Chapter 1 – Introduction

I pursued my undergraduate degree in science/math education because I wanted to provide an opportunity for students to have a strong science/math experience in high school. I decided to obtain my Master's degree in Curriculum and Instruction because I realized that curriculum is a way to expand my initial goal beyond my own classroom. I also enjoy the opportunity to work with fellow teachers on their content and instruction methods in addition to teaching my students. Curriculum development offers the possibility of linking content areas together, making material more accessible to all students by linking it to more familiar experiences or knowledge. As a science teacher I have worked to incorporate math skills and reading comprehension seamlessly into science content. Better math and reading skills are related to improved science skills.

My practicum will take place in both my classroom at Burke High School as well as with the science department for the entire Omaha Public Schools (OPS) District. OPS has 7 high schools servicing over 13,000 students grades 9-12; Burke is one these schools with a student population nearing 2,200. District wide the poverty rate is 69%, there is an 18% mobility rate within the district. One of the unique challenges is the 14% English Language Learner (ELL) population, within this subgroup there are 96 different native languages. Burke High is more affluent than the district with a 44% poverty rate, a 16% mobility rate and under 4% ELL students. These statistics are 2011-2012 data from the Nebraska Department of Education.

Chapter 2 – Setting

It is important to understand some background on the district's curriculum movement and science requirement as well as myself in order to see the motivation behind this practicum. In the fall of 2008 the Omaha Public Schools Director of Secondary Education approved a move toward concept based curriculum units for all content areas. The belief being that in developing units the Curriculum

Supervisors could insure that tested standards were covered thoroughly in the appropriate courses. Curriculum Supervisors and Lead Teachers were sent to clinics for training on developing these units. Following this training it was up to each department Curriculum Specialist to determine how the units would be developed for the courses in their area. In Science the reigns were soon handed over to the Lead Teacher, Christina Elf, to oversee the development (Ms. Elf will serve as my Practicum Mentor).

In the spring of 2009 an appeal was put out by Ms. Elf to all science teachers in the district, seeking teachers who would give up a portion of their summer to write curriculum under a new concept based paradigm. This was when I learned I love curriculum development. I spent two summers developing standards and concept based Chemistry curriculum and a third summer editing the curriculum products created by the 8th grade, Biology, Chemistry and Physics teams. Between summers there was weekend and break writing as well as Professional Development and Curriculum Day training. Throughout this work I have attended training and work sessions with Lynn Erickson (consultant on Standards Based Curriculum Development) and Tim Westerberg (School Improvement Coach who specializes in Standards Based Grading which OPS is entering the third year of implementation). I have presented at Curriculum Day sessions to peer high school science teachers as well as middle school science teachers. Two other teachers (Jaynie Bird (Biology) and Dara Rosenberg (8th Grade)) and I have become the curriculum team leads as we have continued to work since that first summer. These experiences have also gained me a teacher leader position within my building where I have been asked to lead the High Schools That Work Curriculum subcommittee, to be a building coach for our grading program and a reference for the science department with any curricular questions. I have also been assigned to mentor two new teachers to the district, a teacher associate who was assigned to work with me and this coming school year I will have an undergraduate practicum student and student teacher.

OPS has required Biology, Chemistry and Physics to graduate high school since 2001, last year was a transition pilot year and this year is the first year of the updated graduation requirement of

Physical Science, Biology and a third year of a science elective. When this shift was approved the School Board the priority was to develop the Physical Science Curriculum. I helped to develop the initial concept based units for Physical Science in addition to participating in the textbook adoption process and offered training on our developed material and the textbook basics to the pilot year teachers. A near second responsibility was the development of the curriculum for the elective courses. Ms. Bird and I trained teachers of elective courses on how to write the concept based units and have been assigned courses to mentor the teachers as they write the material and evaluate that product before it is finalized. My practicum will largely be a continuation of the events from the past 3 years (4 summers). I will be working within my classroom, Burke High School and the OPS district.

According to the Nebraska Department of Education 45% of all teachers in OPS have Master's Degrees with an average of 11 years teaching experience. Science teachers are reported as 99% NCLB Qualified, while only 81% are endorsed in the area they teach (the minimum allowed by state accreditation requirements). There have been a number of retirees across the district, including Burke, in Science over the past three years opening the staff up to a younger assembly of teachers. This has proven to be positive and challenging at the same time. Younger teachers approach the work with higher energy and fresh ideas than those nearing retirement, however they are also realizing that the education field is not as straightforward as their undergraduate experiences suggested and the challenges and changes they face cause frustrations and resistance. There has also been friction when newer teachers try to 'educated' more tenured teachers about how great the things they learned about are – often the experienced teachers have been around long enough to see trends come and go and come back again in education. In my role as a teacher leader for the district science department I need to be able to communicate the importance of following this curriculum outline to all teachers, new and tenured, as well as discuss with administrators how they can support teachers and encourage adherence

to the standards within the curriculum. This communication and encouragement is equally important to the development of the material itself, without these components the material may never be used.

One of the goals and benefits of the curriculum development at the district level has been an alignment of curriculum from school to school and class to class across the district. This has made transitions for our mobile population simpler; it has also made the change to Standards Based Grading (SBG) slightly easier. As time progresses from the initial introduction of the concept based units to staff (I have personal experience with science but other core content areas have undergone similar processes) the acceptance and embracing of the materials in increasing. Teachers teaching the Physical Science course and new teachers seem to appreciate the efforts most because they actually have to use the material to determine what they need to cover; this gratitude is leading them to apply the materials in their other courses.

Chapter 3 – Research and Literature Review

Standards based education is not a new concept, although it has gained ground again since No Child Left Behind (NCLB). The adoption of the Common Core Standards in 45 states and the District of Columbia (Phillips & Wong, 2012) has led to a nationwide effort to create curriculum aligned with these standards as well as State and Federal content standards. The process is truly an effort as teacher resources can be difficult to find and most districts are resulting to creating their own, at their expense. McGraw-Hill is working to meet the standards by writing new reading programs (Gewertz, 2012) and other publishers are not far behind. Additionally a number of other education think tanks are working to make resources available and easy to locate for teachers. Dorothy Strickland (2012) points out that the Common Core standards do not tell a teacher how to teach, they provide a “shared and consistent vision of what students should know and be able to do”.

Childre (2009) discusses the struggle in education to "facilitate understanding, retention and generalization" going on to suggest a required paradigm shift where textbooks no longer define curriculum but are one of many teaching tools utilized. Strickland (2012) suggests that effective curriculums delineate for teachers the whole spectrum of content, the nature of advanced work, possible interventions students may need and support for ELL and special needs students. Again she is not suggesting that curriculum tell teachers how to teach but provide a "shared vision of expectations with multiple pathways for attaining them" (Strickland, 2012). Curriculum is subject to the interpretation of the teacher and there for will vary from the developed curricula. Morey Schwartz (2006) discusses curriculum receivers (students) and curriculum users (teachers) and how curriculum writers can create more effective materials if they write it for the teachers. Teachers need to be considered the curriculum receivers; it should engage and even educate teachers and in turn they will be motivated to learn, "for when the teacher is learning, so too are the students." (Schwartz, 2006).

Lynn Erikson consulted with OPS following their decision to move toward concept based curriculums. In her training sessions she promotes her format, which OPS used and modified to suit our particular needs, which favors a backward planning style approach. Backward planning "focuses on learning outcomes, and standards and the assessments for accomplishing those standards. These assessments then guide the development of the learning activities" (Childre, 2009). Standards are the learning goals outline exactly what a student should know at the end of a unit of study. Curriculum outlines the scaffolding of information and skills to help add depth to understanding. Teachers are still responsible for knowing their audience and tailoring lessons to suit their learning needs.

Goslin (2012) suggests that "a principal's modeling of behavior alone may not be enough to ignite and sustain change". From what I read and my experience the same can be said for curriculum leaders. "Leaders who use modeling understand that the real message is not "do as I do." Rather, it is "value what I value – believe what I believe" (Goslin, 2012). In order for curriculum to be effective

writers and leaders must do more than present the material and model how to implement it, they must motivate teachers to believe in the curriculum as they do. They must remind teachers to value learning by turning them into learners again so that they can in turn share that with their students.

> "When curriculum offers teachers the opportunity to rehearse the learning process themselves, prior to creating it, they in turn become part of that experience as it transpires in the classroom, and their students are privileged to experience learning in an inspiring and engaging fashion." (Schwartz, 2006)

Chapter 4 – Plan of Action

My Practicum Mentor will be Christina Elf; Ms. Elf is the Science Lead Teacher for OPS, she is the right hand of the district Science Curriculum Supervisor Chris Schaben. Mr. Schaben will also be overseeing my work throughout the practicum. Much of my practicum will be a continuation of the work that needs to be done with the curriculum development work I mentioned in the setting. Some of this will be completed on my own while other tasks I will complete along with Ms. Bird.

The original science curriculum documents were developed a year before the state of Nebraska adopted new state standards. Once those updates where made the state then adopted the Common Core Standards, integration of these standards is ongoing. I will be working to ensure that all science course curricula include the Common Core.

This year was the first year of the Nebraska State Assessment for Science, a standardized test which all juniors take. Ms. Elf asked the curriculum writing teams to develop and ongoing source of review to help students be prepared for the exam both in content and format, the result is a daily question in the format of the state exam targeting a standard assessed on the exam. I will be working with Ms. Bird to edit and ensure that all standards are covered for the question banks for Physical

Science and Biology. We will then be working to create a common question bank to be used in the junior level elective science classes.

This year I will be teaching two sections of Physical Science at Burke, so I will be using the new curriculum as well as evaluating it for any adjustments that need to be made. Being the first year that the course is offered it is a new course for all but the pilot teachers, many teachers are out of their comfort level so I will also be acting as a mentor to those teachers as well as collecting their feedback to assess for necessary adjustments to the curriculum.

The writing on the elective course concept based units continues. I will be mentoring the courses assigned to me as well as other writers who seek out my assistance. I will also be assisting with Curriculum Day sessions. Any further projects that Mr. Schaben or Ms. Elf direct my way will likely also become part of my practicum experience, furthermore my principal and building curriculum specialist are aware of my practicum and have suggested they may have 'experiences' for me over the course of the fall term.

While it may seem that my practicum lacks a focused issue or topic I believe that the experience I am about to undergo will provide a true look at what the role of Curriculum Specialist is. Curriculum leaders must not only develop curriculum, and lead others towards implementation of that curriculum; they must also work to improve student test scores, serve as administrators of standardized tests, mentor and at times evaluate teachers, in addition to anything else that their principals (or district administrators) ask of them.