

# George Mason University College of Education and Human Development Secondary Education Program 3 Credits Spring 2018

## EDUC 675.002: RESEARCH IN SECONDARY EDUCATION

Meeting Day/time: Mondays 4:30 p.m.-7:10 p.m. Class Location: Peterson 2408, Fairfax Campus

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Prerequisite(s): EDCI 790 and licensure; enforced by registration system

**Co-requisite:** M.Ed. Program Exit Requirement: *Teacher Research Impact Project* **Note:** All students enrolled in this course must be working daily in or have access to a classroom setting classroom setting, since the major course assignment involves a classroom-based teacher research project. *If you do not have your own classroom, you will need to let the instructor know before or during the first class. Alternative arrangements used successfully in the past will be offered.* \*See J. Recko exemplar under spring 2015 exemplars in Bb for a study completed by a student without a classroom.

# UNIVERSITY COURSE CATALOG DESCRIPTION

Links evidence of student learning to make informed instructional decisions. Engages students in critiquing various research paradigms, reviewing literature, and systematically collecting and interpreting evidence to improve practice. Facilitates completion of the M.Ed. exit requirement.

# **COURSE OVERVIEW**

The major purpose of this course is for you to learn how to design and conduct a teacher research project situated in a classroom with the goal of improving your teaching and your students' *Samaras.EDUC675.Sp18* 1

learning. The course is designed to promote a professional teaching and learning community with peer review critical friend support. Throughout the course, you are completing a research component of your study in an informal manner that you will later insert into your final polished paper. Your ultimate success with the final project requires your ongoing commitment to each step in the process and collaboration with peers for reciprocal review. The course provides an opportunity for your personal and ongoing professional development as a teacher; to consider who are you as a teacher and who you are becoming— your teacher professional identity). As a pedagogical self-study of teaching scholar, I will work to model the process I ask of you and share my ongoing self-study of teacher research and ideas for innovative ways to collect data. I work to live and model what I profess as a life-long learner through my ongoing professional development and collaboration with my self-study of teaching colleagues. Teaching is a beautiful professional craft filled with complexities and challenges, and also with much creativty and joy.

## **COURSE DELIVERY METHOD**

The course will be taught through a variety of activities to support the development of your teacher research projects involving: whole class and small group discussions, group, pair and group work, online work, and through dialogue and reflections of/in practice. Individual and group consultations are purposefully built into and integrated throughout the course design to support your ongoing efforts from launching your project to then enacting and writing about your teacher research.

## LEARNER OUTCOMES

This course is designed to enable students to:

- 1. demonstrate an understanding of the process and components embedded in teacher research by conducting and assessing a chosen teacher researcher inquiry situated in their classroom and with attention to its impact on students' learning;
- 2. design a research proposal which makes explicit links between theory and practice;
- 3. examine ethical considerations when conducting teacher research;
- 4. conduct teacher research using the self-study action research method which includes: research question(s), research rationale and proposal; review of related literature, methods, data collection/analysis, findings, discussion and reflection of impact on students, teacher, and education field; and abstract;
- 5. participate in "critical collaborative inquiries" (Samaras, 2011) to gain multiple and perspectives and collaborative experiences and in interpreting research and for validation and peer review of research;
- 6. demonstrate integration of national and state standards for content and pedagogy as related to the research question by reflecting on their own teaching practice and its impact on students' learning respective to students' discipline;
- 7. demonstrate skills and applications of visual and digital literacies in a collaborative teacher research project and teacher research impact collaborative presentation.

## **RELATIONSHIP TO PROFESSIONAL STANDARDS**

Students will demonstrate an understanding and application of subject area standards aligned with the *National Content Standards* and identified by their Specialized Professional Association (SPA); and an understanding and application of teaching and learning standards as outlined by *INTASC*. National Content Standards for respective discipline: NCSS, NCTE, NCTM, NSTA

National Council for the Social Studies <u>http://www.ncss.org/</u>

National Council of Teachers of English http://www.ncte.org/

National Council of Teachers of Mathematics http://www.nctm.org/

National Science Teachers Association http://www.nsta.org/ http://books.nap.edu/readingroom/books/nses/

INTASC: Interstate New Teacher Assistance and Support Consortium http://www.ccsso.org/content/pdfs/corestrd.pdf

Virginia State Standards

- Virginia Department of Education <u>http://www.pen.k12.va.us/</u>
- State of Virginia, SOL Resources http://www.pen.k12.va.us/VDOE/Instruction/sol.html •
- State of Virginia Standards of Learning Test Information • http://www.pen.k12.va.us/VDOE/src/SOLassessments.shtml

Partnership for 21st Century Skills and the professional guidelines, National Board for Teaching Standards: http://boardcertifiedteachers.org/certificate-areas

# **REQUIRED TEXT**

Samaras, A. P. (2011). Self-study teacher research: Improving your practice through collaborative inquiry. Thousand Oaks, CA: Sage. Online resources also available at: http://www.sagepub.com/samaras/

# **REQUIRED READINGS**

- Racines, D. (September, 2017). Using Self-Study to Advance Research in TESOL Teacher Education: Examining my English Learner Identity to Improve My Effectiveness as an Instructional Coach with Teachers of English Learners. TESOL Teacher Education Interest Section Newsletter.
- Samaras, A. P., & Roberts, L. (2011). Flying solo: Teachers take charge of their learning through self-study research. Learning Forward, Journal of Staff Development, 32(5), 42-45. [located on Bb under req. readings]

*Required Readings: Teacher Research Exemplars from GMU Alumni:* 

Bristol, C. J. (2016). A deeper and more meaningful understanding of biology through journal entries. Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Davis, K. (2016). Using stations activities as a differentiation tool. Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Mamatova, M. (2016). Using technology as an organizational tool. Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Mautz, M. (2014). Promoting motivation in the classroom through goal-setting. Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Mayden, K. H. (2014). Making classroom conversation count: Improving participation in discussion to enhance learning. Paper submitted to the Secondary Education Program, Graduate Samaras.EDUC675.Sp18 3

School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Payden, J. (2014). Using journal writing to develop students' mathematical communication skills. Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Saxena, B. (2014). Using discourse strategies to develop critical and creative thinking in science. Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Schaperjahn, G. D. (2016). *Teacher and student trust through restorative and community circles*. Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Sprague, L. (2014). *Management & madness: Discovering the balance between effective management and classroom morale.* Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Walsh, L. (2014). *Differentiation in an honors mathematics classroom: How to help each student individually reach their potential.* Paper submitted to the Secondary Education Program, Graduate School of Education, George Mason University, Virginia, in partial fulfillment of the requirements for the degree of master of education.

Additional exemplars will be showcased during class to highlight specific research components.

# **COURSE PERFORMANCE EVALUATION**

# Attendance, Participation, and Peer Review (15 pts)

Attendance and participation at all classes, for the entire class period is a course expectation and absence will affect your grade. Successful completion of this course requires attendance at all Face-to-Face classes and active participation in the online critical friend work. Being on time is also essential and lateness will affect your grade. Class participation is a factor in grading; instructors may use absences, tardiness, or early departures as de facto evidence of non-participation and as a result lower the grade. It is your responsibility to notify the instructor ahead of time if you will arrive late or if you must miss class. You are responsible in working with your Critical Friend Team (CFT) for missed material.

# Readings

You are expected to complete all readings and come prepared to contribute to critical reflections and bring questions as they arise and especially as related to your research project. You are expected to actively participate in class and in online discussions with openness, consideration, and effort to "hear for" and "listen to" others as you also seek to be understood.

# **Critical Collaborative Inquires as Participation and Peer Review**

Your in-class activities involve sharing weekly updates, brainstorming ideas as a teacher about the classroom dilemma you are researching, exchanging ideas for strategies and lessons, and sharing how you are integrating standards in meaningful ways. As part of your course participation, you will have the opportunity to collaborate with critical friends as you develop your teacher research project. Critical Friend Inquiries (CFI, Samaras, 2011) are designed for peer review with support and to provide alternative perspectives on interpretation to increase the validity of your research.

It is your responsibility to respond to at least one critical friend team member for each assignment. Please assure that each team member receives a peer review. This is part of your participation grade. You are also required to provide feedback on a peer draft research report using tracking and comment bars.

Place your feedback in your peer's discussion thread for each assignment.

Critical friends provide support as well as a feedback loop to improve your practice. It is *critical* to have friends in research but critical friends are *not critical* in their approach with each other (Samaras, 2011). Establish ground rules with "critical friends" and visit them often. Demonstrate positive professional dispositions. Professionals are responsible, ethical, and accountable.

Make it a habit to write regularly and save your work in multiple places.

## Assignments

Each assignment helps you build your final paper so missing one, pushes you immediately behind. Since this is a professional development course (post licensure), high quality work (i.e., "A" work) is expected on all assignments and in class participation.

All written assignments are to be submitted as a file and submitted electronically under the respective Class Discussion Thread on Bb before the day and that it notes POST and before the class begins at 4:30pm. Late papers and projects will not be accepted without penalty, excepting extraordinary circumstances. I am available to clarify and assist on projects and assignments, yet with your contacting me within a reasonable timeframe. I reserve the right to add, alter, or omit any assignment as necessary during the course of the semester.

Title each assignment with your last name and the name of the project/assignment, e.g., Smith.ResProp.03.11.17. Use Times Roman 12 pt. font, double-spaced for all assignments. For full consideration, all assignments are due and posted *electronically* on Bb prior to the beginning of class on the day and time they are due, unless otherwise announced. It is your responsibility to check the Assignment/Review Discussion Thread each week where I post comments to you. I will email your grade to you individually.

\*Please note: You will also find descriptions of assignments located in our text with examples from GMU secondary education alumni but the text and exemplars are resources. Use the templates and guidelines on Bb and not in the text unless requested. That is, the purpose of the readings are to support your work but I have modified the assignments over time.

Each Assignment and Description is posted on Bb.

# **Possible Points**

Attendance, Participation, and Peer Review = 15 points Assignments of Research Project Draft Components= total of 25 points Assignment 1: Education-related Life History (5pts) Assignment 2: Research Question & Rationale (5pts) Assignment 3: Draft Literature Review (5pts) Assignment 4: Description of Method (5pts) Assignment 5: Peer Review of Draft 1 (5pts) includes Analysis and Preliminary Results Assignment 6: Instructor Review of Draft 2 includes Discussion/Self-Study Reflection/Action Plan (formative) Assignment 7: Collaborative Teacher Research Impact Presentation (Master's Exit Req) Assignment 8: Teacher Research Project (include presentation) = 60 points = PBA

Total = 100 points

# **Descriptions of Assignments:**

# 1. Education-related Life History Method

Use prompts on Critical Friend inquiry 5.1 in text on pp. 95-98. Helps you explore how personal learning experiences and culture shape your inquiry, practice, and your students' learning.

# 2. Research Question and Rationale

Use pp. 114-116 in text

*It must be love!* For your research paper, you should choose a research question that really matters to you. It should be something you're curious about and willing to spend time researching and learning about. To quote one of my former students, "If you aren't eager to spend several days curled up reading about your topic, then it's not love, and you need to ditch it and find another topic" (Roberts, GMU alumna, 2009). Begin to articulate why this question for you and why now. What is the outgrowth of this puzzlement? Write a research proposal. You may also elect to add a visual representation to your research proposal. The idea is for the visual to help you figure out your "thesis" and not to enter an art show. Approach this assignment from where you are and honor its incompleteness as part of the research process. Ask yourself does the proposal give you a solid framework to launch your project.

Consider how your research question might connect with your experience of school, how school felt, and how you best learned and when you felt most valued, connected, and at peace – or least valued, most disconnected, and most at war with yourself and with school. Where does this question come from for you? How might your students view the issue from their perspective and experiences?

# 3. Literature Review

See pp. 127-134 in text.

Post a draft of your literature review on MyMason and begin to ask yourself:

- What does the literature review add to your understanding of your research topic?
- What common topics and themes have you found in the literature?
- What ideas for pedagogical strategies can you adapt from the literature?

Use the topics to design your conceptual framework or mapping of the "big ideas" and connections you find in the literature to your study Format is your choice, e.g. annotated bibliography, narrative to insert directly into final report

# 4. Description of the Method: Data Chart & Pedagogies

See assignment description on Bb. Also see required reading exemplars: Mautz p.13; Payden pp. 10-11; Walsh p. 17

# 5. Peer Review of Draft 1

Post your draft for peer review. Critical friends use actual evaluation rubric to provide peer review along with tracking and comments on the peer draft.

# 6. Instructor Review of Draft 2 (formative assessment)

# 7. Collaborative Teacher Research Impact Presentation

The M.Ed. Program exit requirement is a teacher research impact project and presentation which is completed during your capstone course, EDUC 675. *The Teacher Research Impact Project and Presentation is an ungraded requirement for* EDUC 675, however, students are required to successfully complete a Teacher Research Impact Presentation in order to exit and graduate from the Secondary Education program. Your grade for EDUC 675 will be posted only upon successful completion of the Teacher Research Impact Presentation.

Working in your theme-based critical friend team organized by broad areas of research interests, you will identify one authentic, alternative, contemporary media-based method through which you will share the impact of your teacher research. While you will make brief presentations of your ongoing individual research findings in class, the mission of this assignment is for your collaborative to design and enact a presentation using visually rich digital tools which brings together your papers and its impact of/for student learning and your professional development as a teacher (e.g., as differentiation, management, classroom environments, student engagement.) You might highlight the very importance of teacher research or summarize the findings of your group members' efforts around a common theme or topic. Examples will be offered.

# 8. Teacher Research Project

For your final report, use the Research Project Headings template located on Bb and TK20 Assessment Rubric below with attention to each detail. Look at the headings posted at the beginning of the semester so you can see where you are headed. There are spaces for your final report in the template.

Please use this checklist for common errors before submitting your final research paper:

- 1. All teacher research reports must adhere to APA format. Your project should be useful to you and your students.
- 2. Use Times Roman 12 pt. font, double-spaced throughout paper including between paragraphs.
- 3. Do not use right justification for formatting.
- 4. Do not use any identifying information of students, staff, school, or school system.
- 5. Cite all works properly. Need at least 10 references.
- 6. Spell out acronyms when you note them the first time. e.g., English Language Learners (ELL).
- 7. Spell out all contractions, e.g., don't = do not

- 8. Include your data chart within the text of your paper.
- 9. Change everything to past tense, e.g., "I collected" instead of "I will collect."
- 10. Include an appendix electronically only.
- 11. Please print final copy single sided.
- 12. Check that your abstract is written in third person and includes an implications sentence.
- 13. Just clip report at the top; no report binders or plastic sleeves are necessary.

# ASSESSMENT AND GRADING

## **Participation and Peer Review Rubric**

Category	Exemplary	Accomplished	Developing	Undeveloped
	15 pts.	14pts	13pts	Below 13 pts
Assignments are	Successfully	Completes all	Does not	Few
central to the	completes all	assignments.	complete some	assignments
development of	assignments.	Participates in	assignments.	completed.
your project.	Outstanding	discussions and	Does not	Few
Attendance and	and consistent	activities on a	contribute to	contributions
participation are	participation in	regular basis;	discussions or	to class
critical	discussions	questions and	activities very	discussions.
components of this	and class	comments	often, but	Little
course. It gives	activities.	reveal thought	generally	evidence of
you the	Promotes	and reflection	reveals some	participation
opportunity to	conversation	and contribution	thought and	and
learn from and	focused on the	from assigned	reflection and	contribution.
contribute to	topic.	readings.	some	Shows little
building a positive	Comments	Frequently	contribution	concern for
classroom	demonstrate a	involves peers	from assigned	peers'
experience and	high level of	in discussion.	readings.	learning or
learning	understanding	Conducts peer	Follows rather	input or peer
community.	from assigned	review; Shares	than leads group	review.
Participants	readings.	leadership roles	activities.	Misses many
contribute to each	Listens	in group work.	Solicits some	classes and
other's learning by	actively to		peer discussion	is late often.
actively listening,	peers.		and peer review.	Does not
exchanging ideas,	Embraces peer		Misses classes.	share
sharing learning	review;		Is late for class.	leadership
from reading and	Prompts peer		Somewhat	roles in
websites, peer	feedback and		shares	group work.
view, and	input.		leadership roles	
supporting each	Purposely		in group work.	
other's efforts on	shares			
Discussion Thread	leadership in			
	group work.			

5 pt. Assignments	Rubric Description for Assignments

A+	Presents an exemplary narrative in the assignment to build her/his self-study
Exemplary	action research project with thoughtful and relevant detail. Demonstrates a
5+ points	very high level of understanding and application from assigned readings.
1	Submission reflects outstanding participation in f-t-f and online discussions
	and class activities and active listening and serious feedback with peers.
	Submitted on time. Provides exemplary peer response to assignment where
	relevant.
A	Provides a very adequate narrative in the assignment to build her/his self-study
Excellent	action research project with thoughtful and relevant detail which demonstrates
5-4.7 points	a high level of understanding and application from assigned readings.
	Submission reflects excellent participation in f-t-f and online discussions and
	class activities and active listening and a high level feedback with peers.
	Submitted on time. Provides very adequate peer response where relevant.
A-	Provides an adequate narrative in the assignment to build her/his self-study
Approaching	action research project with thoughtful and relevant detail which demonstrates
Excellence	a good level of understanding and application from assigned readings.
4.65-4.5 points	Submission reflects good participation in f-t-f and online discussions and class
	activities and active listening and serious feedback with peers. Submitted on
	time. Provides adequate peer response to assignment where relevant.
B+	Provides a fair narrative in the assignment to build her/his self-study action
Developing	research project with thoughtful and relevant detail which demonstrates an
Less than 4.5 points	average level of understanding and application from assigned readings.
	Submission reflects average level of participation in f-t-f and online
	discussions and class activities and active listening and serious feedback with
	peers. Needs more work. Submitted late. Does not provide adequate peer
	response to assignment where relevant.
<u>.</u>	

Grade	Standards	Grading	Grade Points	Graduate Courses
А	Meets Standard	93 - 100	4.00	Satisfactory /
Α	Meets Standard	95 - 100	4.00	Passing
A-	Meets Standard	90 - 92.9	3.67	Satisfactory /
A-	Meets Standard	90 - 92.9	5.07	Passing
B+	Approaches	88 - 89.9	3.33	Satisfactory /
$\mathbf{D}^+$	Standard	ndard 88 - 89.9 5.55	5.55	Passing
D	B Approaches 83–87.9	<u> 92 97 0</u>	3.00	Satisfactory /
D		5.00	Passing	
B-	Approaches	80 - 82.9	2.67	B- is not a passing
D-	Standard		80 – 82.9 2.0	2.07

## **Tk20 Performance-Based Assessment Submission Requirement**

Every student registered for any Secondary Education course with a required Tk20 performancebased assessment(s) (designated as such in the syllabus) is required to submit this/these assessment(s), the Teacher Research Project and Impact Presentation, to Tk20 through 'Assessments' in Blackboard (regardless of whether a course is an elective, a one-time course or part of an undergraduate minor). Failure to submit the assessment to Tk20 (through Blackboard) will result in the course instructor reporting the course grade as Incomplete (IN). Unless this grade is changed upon completion of the required Tk20 submission, the IN will convert to an F nine weeks into the following semester. See Rubric below.

## **Professional Dispositions**

See <a href="https://cehd.gmu.edu/students/polices-procedures/">https://cehd.gmu.edu/students/polices-procedures/</a>

### **Emergency Procedures**

You are encouraged to sign up for emergency alerts by visiting the website <u>https://alert.gmu.edu</u>. There are emergency posters in each classroom explaining what to do in the event of crises. Crisis in Education App at: <u>https://itunes.apple.com/us/app/in-case-of-crisis-education/id476578079?mt=8</u>

# **CLASS SCHEDULE**

Date	Topics	Assignment Due Post on thread before class	<b>Readings</b> Chapters in Samaras text Readings in Bb folder
Week 1 January 22 <b>On Campus</b>	Introductions Becoming a Teacher Researcher Self-Study Action Research Method Critical Friend Teams Finding your Research Question (RQ)	During first week, please upload a picture of yourself on the discussion thread with your name. In-class activity: "I wonder activity" See Critical Friend Inquiry (CFI): 1.1 pp. 5-6	During first week, read Preface, Chapter 1 & Appendix A Overview Teacher Research exemplars on Bb
Week 2 January 29 <b>On Campus</b>	Refine your RQ Draft a Rationale and Argument	Post Two Artifacts: Teacher Vision and Teacher Research Knot (see assignments on Discussion Thread) Post Assignment 1: Post Education-related life history (use pp. 95-98 text)	Read Samaras & Roberts article Read Racines article Read Chapter 2 See Table 2.1 to draft your timeline Read <i>Mayden and Mautz</i> focus on <u>Intro/Rationale</u>
Week 3 February 5 <i>Online and</i> <i>Field Work</i>	Build your Literature Review using electronic databases (see p. 137)	<b>Post Assignment 2:</b> Post RQ & Rationale (p. 124 text)	Read Chapters 4 & 6 Read <i>Mamatova and Saxena,</i> focus on <u>Literature Review</u>
Week 4 February 12 <b>On Campus</b>	Data Collection Techniques Ethical Teacher Researcher	Bring in 2 articles from lit rev to share orally highlighting data collected	Read Chapters 7 & 8 Read <i>Davis and Mamatova with</i> focus on <u>Design &amp; Timeline</u>
Week 5 February 19 <i>Online and</i> <i>Field Work</i>	Collect Data in the Field	<b>Post Assignment 3:</b> Post Draft Literature Review	Read Chapter 9 Read Payden and Walsh, focus on Method

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Week 6 February 26 <b>On Campus</b>	Dialogue Circles of Pedagogical Strategies In-class Critical Friend work and consultations	<b>Post Assignment 4:</b> Post Description of Method: Include Data Chart with Pedagogical Strategies	Read Chapter 10 Read <i>Bristol and Sprague</i> focus on Analysis Also check out: Mautz p.13 Payden pp. 10-11 Walsh p. 17
Week 7 March 5 Online and Field Work	Writing Discussion, Critique, and Abstract	Work on Draft 1 Move data charts into narrative format	Read Chapters 11 & 12 Read <i>Bristol and Davis</i> focus on <u>Results</u>
Week 8 March 12	No Class Spring Break March 12-18		No readings this week
Week 9 March 19 <b>On Campus</b>	Peer Review of Draft In-class Critical Friend work and consultations	Work on Draft 1 for peer review with analysis and preliminary results	
Week 10 March 26 <b>On Campus</b>	Assessing Research Quality Validation and Writing Workshop	<b>Post Assignment 5:</b> Post Draft 1 for Peer Review with tracking & comments	Read <i>Walsh</i> , focus on Discussion & Critique & <u>Appendix</u> Write, write, and write!
Week 11 April 2 <i>Online and</i> <i>Field Work</i>	Refine and Polish Final Paper Skype or Face Time with Instructor	Work on Draft 2	No readings this week
Week 12 April 9 <i>Online and</i> <i>Field Work</i>	Meet with group to finalize Teacher Impact presentation In-class Critical Friend work and consultations	<b>Post Assignment 6:</b> Post Draft 2 for Instructor Review with results and discussion	No readings this week

Week 13 April 16 <i>Online and</i> <i>Field Work</i>	Writing as Process	Review instructor feedback and finalize paper Prepare 5 min presentation for next class	No readings this week
Week 14 April 23 <b>On Campus</b>	Present and Make Public	<b>Post Assignment 7:</b> Present Collaborative Teacher Impact Presentations Prepare 5 min presentation for next class	
Week 15 April 30 <b>On Campus</b>	<ul> <li>Individual Presentations In 5 minutes tell us:</li> <li>1. Ways your thinking changed from enacting your study</li> <li>2. Ways your practice has changed</li> <li>3. Most valuable insight/and productive mistake</li> <li>Next steps for self-study action research plan</li> </ul>	<ul> <li>Post Assignment 8: Final Teacher Research Project</li> <li>POST and BRING hard copy of your final paper</li> <li>Post Appendix online only.</li> <li>Post on TK20 <u>after</u> receiving professor final comments and grade.</li> </ul>	No readings this week

# **Core Values Commitment**

The College of Education and Human Development is committed to collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles: <u>http://cehd.gmu.edu/values/</u>.

# **GMU Policies and Resources for Students**

# Policies

• Students must adhere to the guidelines of the Mason Honor Code (see <a href="https://catalog.gmu.edu/policies/honor-code-system/">https://catalog.gmu.edu/policies/honor-code-system/</a> ).

- Students must follow the university policy for Responsible Use of Computing (see <a href="http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/">http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/</a>).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students **solely** through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor (see <a href="http://ods.gmu.edu/">http://ods.gmu.edu/</a>).
- Students must follow the university policy stating that all sound emitting devices shall be silenced during class unless otherwise authorized by the instructor.

# Campus Resources

- Support for submission of assignments to Tk20 should be directed to <u>tk20help@gmu.edu</u> or <u>https://cehd.gmu.edu/aero/tk20</u>. Questions or concerns regarding use of Blackboard should be directed to <u>http://coursessupport.gmu.edu/</u>.
- For information on student support resources on campus, see <u>https://ctfe.gmu.edu/teaching/student-support-resources-on-campus</u>

For additional information on the College of Education and Human Development, please visit our website <a href="https://cehd.gmu.edu/students/">https://cehd.gmu.edu/students/</a>.

# **TEACHER RESEARCH RESOURCES**

\*Please also visit the web links for online resources posted on Bb. Also see:

Ipad Apps for teachers by content <u>https://www.lynda.com/iPad-tutorials/Welcome/142960/150546-4.html</u>

*Office for Educators* <u>https://www.lynda.com/K-12-Education-training-tutorials/1797-0.html</u>

Brite Building Resilience in Teacher Education www.brite.edu.au

*Networks: An online journal for teacher research* <u>http://journals.library.wisc.edu/index.php/networks/index</u> Studying Teacher Education: A journal of self-study of teacher education practices: http://www.tandf.co.uk/journals/titles/17425964.asp

Self-Study of Teacher Education Practices Special Interest Group http://aera.net/sstepsig109

Biennual International Conference on the Self-Study of Teacher Education Practices [see "Conference History" and scroll down to "Conference Proceedings" where you will have access to pdf of papers from proceedings]

http://www.castleconference.com/conference-history.html

## **Survey and Questionnaire Development**

See: http://writing.colostate.edu/guides/guide.cfm?guideid=68

See: file titled "Questionnaire.Johnson" in Data Collection Tools Folder in Bb

Fowler, F. J. (2013). *Survey research methods*. Los Angeles, CA: Sage. <u>http://www.amazon.com/Survey-Research-Methods-Applied-Social/dp/1452259003</u>

**Data Collecting Tools:** Go to Google docs, then spreadsheets to create survey. Also Survey Monkey <u>http://www.surveymonkey.com/home.asp</u>

## **Data Analysis**

- Czaja, R., & Blair, J. (1996). *Designing surveys: A guide to decisions and procedures*. Thousand Oaks, CA: Pine Forge Press.
- Patton, M. Q. (2015). *Qualitative evaluation and research methods*. Los Angeles: Sage.
- Rovessi, C., & Carroll, D. J. (2002). *Statistics made simple for school leaders*. Lanham, MD: Scarecrow Press.
- Salkind, N. (2000). *Statistics for people who think they hate statistics*. Thousand Oaks, CA: Sage.

Saldaña, J. (2013). The coding manual for qualitative researchers. Thousand Oaks, CA: Sage.

# **Research and Writing**

- American Psychological Association (2009). *Publication Manual of the American Psychological Association*. American Psychological Association: Washington, DC.
- Booth, W. C., Colomb, G. G., & Williams, J. M. (1995). *The craft of research*. Chicago, IL: The University of Chicago.
- Dahl, K. K. (1992). *Teacher as writer: Entering the professional conversation*. Urbana, IL: NCTE.

# National Reports and Test Reporting Centers

The Nation's Report Card/National Assessment of Educational Progress <u>http://nces.ed.gov/nationsreportcard/</u> National Center for Educational Statistics <u>http://nces.ed.gov/help/sitemap.asp</u> TIMSS and PIRLS The International Math and Science Study and International Literacy Study <u>http://www.timss.org/</u>

Best Evidence/School Reform Reports/School Models. Johns Hopkins University <u>http://www.bestevidence.org/index.htm</u>

# **Teacher Research**

- Falk, B., & Blumenreich, M. (2005). *The power of questions: A guide to teacher and student research*. Portsmouth, NH: Heinemann.
- Goodnough, K. (2001). Teacher development through action research. *Action in teacher* education, 23 (1), 37-46. <u>Access through GMU, Library, e-journal.</u>
- Greely, K. (2000). *Why fly that way?: Living community and academic achievement*. NY: Teachers College.
- Hubbard, R. S., & Power, B. (1999). *Living the questions: A guide for teacher-researchers*. Portland, ME: Stenhouse.
- Kagan, D. M. (1993). Laura and Jim and what they taught me about the gap between educational theory and practice. NY. State University of New York Press.
- Lassonde, C. A., Galman, S., & Kosnik, C. (Eds.), (2009). *Self-study research methodologies for teacher educators*. Rotterdam, The Netherlands: Sense.
- Leedy, P. D., and Ormrod, J. E. (2001). *Practical research: Planning and design*. Upper Saddle River, NJ: Merrill.
- MacLean, M.S. & Mohr, M. (1999). *Teacher-researchers at work*. National Writing Project, Berkeley, CA.
- Meskin, T., Singh, L., & van der Walt, T. (2014). Putting the self in the hot seat: Enacting reflexivity through dramatic strategies. *Educational Research for Social Change (ERSC)*, 3(2), 5-20. (Bb)

Retrieved from <u>http://ersc.nmmu.ac.za/view\_edition.php?v=3&n=2#</u>

- Samaras, A. P., Adams-Legge, M., Breslin, D., Mittapalli, K., Magaha O'Looney, J., & Wilcox, D. R. (2007). Building a plane while flying it: Reflections of teaching and learning selfstudy. *Reflective Practice*, 8(4), 467-481.
- Samaras, A. P., & Sell, C. (2013). Please write: Using critical friend letters in teacher research. *Teacher Education Quarterly*, 40 (4), 93-109.
- Samaras, A. P., & Freese, A. R. (2006). *Self-study of teaching practices primer*. New York, NY: Peter Lang.
- Samaras, A. P., Freese, A. R., Kosnik, C., & Beck, C. (Eds.) (2008). *Learning communities in practice*. The Netherlands: Springer Press.
- Seidman, I. (1998). Interviewing as qualitative research: A guide for researchers in education and the social sciences. New York: Teachers College Press.
- Thomas, R. M. (2005). *Teachers doing research: An introductory guidebook*. Boston: Pearson/Allyn & Bacon.
- Wilcox, D. R., & Samaras, A. P. (2009). Examining our Career Switcher teachers' first year of teaching: Implications for alternative teacher education program design. *Teacher Education Quarterly*, 36 (4), 173-191.
- Zenkov, K. & Harmon, J. (2009). Picturing a writing process: Using photovoice to learn how to teach writing to urban youth. *Journal of Adolescent and Adult Literacy*, 52(7), 575-584.

#### EDUC 675, "Research in Secondary Education" Teacher Research Project Description and Assessment Rubric (60 points) (Includes suggested page lengths for each section)

#### Title Page and Abstract (2 points possible)

Your title can be as creative as you like—take researcher/artistic license with this. In 125 to 150 words, what was your study about? What was your major finding? An abstract writing strategy: take one sentence from each section of your final project (introduction, literature review, methodology, findings, and discussion) to craft the perfect abstract. Consider the following questions as you draft your title and abstract:

1) Have you provided a single, articulate, concise paragraph of no more than 150 words?

2) Does your abstract concisely describe your purpose and the context, method, key findings, and significance of your research?

	Suggested 2 pages: 1 page for title, 1 page for abstract					
Rubric Score	Does not meet expectations 1	Approaches expectations 2	Meets expectations 3	Exceeds expectations 4		
Grade Score	F Less than 1.4 points	C 1.4 – 1.5 points	B to B+ 1.6 – 1.7 points	A- to A 1.8 – 2 points		
Title and Abstract	Project is so brief, incomplete, or off-topic that any reasonably accurate assessment is impossible.	Project includes only general statements about the study. Information on methods and procedures to be followed is sketchy or missing. Falls short of 150 words or greatly exceeds the 150-word limit	Project includes an identifiable summary (max 150 words) that addresses the purpose of the study. Touches on methods and procedures to be followed, but is not sharply focused.	Project includes a concise (max 150 words) summary that reports factually on the purpose of the study and the methods and procedures to be followed.		

#### Introduction. Rationale. Area of Focus. and Research Questions (5 points possible)

Briefly describe the setting, including the community, school, students, and other relevant information. Demographic information in your introduction should focus on your school, while demographic information in your methodology should focus specifically on the students you worked with in your study. What is the purpose of your study? What problem or issue are you addressing? Describe why the concerns are important to you and what your research might help you learn as a result of its conduct. What is its background and significance? What is (are) your research question(s)? Do you have a hypothesis? If so, what is it and how did you formulate it? Be sure that your research questions steer you toward a descriptive response. Consider the following questions as you draft your introduction, rationale, area of focus, and research questions:

- 1) Have you explained the outgrowth of your study?
- 2) Have you offered perspectives that shaped this question for you?
- 3) Have you situated the study in terms of explaining the outgrowth of these questions in the context of your work? (e.g., your students, classroom, school, district)

- 4) Have you clearly and concisely explained why this research is important? Have you addressed the broader educational and social significance of this research?
- 5) Have you clearly and concisely stated the research problem?
- 6) Have you clearly and concisely stated your main research question and any sub-questions?

	Suggested 3-4 pages					
Rubric Score	Does not meet expectations 1	Approaches expectations 2	Meets expectations 3	Exceeds expectations 4		
Grade	F	С	B to B+	A- to A		
Score	Less than 3.5 points	3.5 – 3.9 points	4 – 4.4 points	4.5 – 5 points		
Introduction, Rationale, Area of Focus, and Research Questions	Project is so brief, incomplete, or off topic that any reasonably accurate assessment is impossible.	Project includes minimal information on the context/theoretical framework for the study. Does not offer a rationale for the study's execution, or does so only superficially. Explicitly states the research question and purpose of the study.	Project includes an adequate context/theoretical framework for the study and a defensible rationale for its execution, though one or both may be weakly developed. Explicitly states the research question and purpose of the study.	Project includes a sound context/theoretical framework for the study and a compelling rationale for its execution. Clearly and explicitly states the research question and purpose of the study.		

## Literature Review (8 points possible)

In order to properly address a research question you need to be familiar with previous investigations of your topic. You should conduct a literature review in which you cite and synthesize a minimum of ten (10) sources and discuss how they informed your design. Teacher research appeals to a broad range of research resources, including reports of teachers' experiences. Transitions should connect one annotated source with the next. At the end of the literature review, include a one-paragraph summary of the major discoveries in your review, connecting these to the focus of your study. References must be from refereed journals, books (generally not textbooks), curriculum resources, and scholarly compilations. NOTE: The literature review should emphasize synthesis and analysis (Bloom, 1956, 1984). *Use direct quotes very sparingly.* Craft your literature review as a story of the study of your topic. Consider the following questions as you draft your literature review:

- 1) Did you conduct an ongoing literature review which informed your research?
- 2) Is the review relevant and connected to your study?
- 3) Is the review adequate, coherent, and analytical?
- 4) Does the review include references from a variety of sources?

5) Is the review integrated into a conceptual framework with a mapping of the theories, literature, and phenomena that help to inform your study?

	Suggested 4-6 pages					
Rubric Score	Does not meet expectations 1	Approaches expectations 2	Meets expectations 3	Exceeds expectations 4		
Grade	F	Ċ	B to B+	A- to A		
Score	Less than 5.6 points	5.6 – 6.3 points	6.4 – 7.1 points	7.2 – 8 points		
Literature Review	Project is so brief, incomplete, or off-topic that any reasonably accurate assessment is impossible.	Project includes fewer than 8 peer-reviewed cites, published reports of empirical research. Does not explicitly highlight gaps in the literature to which the proposed study will respond. Summarizes cited works sequentially, rather than synthesizes and organizes them thematically. Relies heavily on direct quotes.	Project includes at least 8 peer-reviewed cites, published reports of empirical research. Highlights gaps in the literature to which the proposed study will respond. Organizes the literature by identifiable themes, although organization within themes may follow no clear or consistent pattern of presentation. Attempts to synthesize referenced sources. Uses few direct guotes.	Project includes at least 10 peer-reviewed cites, published reports of empirical research. Highlights gaps in the literature to which the proposed study will respond. Organizes the literature by clearly identifiable themes, proceeding from general to more specific within each theme. Effectively synthesizes referenced sources, using few, if any, direct quotes.		

## Description of the Method (15 points possible)

In this section describe how you implemented your research. Include a description of subjects (i.e., students, teachers, administrators), the context of the research, the strategies and materials (put sample material in an appendix), the number and total time of each research session, and a complete description of the methodologies. Repeat your question(s) in this section—remind us often what you are studying. Describe how you selected your subject sample—why did you choose these individuals and who are they, in terms of gender, ethnicity, age, grade level, language/culture, and educational achievement? Describe ALL of your methods, including what influenced the selection of your methodology and design, what measures you took to assure the validity of your study, and how you triangulated your data. Be sure to include a table and timeline of your methods—what you collected and when. Be sure to describe what type of data you collected—for example, did you do a needs assessment (e.g., via a test) to address student achievement, and then design and implement a new instructional strategy? Or did you observe a group of students to see how they behaved in a particular context, and then interview them to ascertain their reasons? Did you do a series of in-depth interviews with students or teachers? How do the data relate to your research question? How do they relate to your masters curriculum? Finally, describe how you planned to make sense of—analyze—your data in light of your research question(s). Provide rich descriptions of HOW you reviewed your data, the themes that became apparent in your reviews, and your ultimate findings. Consider the following questions as you draft your literature review:

1) Have you described your research context, including your community, school, and classroom contexts?

2) Have you included demographic information of participants?

3) Did you include your reflection of the problem (e.g., behaviors observations, possible causes)?

4) Have you explained the reasons for your pedagogies based on your observations of your classroom and the literature reviewed?

5) Have you described in detail what data you collected, how you collected it, and when you collected it, including data generated from your pedagogies and strategies?

6) Are your data from multiple sources?

7) Did you include a description of the pedagogical strategies you enacted?

8) Did you explain how you analyzed your data?

9) Have you included and explained the role of your peers in your data interpretations and validation?

10) Did you explore using visuals and technologies for analyzing and displaying your findings in a coherent manner?

	Suggested 4-	6 pages		
Rubric Score	Does not meet expectations 1	Approaches expectations 2	Meets expectations 3	Exceeds expectations 4
Grade Score	F Less than 10.5 points	C 10.5 – 11.9 points	B to B+ 12 – 13.4 points	A- to A 13.5 – 15 points
Description of the Method	Project is so brief, incomplete, or off-topic that any reasonably accurate assessment is impossible.	Project includes explanation of the study design, procedures followed, sampling methods, and analytical tools (including any statistical tests), given the stated purpose of the study; explanations, however, are not fully developed. Mentions ethical issues raised by the study but addresses them only superficially.	Project includes explanation of the study design, procedures followed, sampling methods, and analytical tools (including any statistical tests), given the stated purpose of the study. Discusses ethical issues raised by the study and how they were addressed.	Project includes explanation and justification of the appropriateness of the study design, procedures followed, sampling methods, data collection and analytical tools (including any statistical tests), given the stated purpose of the study. Discusses ethical issues raised by study and explains how they were addressed.

## Results and Findings (15 points possible)

In this section, indicate what you discovered or found as a result of your data gathering. Focus on results that are related to your research concern and answer your research questions or shed light on your research hypotheses. Introduce your findings before you begin to describe them, and remind us of your research question again. Organize this section in a way that makes sense for your data/findings—by student, by theme, by data source, etc. Use illustrative examples from your data to SHOW us your findings. Use tables to summarize and SHOW us what you've learned. Focus on what's truly interesting in your findings, even if you have limited data to support this. Feel free to use mini case studies to illustrate your findings, through the lens of a few students. Remember that the goal is to share what you learned about your teaching for yourself first; our goal is not NECESSARILY to extract findings that will

be generalizable across EVERY teaching setting. Interpret your data in as much detail as possible, describing whether or not—or how—your findings corroborated your expectations. Were there any surprises in your findings? Can you think of alternative explanations for your findings? Consider the following questions as you draft your results/findings:

- 1) Did you restate your research question and what was found through your research?
- 2) Are the findings thoroughly and adequately presented?
- 3) Is there convincing evidence to support your themes?
- 4) Is there connection and coherence among the separate themes?
- 5) Did you explain your findings to peers and colleagues to gain their perspectives on your interpretations?

Suggested 8-12 pages							
Rubric Score	Does not meet expectations 1	Approaches expectations 2	Meets expectations 3	Exceeds expectations 4			
Grade Score	F Less than 10.5 points	C 10.5-11.9 points	B to B+ 12-13.4 points	A- to A 13.5-15 points			
Results and Findings	Project is so brief, incomplete, or off-topic that any reasonably accurate assessment is impossible.	Project includes reporting and interpretation of narrative and numerical data with little apparent concern for accuracy and objectively. Analytical tools are inappropriate to the methodology. Provides, at best, tenuous links between study outcomes, hypotheses (if stated), and the original research question.	Project includes reporting and interpretation of narrative and numerical data accurately, objectively, and concisely. For the most part, analytical tools are appropriate to the methodology. Does not highlight explicit links between study outcomes, hypotheses (if stated), and the original research question; however, such links may logically be implied.	Project includes reporting and interpretation of narrative and numerical data accurately, objectively, and concisely using analytical tools appropriate to the methodology. Highlights explicit links between study outcomes, hypotheses (if stated), and the original research question.			

## Discussion. Reflection. Implications. Recommendations. Impact Presentation. and Action Plan (10 points possible)

In this section reflect on the findings of your data collection and discuss what they might mean to you as a teacher and teacher researcher. What did you learn from the study? How did it relate to your masters curriculum? How will it influence your teaching—that is, based on the results and themes that emerged from the study, what changes will you make in your teaching? How will you share these findings with others—specifically, how did you share your project and its results via your "Teacher Research Impact Presentation"? What are the implications for future research? Speculate on what it would mean if your data pointed in one direction versus another. Again, focus on what's truly interesting in your data/findings, even if you have limited information to support this. Make some bold recommendations for how we might serve students better. Be sure to describe what all of this information—the teacher research process, your data, your findings—mean to you as a professional and a person. Describe how you might share the findings of your

paper—with your principal, your grade level team, other teachers who are working with these students, use it in a workshop, claim it as an area of expertise on your resume, etc. Be sure to describe potential implications of your study and its findings for other teachers and for education policymakers. Consider the following questions as you draft your discussion, reflection, implications, recommendations, and action plan:

- 1) Have you adequately explained the implications of your study for your students' learning?
- 2) Have you adequately explained the implications of your study for your professional development?
- 3) Have you adequately explained the implications of your study for your teaching and reframing of your practice?
- 4) Have you adequately explained the implications of your study for the education field?
- 5) Have you adequately explained the relevance of your study for national and state education standards?
- 6) Have you discussed any limitations?
- 7) Have you identified areas for future research possibilities?

Suggested 4-6 pages						
Rubric Score	Does not meet expectations 1	Approaches expectations 2	Meets expectations 3	Exceeds expectations 4		
Grade Score	F Less than 7 points	C 7 – 7.9 points	B to B+ 8.0 – 8.9 points	A- to A 9 – 10 points		
Discussion, Reflection, Implications, Recommend ations, and Action Plan	Project is so brief, incomplete, or off topic that any reasonably accurate assessment is impossible.	Project addresses practical implications of study findings including how they will be shared with others. Attempts to discuss threats to validity, but does so superficially and/or fails to offer antidotes. Does not consistently support assertions or interpretations using sound arguments consistent with study findings. Does not describe recommendations for future research, or how results will be applied in practice.	Project addresses theoretical/practical implications of study findings including how they will be shared with others. Highlights threats to validity, reporting on how they were addressed. Supports assertions/interpretations using sound arguments consistent with study findings. Does not describe recommendations for future research, or how results will be applied.	Project includes evaluation of the study's strengths and weaknesses. Addresses theoretical/practical implications of study findings including how they will be shared with others. Highlights threats to validity, reporting on how they were addressed. Supports assertions/interpretations using sound arguments consistent with study findings. Describes recommendations for future research, and how results will be applied in the practice.		

#### References. Appendices. Writing Styles. Mechanics. and General Notes (5 points possible)

Include a complete list of references in APA format. Append all appropriate materials, including, if relevant, any questionnaires, inventories, assessments, sample student work, etc. Include at least one example of each tool you use—it's ideal to include one blank version and one version completed by one of your research subjects. In addition, follow these general guidelines:

• The model for your study report is not a master's thesis nor traditional class research paper, but rather paper prepared focuses more on practicalizing theory into your teaching practice.

- It is expected that the entire project will be described in a 25-30 page paper; please do not exceed the 30-page limit.
- Write in the past tense as much as it makes sense to do so
- Your paper must be anonymous; do not include names of school district, school, teachers, or students.
- Be sure to make a personal and professional connection to your topic and project
- Feel free to revise your questions based on data, to make these questions more focused

Consider the following questions as you draft your references and appendices and consider the overall writing quality of your paper:

- 1) Did you follow the APA style for the report for a running head, page numbering, references, citations, and the appendix?
- 2) Does the report include a title page with project title, author's name, and author's professional affiliation?
- 3) Are references current and from different sources?

4) Are all references cited in the research report included in the references? Have you provided a complete reference list of all print and non-print (Internet) references?

5) Is the report coherent, concise, and well structured with a clear purpose?

6) Is the report grammatically correct with proper usage of language?

7) Does the report have your distinctive focus and voice? Have you used professional language (i.e., no jargon)? Have you written in an accessible style and presentation?

Rubric Score	Does not meet expectations	Approaches expectations	Meets expectations 3	Exceeds expectations
Grade	F	C	B to B+	A- to A+
Score	Less than 3 points	3 – 3.9 points	4 – 4.4 points	4.5 – 5 points
References, Appendices, Writing Styles, Mechanics, and General Notes	Paper is so brief, incomplete, or off-topic that any reasonably accurate assessment is impossible.	Paper falls short of accepted standards for master's level composition. Drafting errors and error patterns are widespread. Voice, verb tense, and writing style vary from section to section. Technical terms are used incorrectly and/or imprecisely, reflecting only a rudimentary understanding of the underlying concepts. Text is formulaic, relying heavily on paraphrases and "borrowed" materials not formally cited. Transitions are weak, contributing to an apparent lack of direction. Paper does not adhere to formatting specifications provided in course text and materials. Citations and references page do not follow APA style.	Paper is well written with few notable drafting errors. Voice, verb tense, and writing style are generally consistent with few exceptions that do not substantially diminish readability. Most technical terms are used correctly, reflecting adequate understanding of the underlying concepts. Text is original, but opinions and propositions are not consistently supported by logic and references to published research. Transitions do not connect sections seamlessly but do not substantially diminish readability. Paper does adhere to formatting specifications provided in course text and materials. Citations/references page do not follow APA style.	Paper is well written with no notable drafting errors. Voice, verb tense, and writing style are consistent throughout. Technical terms are used precisely and accurately, reflecting a firm understanding of underlying concepts. Text is original; opinions and propositions are supported by strong logic and formal references to published research. Sections are linked with unifying transitions, giving the report a clear sense of direction. Paper adheres to formatting specifications provided in course text and materials. Citations/references page follow APA style.

## **Grading Scale for Research Project**

60 points: Substantially meets the project and report requirements. All criteria are addressed fully.

56-59 points: Meets the project and report requirements. Criteria adequately addressed.

55-53 points: Meets some, but not all, of the project and report requirements. Weaknesses in addressing some of the criteria. 53 points and below: Does not meet the project and report requirements. Weaknesses in addressing the majority of the criteria. *Please note that B- is not a passing grade*