethnicities, genders and gender identities, cognitive, physical, and behavioral abilities, socioeconomic backgrounds, regions, immigrant statuses, military or veteran statuses, size and/or shapes are strongly encouraged to share their rich array of perspectives and experiences. Course content and campus discussions will heighten your awareness to each other's individual and intersecting identities.

The Office of Student Rights & Responsibilities (located in Decker Hall) serves as resource to anyone seeking support or with questions about equity and inclusion at the University of Northern Colorado (UNC). If you are a witness to or experience acts of bias at UNC and would like to learn more about bias response or report a bias incident, please visit Bias Response at <http://www.unco.edu/biasresponse/>.

Everything on this syllabus is subject to revision throughout the term; however, adequate notice will be given.