

TEACHER'S PERCEPTIONS AND USE OF WRITING ACROSS THE  
CURRICULUM ASSIGNMENTS IN MATH, SCIENCE AND SOCIAL STUDIES  
CLASSROOMS

By

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## ABSTRACT

This research study explores the perceptions of non-English Language Arts Teachers regarding their use of Writing Across the Curriculum assignments in their classrooms. Research has shown that writing to learn is an effective teaching technique, yet it faces resistance because of a misconception that it is not of value in a culture of standardized testing. The following study surveyed a group of middle and high school teachers and revealed that these teachers were confused about the meaning and benefits of Writing Across the Curriculum, were hesitant to take on any additional workload, but would be open to use the technique if they received more training and support.

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## CHAPTER I

### INTRODUCTION

The current expectations for students, as outlined in most state standards and common Core State standards call for students to be writing regularly. They should be writing over both long time frames and short, and for a wide variety of purposes. They should be able to write opinions and arguments with evidence, informational pieces and narratives (National Governors Association Center for Best Practices & Council of Chief State School Offices, 2010, p.18). And yet, the increasing pressure caused by state mandated standardized testing has caused some teachers to abandon learning strategies that are not easily assessed through these tests, having students write less and less. Writing across the Curriculum (WAC) is a historically proven learning approach that encourages the acquisition of content area knowledge through the exercise of writing. The learning gained through WAC however; is usually broad in nature and does not assess well under the narrow questioning of standardized tests. Misconceptions, caused by a shortage of time and an excess of pressure created by standardized testing have driven many teachers away from this proven, student centered, learning approach.

This study identifies how Math, Science and Social Studies teachers view the Writing across the Curriculum strategy and how that perception affects their use of it in their classrooms. The study focused on the following question: How do the perceptions of Science, Math and Social Studies teachers, regarding Writing Across the Curriculum (WAC) affect how they use WAC assignments in their classrooms?

The study took place in a small rural school district in the Midwest. The researcher gathered information regarding teachers' perceptions, knowledge of, training with and use of WAC through the use of surveys, individual interviews, and document analysis of sample WAC assignments and lesson plans. A grounded theory approach was used to analyze the data and render the results.

This study revealed how Math, Science and Social Studies teachers perceive WAC and how that affects its use in their classroom. With the increased pressure of standardized testing, misconceptions are driving teachers away from WAC. As a proven, dynamic and student centered strategy, Writing across the Curriculum should not be abandoned because of teacher's misconceptions. By exploring teacher's perceptions and use of WAC these misconceptions can be addressed and professional development opportunities can be created to show teachers how to use WAC to its full potential.

## CHAPTER II

### LITERATURE REVIEW

In the current climate of standards based educational reform, No Child Left Behind, growing accountability, and with the use of technology increasing at a blistering pace; students are doing more writing than ever, but all of it is geared to passing state tests. Student's writing has become more homogeneous and less inspired as the state scores get better (Strickland, Bodino, Buchan, Jones, Nelson & Roden, 2001).

But is the only place for writing in assessment? Are we teaching our children that writing is scary, and worse still boring, by consistently attaching it to a test? Could writing be used elsewhere in the classroom? Somewhere where fear of spelling, grammar and comma splices is replaced with the comfort of a sympathetic audience? Somewhere where the boredom of yet another teacher directed topic is replaced with the excitement of student choice and engagement? The short answer is yes, yes it can.

Writing is too valuable of a tool to be limited to use only in ELA classes. Fisher and Frey (2013) states that "Because writing is thinking, if students are not

writing fluently, they probably aren't thinking fluently, at least about the topic of study" (p.97). They point out that students are forced to think about the content while they are writing. To dig deeper and really understand, not just gloss over or regurgitate without understanding. They claim that students often report that they understand the content better once they have written about it and that they have had more than one student tell them, "I didn't know what I thought until I wrote it down." (p.97) Writing can be used as more than just an assessment, WAC assignments can help students learn, and help teachers check for understanding. Writing across the Curriculum (WAC) provides a learning method that is proven effective, student centered, inquiry based, reflective and stimulating.

Why then is Writing across the Curriculum is not being used in more classrooms. What is standing in the way? Is it that educators are ignorant of the value of WAC or is it something else? How do teacher's perceptions of Writing across the Curriculum affect how they use them in Math, Science and Social Studies classrooms?

### Definition of Writing across the Curriculum

Simply put, Writing across the Curriculum is a twofold process: using writing as a learning strategy, also known as writing to learn; and creating better writers through practice, or learning to write. These two phases, writing to learn and learning to write, are not mutually exclusive; they are compatible and work together (McLeod, 1987). At the center of this movement is the idea that teaching



writing only in English and Composition classes limits its potential. Young(1997), states:

One of the most important uses for writing in educational settings is as a tool for learning and for classroom conversation. When writing is used in this way, the emphasis is not on the communication of knowledge already learned, nor on writing as an instrument for testing, nor on the effective expression and formal presentation of ideas. Rather, the emphasis is on writing as conversation, speculation, and problem solving.(p.27)

Fulwiler (1984) states that in his WAC workshops he wants his participants to build from the following general concepts: "that writing can be used to promote learning as well as to measure it; that the writing process can inform all assignments and evaluation; and that students write poorly for a variety of reasons-including poor motivation, immaturity, and inadequate rhetorical skill (p.119)." Writing across the Curriculum creates a connection between child-centered teaching and the importance of disciplinary mastery (Russell, 1992). Although WAC programs began as a response to a perceived problem of students' poor writing skills and the adoption of WAC is often seen as an administrative reaction to declining student literacy (McLeod, 1987, 1989), this type of attention is focused on the second phase of WAC, learning to write, which will not be addressed in this paper. Instead a focus on the strategy of writing to learn, which has the potential to move student writing away from boring, fear-filled writing for assessment and towards an engaged, personal endeavor will be patterned.

## Writing to Learn

At the University of London in 1966, the Schools Council of England initiated a ten year probative study to be run by the Institute of Education. Out of this study came the founding document for the WAC movement: Britton, Burgess, Martin, McLeod, and Rosen's *Schools council research studies: The development of writing abilities (11-18)* in 1975. In it, Britton et al (1975) argued that writing, because it imposes the structure of grammar and semantics, allows a student's knowledge which is often built through experience, to move from a fuzzy implied state to a clear explicit one. Writing therefore is not only a product, a subject and a skill, but also a process that can be used to learn a discipline. This idea was echoed by other educational researchers at the time who thought of writing as a good tool for learning because it allows students to think critically and to process difficult content into understandable pieces (Emig, 1977; Giroux, 1979; Newell, 1998; Spivey, 1990).

Emig (1977) builds on Bruner's theory in describing the three major ways that we learn. She states that we learn by doing, by the representation of an image, and through restating. Writing, therefore, is a process where one uses all three modes of learning. Writing also enables students to better recall and comprehend materials (Beins, 1993; Foos, 1995; Hinkle & Hinkle, 1990; Penrose, 1992). Its strength is that it enables us to explain things to ourselves before we explain them to others (McLeod, 1987).

Writing to learn shows that writing does not need to be limited to composition courses; that writing is a learning strategy and content area teachers have seen the positive effects of writing on their students (Audet, Hickman, & Dobrynina, 1996; Rivard, 1994). Writing across the Curriculum models that writing is not only a tool for assessment but also for learning.

### The Success of Writing across the Curriculum

The majority of studies regarding Writing across the Curriculum have focused on undergraduate level students. A 2008 survey of more than 23,000 students at 82 American universities found that students who reported doing more extensive writing in their courses were far more likely to be highly engaged. The report found that when schools provided students with extensive, intellectually challenging writing opportunities, the students were more engaged with analysis, synthesis and integration of these ideas. Additionally, their teachers reported greater academic learning and development (NSSE, pp.20-21).

Similar results were reported by Sherry Jordan, (2014) a professor at the University of St. Thomas in her study of using WAC assignments in her own classroom. She replaced quizzes with low stakes writing assignments and found that they were much more effective than the tests for keeping students accountable for their reading assignments (p. 52). Overall, she found that the WAC assignments, compared to her use of quizzes, caused the students to read

the text more carefully, to think about them more deeply, and prepared them much better for class discussion (p.58).

In a meta-analysis of 48 school-based writing to learn programs (Bangert-Drowns, Hurley and Wilkinson, 2004), conclusions support that these programs can have a positive impact on academic achievement. Writing across the Curriculum activities are particularly appropriate for middle and secondary students because students are able to make large gains with little assistance and simple strategies.

Even though there have been few studies on the effects of WAC on public school students, the existing results show potential (Davis, Rooze, & Runnels, 1992; Konopak, Martin, & Martin, 1990). In Klein (2000), the potential of WAC in the public school classroom can be seen. In this study, 70 middle school children carried out science experiments, stated their explanations and then wrote journal style notes while thinking aloud. Their writing was not graded nor used as an assessment, but as a tool to organize their thinking. Four aspects of the data (writing operations, sequencing, text features and strategies for generating content) were analyzed and it was found that brainstorming and writing contributed to the students' ability to understand and explain their experiments. For middle school students, writing-to-learn is a learning experience if diverse strategies are employed (Klein, 2000).

In study after study WAC has proven to be an effective learning strategy showing that increased amounts of brief subject related, non-tested writing such as brainstorming, journaling or free-writing can dramatically improve student



learning and enable students to better clarify difficult concepts (Weiss and Walters 1980).

### Perceptions of Writing across the Curriculum

Writing across the Curriculum has demonstrated its value as a learning strategy, but the perception of WAC to educators is a hurdle to its increased use in the classroom. In a climate of standardized testing and with more classroom time being used to prepare students for state tests, Writing across the Curriculum can be perceived to be too costly because the kinds of thinking encouraged by WAC have little correlation to the type of learning measured by objective tests (Anson and Beach, 1990).

While Writing across the Curriculum can be criticized for not preparing students for standard testing, its radical approach is also one of its greatest strengths. Writing across the Curriculum allows for students who have been traditionally excluded to participate and promotes egalitarian access to disciplines (LeCourt, 1996.) Writing across the Curriculum is not just another teaching strategy, but gives students the freedom to be themselves and to be included in discourse that they have traditionally been excluded from. For example, a WAC assignment in an Engineering class might give a woman the freedom she needs to make a space for herself by researching topics that interest her, or WAC might give a student of American Indian heritage the freedom he needs to write his perspective of history in a Social Studies class. By

allowing students freedom and encouraging critical thinking, the disciplines move beyond what will be on the state standardized test (Young, 2003).

In the words of McLeod (1987) "Writing across the Curriculum means change" (p. 23) and with change comes discomfort. Creating a WAC program can be a Sisyphean task because it goes against the teacher-centered lecture style of teaching (McLeod, 1989) which also explains some of its criticism. The best learning is experiential and requires students to make the connections themselves, but most teaching still follows a teacher centered process of instructors lecturing and presenting knowledge and having students respond (Tchudi, 1986). Some claim that WAC places an unreasonable demand on a teacher's time, and that it promotes semi-literacy (Coles Jr., 1991). For others it ignores complexities of cultures, classrooms, assignments and technology that might also equally facilitate learning (Ackerman, 1993).

Although WAC has proven itself to be an effective method of learning, it faces an uphill battle. Change comes slowly especially regarding strategies that require increased teacher preparation and an often uncomfortable shift in classroom dynamics. But studies show that faculty attitudes towards Writing across the Curriculum area are changing, from fear of having to grade like an English teacher to excitement (Weiss and Peich, 1980). Change in teacher attitude towards Writing across the Curriculum, however, and change in classroom practice are different.

Writing across the Curriculum is not a new idea. Introduced over thirty years ago WAC is a proven strategy that helps students learn content area

knowledge. But more than that, WAC has the ability to allow students to see writing as more than a test and to include traditionally excluded students. The purpose of this study is this: How do the perceptions of Science, Math and Social Studies teachers, regarding Writing Across the Curriculum affect how they use WAC assignments in their classrooms?

In an educational climate where students write more but also write more poorly, classroom teachers are able to not only use a demonstrated learning strategy but also take the fear out of writing through the use of Writing across the Curriculum, so why don't they? What is standing in the way?

## CHAPTER III

### METHODOLOGY

#### Question:

Writing across the Curriculum (WAC) is a learning strategy that is proven effective, student centered, inquiry based, reflective and stimulating, yet it is under utilized in the classroom. The purpose of this study is to analyze the relationship between teacher perceptions of WAC and its use in the classroom.

The driving question for this study is:

- How do the perceptions of Math, Science, and Social Studies teachers, regarding Writing across the Curriculum (WAC) affect how they use WAC assignments in their classrooms?
  - What are the definitions of Writing across the curriculum?
  - What are Science, Math and Social Studies teachers' perceptions of Writing across the Curriculum?
  - How are Writing across the Curriculum assignments used in Science, Math and Social Studies classrooms?

#### Setting:

The study took place in a rural Midwestern school district consisting of a middle and secondary school. The student to teacher ratio was equal to the state average at 21 students for each full-time teacher. Ninety six percent of the

students in this district are Caucasian and thirty eight percent of the students qualify for free or reduced lunch. The culture of this district is characterized by the importance of outdoor recreational activities such as hunting and fishing and conservative family values.

#### Participants:

The participants of this study will be certified Math, Science, and Social Studies teachers in middle and secondary classrooms. All of the teachers will have more than five years of teaching experience but fewer than fifteen. All of the teachers are Caucasian and reside within twenty five miles of the district. A number of the participants are pursuing advanced degrees. An application will be made to the University's HRSC for permission to research human subjects (see Appendix A).

#### Data Sources:

The sources of data used in this study will include a survey given to middle and secondary Math, Science and Social Studies teachers asking for their perceptions about and use of Writing across the Curriculum assignments. Voluntary interviews will also be conducted to gain further and more detailed information. Individual teacher's assignments, lesson plans and pacing guides will also be reviewed to see how WAC is actually used in the classroom.



#### Procedures:

Every middle or secondary Math, Science and Social Studies teacher in the district was sent an invitation (see Appendix B) to complete an anonymous online survey asking questions about their definition, perceptions, and use of Writing across the Curriculum in their classroom (see Appendix C). All participants were asked to sign a Participant Agreement (see Appendix D) The survey also included an invitation asking volunteers for interviews and to provide documents for analysis. The interview questions focused more on a teacher's individual experience and allowed for the teacher to elaborate on their perceptions and use of WAC (see Appendix E). Document analysis would have been used to see how often WAC assignments are used in the classroom and what importance is given to them. A grounded theory approach was used to analyze the data and render results.

#### Limitations of the Study:

This study was limited by the small number of participants and the use of only one district. This study was a microcosm, and therefore there are limitations inherent in applying the findings on a larger scale. Additionally, the bias of the researcher towards the use of Writing across the Curriculum in the classroom must be taken into account.

## CHAPTER IV

### FINDINGS

In an effort to assess teacher's perceptions of Writing Across the Curriculum, the design of the study implemented a mixed methodology approach using a survey and interviews. The participants were Non-English Language Arts teachers in a small district in Northern Michigan. A survey was distributed to twenty eight participants with twelve individuals responding, a forty three percent return. Of the teachers that responded fifty nine percent identified themselves as Geography teachers; fifty percent Math teachers; forty two percent History; and thirty three percent Science. Middle grade (sixth, seventh, or eighth) teachers make up sixty seven percent; fifty percent ninth or tenth and fifty percent eleventh or twelfth grade. While fifty percent of the respondents are new teachers having been teaching for four or fewer years; thirty three percent have been teaching for eleven to fifteen years, eight percent for five to ten years, and eight percent for sixteen or more years, providing a variety of experience levels. Out of twelve respondents, ten are not currently pursuing any graduate work, one is working on a Masters in Education and one a Masters in Educational Administration.

To gauge the respondent's level of commitment to innovative teaching, and their involvement in professional development, the participants were asked

whether they take part in professional development outside of their district's requirements. Seventy five percent of the respondents participate in professional development outside of their districts requirements, including training in: specialties, graduate classes, Professional Learning Communities, and content area and technology workshops.

In order to avoid any confusion about what definition of Writing Across the Curriculum is, participants were asked to provide their own working explanation. When asked what their own definition of Writing Across the Curriculum is, fifty percent of the respondents stated that WAC is used to assess or fix problems with Student's writing skills, twenty five percent of respondents stated that it was when writing was used in all classes, while only eight percent stated that WAC was a way to incorporate writing as a way of learning. "WAC means: students should incorporate writing as a way of learning." (Taggart, 2009) Please note all names have been changed.

Based upon their own definitions of Writing Across the Curriculum, the participants were then asked their perspective of the tool. The majority of teacher responses were negative: fifty percent of respondents said that WAC required too much teacher effort, thirty two percent of respondents said that WAC was too hard, that they didn't feel like they knew what they were doing, or that they were uncomfortable assessing writing and that it takes up too much, already precious class time, twenty four percent of respondents passed the blame to the students and said that they do not like it because the students do not like it, because they hate to write. A small minority saw value in the use of WAC however, sixteen



percent said that it helps students to learn to think logically and organize their thoughts and that it helps students to learn multiple types of writing, especially those used in real life, eight percent of respondents said that it teaches critical thinking and that it is a great learning tool

The participants were then asked if they use WAC in their own classrooms, and how. Eighty four percent of respondents said yes, and ninety percent of those respondents described using WAC to assess their student's knowledge. Ten percent of respondents said they used WAC as a teaching tool, "we use writing to explain historical ideas or judge the behavior of others. We write persuasive essays on topical questions using historical data, contemporary data and core democratic values." (Patton, 2009) The survey participants were asked to further describe how they use WAC in their classroom, describing specific assignments and objectives if possible. In these teachers' classes, students write a persuasive letter about the issues in Israel, they write some RAFT pieces from the perspective of someone from the past, and they write a research paper on a current issues topic. The students also write out complex problems in biology to determine where the error in thinking occurs. Or in math, they explain how they got their answer using words. (Booker, Brodie, Patton, Redding, Taggart, 2009)

When asked how often they used WAC in their classroom per marking period: forty percent used it two to three times, thirty percent used it four to five times, twenty percent used it more than five times and ten percent used it one time or less per marking period. Of the sixteen percent of respondents who said

they do not use WAC in their classrooms, fifty percent said that it was because WAC is a waste of time and fifty percent said that it was because they didn't know enough about it. When asked if they were interested in using it in the future, both respondents said they were neutral.

The participants were then asked to describe the advantages and disadvantages of using WAC in their classroom: fifty percent of respondents said that it helped to improve the student's writing ability, twenty five percent said that it was a great assessment tool and that WAC made the students more comfortable with their own writing, eight percent said that it helps them to reach more students and that it helps the students learn to think. One teacher described in his survey that "having students write from the perspective of someone from the past is very powerful. The students love to read their letters to the class. This writing to share has been amazing in my class. The kids put in a tremendous amount of thought and creativity. It is a great teaching tool to spark the interest of the class." (Brodie, 2009)

When they described the disadvantages of using WAC one teacher in their interview stated: "I think most teachers view WAC as one more thing on their plates. I think all the talk of rubrics and writing systems (Jon Collins, Lucy Calkins, Power Writing) tends to overwhelm. Writing also is focused on improving writing scores on standardized tests. I think it is too much for the general ed[ucation] teacher to handle. The subjective nature of grading writing is hard for teachers of science, and math." (Redding, 2009) As a group sixty eight percent of the participants stated that it takes too much time, sixteen percent of

respondents had concerns that WAC would cause students to earn poor grades, just because of poor writing skills. Eight percent responded that there are no disadvantages and eight percent responded that they were personally uncomfortable with grading writing. The respondents were then asked to rate their own comfort with their writing skills and their ability to evaluate others writing; fifty eight percent of respondents are comfortable with their own writing skills but only forty two percent are comfortable evaluating others writing skills; twenty five percent are very comfortable with both their own skills and with evaluating others. Sixteen percent are uncomfortable both with their own skills and with evaluating others and sixteen percent are neutral about evaluating others.

To gauge how much pressure teachers in this district feel regarding the use of WAC they were asked what their district requirements were for using WAC are: sixty eight percent of respondents claimed that there was no requirement, eight percent said they were unsure, eight percent said that they were supposed “to do it” but didn’t have any specific requirements, eight percent said that they were supposed to improve all student writing by three percent “especially boys”, eight percent said that students are only required to write once a week during Academic Center (a half hour long study hall like period everyday). Then when asked what training they have received in order to do WAC: forty percent of respondents said that they had some in-service training from the Intermediate School District, forty percent of respondents said that they had received some training while they were a student, twenty percent of respondents said they had



received no training. When asked "What could your school or district do to encourage its use in your classroom?" One teacher responded "We are in the process of more training and a focus on lesson design. I feel we can use writing as a tool in our classes and not just another outcome to be assessed. We have had a good deal of sharing the positive effects of writing in department meetings as well." (Patton, 2009)

When asked how prepared they felt to use WAC: forty percent of respondents felt unprepared, forty percent of respondents felt neutral, twenty percent of respondents felt prepared. When asked what training would they like to have regarding WAC: fifty percent of respondents said that they would like specific strategy training and real life applications, twenty five percent of respondents said that they would like no additional training, twenty five percent of respondents would like training that provides ongoing support, and "suggestions from LA teachers," (Booker, 2009) twelve percent of respondents stated that they would like help creating rubrics and training on how to assess writing. One teacher responded in their survey that: "I feel I need more training and more time. I would like kids to write as a way to learn and show knowledge. I am not interested in fulfilling my districts WAC minimum requirements. As a non LA teacher, I am bogged down by rubrics and grading. I have found writing and sharing to be the most beneficial." (Brodie, 2009)

When asked if WAC is a good teaching tool: eighty four percent of respondents said yes, of those seventy five percent of respondents said that it makes students better writers, fifty percent stated that it was a good assessment

tool, twenty five percent of these respondents stated that it is a good learning tool because "it makes students process the material, not just memorize it," (Redding, 2009) and twenty five percent of these respondents said that it forces students to think critically. Eight percent of respondents said no, WAC is not a good teaching tool, and eight percent of respondents were unsure as to the value of WAC.

Participants were also asked if they would be willing to participate in a confidential interview, or provide examples of their WAC assignments, all declined.

## CHAPTER V

### CONCLUSION

In a survey of twelve middle and high school teachers, who teach Math, Science, History and Geography, fifty percent of whom are new teachers, the other half having between five and sixteen years of experience, seventy five percent of whom pursue development opportunities above and beyond their districts required, a concerning perception has been exposed. Teachers do not know what WAC really is, its benefits, or how to use it in their classrooms. Half of the respondents described WAC as a way to assess or fix student writing problems, only one respondent knew that WAC is a way to incorporate writing as a way of learning. Not only are the majority of these teachers ignorant of the true nature of WAC, but the perception that they do have is negative. Despite not truly knowing what WAC is, most of the teachers believed that WAC took too much time and effort, while only two respondents thought that it helped students to think logically and organize their thoughts. For these teachers WAC is just yet another demand by the district to incorporate something new that they don't understand, don't know how to use, and find to be too time consuming.

Although the vast majority of the teachers claim they use WAC, they use it not as it is intended, but ninety percent use it to assess student knowledge, not

as a learning tool. They are giving students writing assignments, but not making them 'low stakes' enough. Likely because of this, they are not able to see the true advantages of WAC, instead they are thinking that it improves writing ability and makes a great assessment tool. Since the majority of the teachers are only using it as an assessment tool, it is easy to see why most of them think that it takes too much time, or that they are concerned that students will get a poor grade in their class because they are poor writers and not because they lack understanding of the material. If you use an essay instead of a math test to gauge student understanding of math concepts, this could be concerning, and different, and time consuming. But it also isn't taking advantage of the vast abilities of WAC as a learning tool, not as an assessment.

Training is another issue that demands attention. The majority of teachers received some sort of training at one point, some during in-service, some when they received their teacher training, but seventy five percent of the respondents said they needed more, and that the training needed to be specific, real life and ongoing. Only twenty percent of respondents said they felt prepared to use WAC. The need for training is clear, not only because the teachers want it, but because it is obvious they are so unaware of the value of WAC through their misunderstanding and marginal use of it.

Writing is too valuable of a tool to be limited to use only in ELA classes. Writing forces the student to really think about the content, to dig deeper and truly understand, not just gloss over or regurgitate without meaning. Writing causes students to ponder and question. WAC assignments should be used that



writing can be used to promote learning as well as to measure it and that writing process can inform all assignments and evaluation. (Fulwiler, 1984, p.119)

Writing therefore is not only a product, a subject and a skill, but also a process that can be used to learn.

Study after study WAC has proven to be an effective learning tool showing that increased amounts of brief subject related, non-tested writing such as brainstorming, journaling or free-writing can dramatically improve student learning and enable students to better clarify difficult concepts (Weiss and Walters ,1980). It is a waste of a valuable tool to relegate writing to only existing in ELA classes, or WAC assignments only to be used as assessments.

In a perfect world, districts would require all teachers to participate in WAC regularly in their classes, and would provide those teachers specific training and ongoing support to be able to do it. However, standardized testing and increased competition for limited funds are tying districts hands while they make greater and greater demands of teachers. The most realistic recommendation is that Principals, or department heads, or even individual teachers or teams of teachers take a long term perspective and embrace WAC. Throw off the negative perceptions and misunderstandings and take a look at WAC with fresh eyes and see all the value it can bring to their classrooms and students. Do a little research and then try it, add a daily journal to their warm up, do some brainstorming or power writing, try a raft project, or even just ask students to explain their thinking in writing instead of just solving a math problem. The skeptics will be surprised.



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## APPENDIX A

### APPLICATION TO THE HRSC AT FERRIS STATE UNIVERSITY

**APPLICATION FOR APPROVAL OF A PROJECT  
INVOLVING HUMAN SUBJECTS  
INITIAL REVIEW (and 5 yr. renewal)  
HSRC**

Dr. Connie Meinholdt, Chair  
College of Arts and Sciences  
Ferris State University  
Big Rapids, MI 49307  
PHONE 231-591-2759  
FAX 231-591-2541  
E-Mail [connie\\_meinholdt@ferris.edu](mailto:connie_meinholdt@ferris.edu)

**DIRECTIONS:** Please complete the questions on this application using the instructions and definitions found on the attached sheets.

1. Responsible Project  
Investigator:

(Faculty or staff supervisor)  
Name: **Dr. V. Hines**  
Employer/Student ID Number:

\_\_\_\_\_

Additional Investigator(s):

Name: **Meagan Smith Lucas**  
Student ID#: **10394516**  
735 Shadywood Lane  
Hendersonville, Nc 28792

Department: **Education**  
College: **COEHS**

Name:

\_\_\_\_\_  
SS# or Student ID#:

I accept responsibility for  
conducting the proposed  
research in accordance with the  
protections of human subjects as  
specified by HSRC, including the  
supervision of faculty and student  
co-investigators.

\_\_\_\_\_  
Name:

\_\_\_\_\_  
SS# or Student ID#:

Signature:

\_\_\_\_\_  
Name:

\_\_\_\_\_  
SS# or Student ID#:

\_\_\_\_\_

**2. Address:** If there are more than two investigators, please indicate who should receive correspondence, and provide further addresses on a separate page.



Responsible Project Investigator  
**Dr. V. Hines**  
**413 Bishop Hall**  
**Ferris State University**  
**Big Rapids, MI**

Additional Investigator(s)  
**Meagan Smith Lucas**  
**123 Harold Case Dr**  
**Fletcher, NC 28732**

Phone #: **231.591.3054** \_\_\_\_\_

Fax #: \_\_\_\_\_

Email: \_\_\_\_\_

**hinesv@ferris.edu** \_\_\_\_\_

Phone #: **828-687-7358** \_\_\_\_\_

Fax #: \_\_\_\_\_

Email: **meagan.lucas@gmail.com**

3. Title of Project: **Teacher's Perceptions and use of Writing across the Curriculum Assignments in Math, Science and Social Studies Classrooms**

**FOR OFFICE USE ONLY**

Subcommittee \_\_\_\_\_ Agenda \_\_\_\_\_

4. Funding (if any) \_\_\_\_\_  
 FSU Contracts and Grants app. # \_\_\_\_\_ if applicable

5. Has this protocol been submitted to the FDA or are there plans to submit it to the FDA?

[Click here to enter text.](#) **Yes**

[Click here to enter text.](#) **No**

If yes, is there an IND #? [Choose an item.](#) IND # \_\_\_\_\_

6. Does this project involve the use of Materials of Human Origin (e.g., human blood or tissue)?

No ☒ Yes ☐

7. When would you prefer to begin data collection? **June 8<sup>th</sup>, 2009**

***Please remember you may not begin data collection without HSRC approval.***

8. Category (Circle a, b, or c below and specify category for a and b.)

**X a. This proposal is submitted as EXEMPT from full review.**

**Specify category or categories:** [1-C](#) and [1-E](#).

10. Project Description (Abstract): Please limit your response to 200 words.

**This study will attempt to identify how Math, Science and Social Studies**

**teachers view the Writing across the Curriculum strategy and how that perception affects their use of it in their classrooms.**

11. Procedures: Please describe all project activities to be used in collecting data from human subjects. This also includes procedures for collecting materials of human origin and analysis of existing data originally collected from human subjects  
Data collection will take place through the use of voluntary surveys, interviews and document analysis.

12. Subject Population: Describe your subject population. (e.g., high school athletes, women over 50 w/breast cancer, small business owners )

**The participants of this study will be certified Math, Science, and Social Studies teachers in middle and secondary classrooms.**

a. The study population may include (check each category where subjects **may be included by design or incidentally**):

Minors ☐   
 Pregnant Women ☐   
 Women of Childbearing Age ☐   
 Institutionalized Persons ☐   
 Students ☐   
 Low Income Persons ☐   
 Minorities ☐   
 Incompetent Persons (or those with diminished capacity) ☐

b. Number of subjects (including controls) **approx 25**

c. How will the subjects be recruited? (Attach appropriate number of copies of recruiting advertisement, if any.  
See attached recruitment letter.

d. If you are associated with the subjects (e.g., they are your students, employees, patients), please explain the nature of the association.  
I did my student teaching in this district, but no longer have any association there as I now live out of state.

e. If someone will receive payment for recruiting the subjects please explain the amount of payment, who pays it and who receives it.

f. Will the research subjects be compensated? ☒ No ☐ Yes.  
If yes, details concerning payment, including the amount and schedule of payments, must be explained in the informed consent.

g. Will the subjects incur additional financial costs as a result of their participation

in this study? ☒ No ☐ Yes. **If yes**, please include an explanation in the informed consent.

- h. Will this research be conducted with subjects who reside in another country or live in a cultural context different from mainstream US society? ☒ No ☐ Yes.

(1) If yes, will there be any corresponding complications in your ability to minimize risks to subjects, maintain their confidentiality and/or assure their right to voluntary informed consent as individuals?

☐ No ☐ Yes.

13. How will the subjects' privacy be protected? **The surveys will be blind, having no names attached. Interviews and documents will not have volunteer's names on them but will be referenced with a number.**

14. Risks and Benefits for subjects: **There are no risks anticipated nor tangible rewards for the subjects.**

15. Consent Procedures

**Participants will be asked to read and provide consent with an Informed consent to participate document. See attached.**

CHECKLIST: Check off that you have included each of these items. If not applicable, state N/A:

☒ Completed application

☒ The correct number of copies of the application and instruments, according to the category of review

☒ Consent form (or script for verbal consent), if applicable

☐ Advertisement, if applicable

☒ One complete copy of the methods chapter of the research proposal

APPENDIX B  
PARTICIPANT RECRUITMENT LETTER

Dear Colleague,

I am writing to request your participation in a research project that focuses on how Math, Science and Social Studies view the learning strategy of Writing across the Curriculum and how that affects its use in the classroom. The purpose of this research is for partial fulfillment of the requirements for the Masters of Education at Ferris State University.

Participation in this study requires that you take a few moments to fill out an online survey, with the possibility of a voluntary follow up interview.

Individual identity will be protected in this study, the survey is blind (no names attached), and the interview process will include a contract guaranteeing anonymity. While the study will result in a paper presentation and publication, no names or other identifying information will be revealed and will be the sole custody of the researcher.

Should you wish to participate, please follow the link below and complete the survey.

<link to survey>

Thank you for your time and consideration. If you have any questions or comments, please feel free to contact me, 231-838-0850 or [meagan.lucas@gmail.com](mailto:meagan.lucas@gmail.com)

Sincerely,  
Meagan Smith Lucas  
Principal Researcher



APPENDIX C  
PARTICIPANT SURVEY

1. What subject(s) do you teach?

Check all that apply:

Math  
Pre-Algebra/Algebra  
Geometry  
Trigonometry  
Calculus  
Science  
Chemistry  
Biology  
Physics  
Social Studies  
History  
Civics  
Geography  
Economics

2. What level do you teach?

Check all that apply:

Middle  
9<sup>th</sup>&10<sup>th</sup>  
11<sup>th</sup> and 12th

3. How many years have you been teaching?

(0-4)  
(5-10)  
(11-15)  
(16+)

4. Are you currently pursuing any graduate work?

No  
Yes – Masters in Education  
Yes – Masters in Subject Area  
Yes – Masters in Administration  
Yes – Doctoral  
Yes – Other

5. Do you participate in Professional Development outside of school/district requirements? If so, how?

6. How comfortable are you with your own writing skills?

Not very comfortable, not comfortable, neutral, comfortable, very comfortable

7. How comfortable are you evaluating others writing skills?

Not very comfortable, not comfortable, neutral, comfortable, very comfortable

8. What is your definition of Writing Across the Curriculum?

9. What is your perspective of Writing Across the Curriculum? Why?
10. Describe your use of WAC in your classroom.
11. If you use WAC in your classroom, what advantages have you found to its use?
12. If you use WAC in your classroom, what disadvantages have you found to its use?
13. If you use WAC in your classroom, how often do you use it, per marking period?
  - 0-1 times
  - 2-3 times
  - 4-5 times
  - 5+ times
14. If you don't use WAC in your classroom, why not?
15. If you don't use WAC in your classroom, how interested are you in using it?
  - Very uninterested, uninterested, neutral, interested, very interested
16. What (if any) are your district/building requirements regarding WAC?
17. What training have you received (if any) regarding WAC and from where?
18. How well do you feel that this training prepared you?
  - Very unprepared, unprepared, neutral, prepared, very prepared
19. What additional training would you like to have regarding WAC?
20. Do you think that Writing Across the Curriculum is a good teaching tool? Why or Why not?
21. If you would be willing to participate in a confidential interview (by phone or email) please include your email address so that the researcher may contact you.
22. If you would be willing to provide examples of your WAC assignments or lesson plans for confidential document analysis please include your email address so that the researcher may contact you.

## APPENDIX D

### INFORMED CONSENT TO PARTICIPATE AS A RESEARCH SUBJECT

Project Title: Teacher's Perceptions and use of Writing across the Curriculum  
Assignments in Math, Science and Social Studies Classrooms

Investigator: Meagan Smith Lucas

**Purpose of Research:** This research is investigating what the perceptions of Math, Science and Social Studies teachers are, and how they use WAC in the classroom.

**Expected Duration of the Study:** This research survey should take approximately 30 minutes for you to complete.

**Procedure:** In an anonymous survey you will be asked about your perceptions and use of Writing Across the Curriculum in your classroom. You will be asked if you use WAC in your classroom and how. You will be asked about your training regarding WAC. I want to know why Math, Science and Social Studies teacher do or don't use WAC methods in their classrooms. Interview volunteers will be asked to elaborate on their survey answers, and will be asked more specifically about their perspectives and use of WAC via phone interviews or emails.

**Anticipated Risks or Discomfort:** No risks are anticipated. Identity will be kept confidential and the researcher will not use or provide information for disciplinary purposes.

**Benefits to the Participant:** No monetary or other tangible rewards are being offered to you.

**Confidentiality:** No records of your participation in this research will be disclosed to others. Because the research is qualitative excerpts of your survey may be included in the resulting manuscript text along with others, but no identifying information will be attached to it. Your name or affiliation will not be revealed in any document resulting from this research. In the case of interview and document volunteers, your name will not be recorded with the data, all information will be under lock and key, the sole property of the researcher.

**Contact Person for Questions or Problems:** If a research related injury occurs, or if you have questions about the research contact Meagan Smith Lucas, 828-687-7358, [smithm81@ferris.edu](mailto:smithm81@ferris.edu), [meagan.lucas@gmail.com](mailto:meagan.lucas@gmail.com). Questions regarding the rights of the subject should be addressed to Dr. Connie Meinholdt, Chair, Human Subject Research Committee, Ferris State University, Big Rapids, Michigan 49307, 231-591-2759, [connie\\_meinholdt@ferris.edu](mailto:connie_meinholdt@ferris.edu)

**Consent to Participate:** By continuing on to the survey, I have voluntarily decided to participate in this research project. The investigator named above has adequately answered all questions that I have about this research, the procedures involved, and my participation. I understand that the investigators named above will be available to answer any questions about experimental procedures throughout this research. I also understand that I may refuse to participate or voluntarily terminate my participation in this research at anytime without penalty. In addition, I certify that I am eighteen years of age or older.



APPENDIX E

INTERVIEW QUESTIONS

1. How do you define Writing Across the Curriculum?
2. How do you use WAC in your classroom?
3. What do you think are the strengths of WAC?

4. Can you think of a positive example of WAC in your classroom?
5. What do you think are the weaknesses of WAC?
6. Can you think of a negative example of WAC in your classroom?
7. What is standing in the way of you using it more?
8. What could your school or district do to encourage its use in your classroom?

## Re: Thesis defense Meg Lucas

Meg Lucas <meagan.lucas@gmail.com>

Mon 6/23/2014 12:23 AM

To: Virginia E Hines <VirginiaHines@ferris.edu>; Katherine Manley <KatherineManley@ferris.edu>; Vanessa Wyss <vlwyss@gmail.com>;

Cc: Liza J Ing <LizaIng@ferris.edu>;

Dear Dr's Hines, Manley and Wyss,

I hope that this finds you well. I am very excited for my presentation tomorrow at 10am!

I thought that it might work best, for you to contact me tomorrow when you are settled in. My Skype id is: mgnlcs or you can always find me using my email address [meagan.lucas@gmail.com](mailto:meagan.lucas@gmail.com). If you initiate the video call when you are ready, I will be waiting.

I have prepared my presentation in video form, because I was afraid that audio blips or video freezes over the course the the half hour presentation would be annoying and problematic. You can access it through this link:

<http://www.screencast.com/t/jCYloZMLeh>

I thought you could connect the teleconference with me, then open and view the video, that way if you have questions that need addressing during the presentation, I will be there. The video is 27 minutes long, a power point with narration over top.

If you have any questions or comment prior, please feel free to write or call.

Meagan

828-989-4006

•  
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On Thu, Jun 19, 2014 at 11:07 AM, Virginia E Hines <[VirginiaHines@ferris.edu](mailto:VirginiaHines@ferris.edu)> wrote:

**Meg,**

If you think that will work best for you, sounds good. We will all be in the same room viewing a 60 inch screen :)! It should take an hour.

Dr. Hines

Virginia E. Hines, Ed.D.  
Professor

413 Bishop Hall  
School of Education  
[231-591-3054](tel:231-591-3054)

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**From:** Meg Lucas <[meagan.lucas@gmail.com](mailto:meagan.lucas@gmail.com)>

**Sent:** Thursday, June 19, 2014 10:49 AM

**To:** Virginia E Hines

**Cc:** Liza J Ing

**Subject:** Re: Thesis defense Meg Lucas

Hi Dr. Hines,

I hope this finds you well and that you guys are getting some nice summery weather up there in Michigan.

I just wanted to touch base with you about Monday. I am in the process of putting the finishing touches on my presentation. I wasn't sure what you thought would work best for this long distance presentation - if you have done it before and had some ideas for logistics?

I was thinking that it might work best if I record my presentation and send you the link. (I use Camtasia to record my screen and my voice, and ScreenCast to host the video.) I'm a little concerned about the sound and video quality if I do the presentation live on skype, I don't use skype regularly but when I do am plagued with a number of screen freezes and audio blips. (I'm also not 100% sure that I can do a screenshare on skype with my account.) All you have to do is click on the link I will send you to watch the video presentation. You guys can either watch the video ahead of time, or while we are all on the skype call together.

I also didn't know if the three of you planned to be in the same room, or in different locations- if you need to be in different locations I can send everyone a link to the file to view the presentation, and then we can discuss using Go2Meeting or Skype.

I look forward to your thoughts.  
Meagan

On Sun, May 18, 2014 at 7:07 PM, Virginia E Hines <[VirginiaHines@ferris.edu](mailto:VirginiaHines@ferris.edu)> wrote:

June 23rd it is then, that's a Monday. How about 10 AM?

Virginia E. Hines, Ed.D.  
Professor  
413 Bishop Hall  
School of Education

231-591-3054

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**From:** Vanessa Wyss <[vlwyss@gmail.com](mailto:vlwyss@gmail.com)>

**Sent:** Sunday, May 18, 2014 9:52 AM

**To:** Virginia E Hines

**Cc:** Katherine Manley

**Subject:** Re: Thesis defense Meg Lucas

June right? That is the same time Promoted is around. I am not sure how long the defenses last but I can be there the 18th any time past 12. Friday the 20th anytime. The week of the 23rd I can be there anytime/anyday except for Tuesday when I start teaching in GR.

On Sat, May 17, 2014 at 4:42 PM, Virginia E Hines <[VirginiaHines@ferris.edu](mailto:VirginiaHines@ferris.edu)> wrote:

Ladies,

Meg Lucas is ready to defend her thesis (attached) and is proposing the following dates The morning on the 16th-19th or 23rd-26th. Her defense will be by SKYPE since she is in North Carolina. Please give me some times and dates you are available.

Thank you,

Ginny

Virginia E. Hines, Ed.D.  
Professor  
413 Bishop Hall  
School of Education  
[231-591-3054](tel:231-591-3054)



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Vanessa Wyss, Ph.D.  
Assistant Professor