Maps: Developing Critical Thinking Skills for Deaf Students in a Social Studies Curriculum

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Teaching and Learning: Bilingual Education (ASL-English)

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2010
The Thesis of Michael Joseph Boucher is approved, and it is acceptable
in quality and form for publication on microfilm and electronically:

Chair

University of California, San Diego
2010
Dedication

This thesis is dedicated to the following:

Romeo and Joan Boucher: If it was not for their love, support, and faith in me along with their acceptance of my Deaf identity, this thesis would not be even possible.

Ann Boucher: She will never be forgotten and in many ways her memory has pushed me to do my best in my life.
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ABSTRACT OF THE THESIS

Maps: Developing Critical Thinking Skills for Deaf Students in a Social Studies Curriculum

by

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Master of Arts in Teaching and Learning: Bilingual Education (ASL-English)

University of California, San Diego, 2010

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In Deaf classrooms, social studies instruction is usually conveyed via the banking approach instead the inquiry approach leaving students without opportunities to exercise their critical thinking skills. This curriculum addressed this problem by demonstrating how deaf students can be given opportunities to develop and use their critical thinking skills in social studies content using maps.
Learning activities in this curriculum designed with the following four goals in mind; support students in developing their critical thinking skills, foster students’ skills in reading, interpreting, and using maps, develop and use academic language associated with maps in both ASL and English, and encourage students to use the inquiry approach as a learning strategy.

This curriculum was field tested at a school for the deaf in a 5th grade classroom with seven deaf and hard of hearing students. Field notes, artifacts, and lesson assessments were used to evaluate the outcomes of the curriculum to determine whether if it was a success. The evaluation indicates that the curricular goals were successfully met. Students showed an effort to use their critical thinking skills while interacting with maps and associated graphical organizers and at the same time used academic language in both ASL and English. They also showed usage of the inquiry approach in seeking knowledge in the content area addressed.
I. INTRODUCTION

Traditionally, as per my observations, educators for the deaf tend to preoccupy themselves with teaching the famous “three Rs.” While writing, reading, and arithmetic are definitely important, we often forget other content areas such as science and social studies which are as equally as important. Students need to be exposed to cross-curriculum areas to develop their academic and critical thinking skills and to expand their background knowledge which can be applied toward to future learning. Without a solid background knowledge and critical thinking skills, our elementary students often will encounter many frustrations in their latter school years.

In today’s age of standardized testing, more and more educators are feeling the pressure to teach “basics” and reducing or abandoning instruction in content areas deemed not critical to perform well on standardized tests such as music, arts, physical education, and even social studies. This robs our students of opportunities to practice applying various academic skills across content areas and build up their skills in utilizing higher ordered thinking skills.

Hence, this is why I chose to do my thesis on critical thinking in the social studies area as opposite to the traditional “three Rs” approach. The vehicle to promote the development of critical thinking skills among my students is to teach maps and map skills.

My project did not abandon writing and reading in favor of social studies. In fact it applies writing and reading to social studies. I decided to approach this by teaching
map skills to students. Why map skills? Being able to read and interpret maps entails utilizing higher order thinking which is connected to critical thinking skills.

The phrase “critical thinking skills” is a very broad one. If you were to speak with different educators, it is entirely plausible that you will receive various answers as to what critical thinking skills means and what those look like. For the purpose of this thesis, I refer to the cognitive domain of the Bloom’s Taxonomy (1956) as a model of critical thinking skills and behaviors desired from students.

In 1956, Benjamin Bloom, an educational psychologist, proposed a system of classification of educational goals for educators to consider while developing their learning activities and curriculums. In the cognitive domain of the Taxonomy, Bloom divided into six groups cognitive goals educators should strive to seek to gain from their students: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Knowledge refers to the ability to demonstrate the knowledge of a content area. This often entails the ability to retrieve knowledge from the memory. Comprehension focuses on showing an understanding of ideas and facts by being able to translating, interpreting, and extrapolating those ideas and facts. Application concerns more about being able to use knowledge toward reaching a solution of a problem. Analysis demonstrates a greater in-depth understanding of the information at hand by being able to making analyses of those information such as making inferences and supporting those with evidence. Synthesis reflects an ability to combine knowledge from different sources into something new such as a project drawing upon prior knowledge, knowledge from a previous science learning activity, and information available at hand from the current learning activity. Evaluation is the ability to reach at the level of meta-cognition where
the individual is able to step back and examine the whole set of information in order to
determine whether it is valid or meets a set of criteria.

In many situations, educators often revolve their learning activities around the
knowledge and comprehension aspects of the Bloom’s Taxonomy (1956). While being
able to recall information and understand those is certainly important for students, they
also need opportunities to practice application, analysis, synthesis, and evaluating if they
are to strengthen their critical thinking abilities.

Hence, my goals for my curriculum are the following: (1) support students in
developing their critical thinking skills; (2) foster students’ skills in reading, interpreting,
and using maps; (3) develop and use academic language associated with maps in both
ASL and English; (4) and encourage students to use the inquiry approach as a learning
strategy.

In implementing this idea, I utilized the classic Bloom’s Taxonomy (1956) which
is strongly linked to critical thinking skills. This concept developed in 1950s is still very
much so valid today. According to researchers, students of a minority group (i.e. in this
case, deaf and perhaps an ethnic group), perform better in an environment in which they
feel safe and their needs respected (Aronson, 2004). Students also benefit from working
together and using each other as well as the teacher as a resource (Kohn, 1996). This is
why cooperative learning practices will be used in this approach.

In a classroom that implements the cooperative learning approach, one will find
students working in small groups toward a common goal. The group successes when
everybody benefits from the learning experience at hand. Students learn to work together
instead of competing against each other. However, there is individual accountability as
well to ensure everybody does contribute toward the group effort (Johnson, Johnson, & Holubec, 1993). An example would be students working together to draw a map of the school campus and using it to make a proposal for a new building or a soccer field.

It has been shown by sound research that students benefit the most when their learning is active (Bower, Lodbell, & Owens, 2005). This requires the curriculum to be student-centered and the teacher to act as a resource who also models various strategies and tools for students to use and apply in their own learning. It is necessary for the teacher to abandon the role of an authoritative figure who feeds students knowledge. Activities within my curriculum also promote multiple intelligences to include as many students into the learning process as possible.

Howard Gardner (1993), the widely recognized architect of the theory of multiple intelligence, argued that the intelligence itself has several components which are: visual-linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalist. In each individual those components are not always equal causing them to favor certain components above others which has major ramifications for their learning.

The Variable Threshold hypothesis (Cummins, 1996) plays a role in my efforts to develop students’ academic language in both ASL and English. In order to promote a student’s proficiency in using English in academic manner, it is necessary as per the hypothesis to build up the academic usage proficiency in ASL. This hypothesis is also one of reasons why this curriculum calls for the classroom to be an ASL-English bilingual environment for deaf students to maximize their learning. In order for me to
incorporate those ideas into a deaf classroom, it was crucial that I created an environment in which bilingual and multicultural education could take place.
II. NEED FOR BILINGUAL APPROACH

First, what is a bilingual person? Traditionally, a bilingual was viewed as a two monolinguals in one person. In other words, that person is fluent in two or more languages. The thinking about what does it means to be a bilingual has evolved over time to Grosjean’s (1992) definition. Grosjean contended that a person is a bilingual when there is a regular usage of two or more languages in daily doings. This does not necessarily mean a bilingual individual is fluent or native in both languages; it only means he or she is able to use two or more languages to communicate and interact with others. Also, using languages in the manner described above does not necessarily mean that our bilingual is literate in one or both languages.

What does that mean for us as educators of the deaf? The high percentage of deaf students in United States is bilinguals as defined by Grosjean. A large number of those students use American Sign Language (ASL) with varying levels of proficiency and often also use English again with varying levels of proficiency. Also, depending on certain factors such as parents’ background, some of them may use a third or more language such as Spanish or Tagalong. When we develop an educational program for the deaf, we need to consider all of the factors mentioned above.

These characteristics are based upon Jim Cummins’ proposed framework for educating minority students (Cummins, 1986) and various researches to be detailed in following paragraphs, pertaining to ASL and English bilingual practices. Any bilingual education program for the deaf and hard of hearing should strive for the following characteristics: (1) Incorporation of deaf students’ home culture and Deaf culture along with ASL which is their most accessible language; (2) promotion of collaborative
community participation; (3) integration of reciprocal interaction-oriented pedagogy; and (4) usage of advocacy-oriented assessment.

English Only programs such as Structured Immersion, Sheltered English, and Submersion Plus ESL are considered to be subtractive in nature. These English Only programs are to educate English Language Learners (ELL) in English language as rapidly as possible and get them into mainstreamed classes as soon as possible if they are not already fully immersed there (Crawford, 2004). This early exit mentality often results in negative consequences for those ELL students (Fillmore, 1991).

Lilly Wong Fillmore (1991) shared results from her No-Cost Study which found that students who are subjected to this approach often sacrifice their native language, severing connections between themselves and their home and family. Without a solid foundation in their native language, those ELL students rarely acquire a fluency in English resulting in them having poor language skills in both English and their native tongue. They are often left behind angry, bitter, and disconnected from their family (Fillmore, 1991).

Deaf students often find themselves in the same predicament. They often are born to parents who do not sign, creating a communication difficulty and a large majority often will not develop the capacity to speak English fluently and articulately. Deprived of a language foundation a deaf child often does not encounter a formal language until he or she starts school. Due to the tendency of education establishments to view deafness as something to be fixed and no language proficiency, many deaf ELL students often exit high school with writing abilities equivalent to a hearing 8 years old (Lane, 1999).
Bilingual programs such as transitional, late-exit, early-exit, two-way, and dual are additive in nature meaning ELL students in those programs actually are able to maintain their native language while at same time acquiring a second language (Crawford, 2004). According to a study (Montecel, et al., 2002), in a properly designed bilingual education program in an environment with all necessary components such as supportive leadership, safe and orderly school climate, positive linkages among teachers and administrators, strong professional development regarding bilingual education training, high degree of parental involvement, staff accountability, appropriate staff selection, community involvement, high academic expectations, and curriculum and instruction based on students’ culture, ELL students often can acquire fluency in both native language and second language and many of them do outperform English monolinguals in terms of academic achievement (Ramírez, 1991).

Stephen Krashen (1985) argued that language acquisition begins with comprehensible input. Comprehensible input is the presentation of language in a manner in which a person not fluent in that language can understand it (Crawford, 2004). Consider this example: lávese las manos. You may not know what this means and I certainly did not at the first. But after seeing it in restaurants’ and gas stations’ restrooms for so many times with its accompanying English words, “Wash your hands” on that sign on the wall reminding employees they are mandated to wash their hands before exiting the room, I now recognize those words.

In order to be able to utilize comprehensible input effectively in acquiring a second language, one has to have a strong foundation in one’s first language which would enable one to be able to bridge from the first language to the second language using
comprehensible input (Crawford, 2004). This is connected to Cummins’ (1996) interdependence hypothesis which says that if a person is fluent reader and writer in the first language, that person will be able to read and write in a second language as he or she learns that language via comprehensible input.

Instead of depriving deaf students of an accessible language, we should welcome and incorporate ASL into our education program. This does not mean viewing ASL as an educational tool. ASL is a language in its own right and it will be respected as such. Does this mean English is now out of the picture? No. We will strive for ASL and English bilingual programs in which both languages are respected as an equal. In doing so, we will be creating an additive educational program in which students are free to express themselves in ASL and/or English.

By using ASL as the primary language of instruction in the classroom, we are making content of various academic information accessible to students. From there, we can make connections to English via reciprocal interaction-oriented pedagogical strategies and promote English acquisition along with ASL acquisition. This is made possible by making comprehensible input available to students via using ASL, realia, and specific bilingual strategies.

As Cummins (1996) stated regarding the interdependence hypothesis, using a minority language is effective in helping students acquiring the ability to use that minority language in the academic environment and this ability will transfer to the majority language and help students acquire the majority language as long as there is sufficient exposure and motivation to do so (Cummins, 1986). In our case, ASL is the
minority language which will help students acquire the majority language which is English.

Bilingualism is not enough – it is important that we incorporate multiculturalism in our classroom. Most of the time in deaf education, the power and decision-making often lie in hands of the dominant group – the hearing educators and administrators who often are of white European descent. Students themselves are of the minority or the dominated group – the deaf and many of them come from minority ethnic groups as well.

While often well-intended, there are underlying social forces at play throughout our schools which influences how members of the dominant group interact with those of the minority groups. By disregarding the Deaf culture and minority cultures in the classroom, the school is creating a sense of bicultural ambivalence among students of minority groups. Bicultural ambivalence refers to a sense of lack of cultural identity or loss of a sense of being or place in the community (Cummins, 1986).

Ogbu (1978) discussed the idea of the caste system within our schools. Due to the tendency of certain minority groups not doing well academically, attitudes within the system start to develop in which those groups are regarded as inferior due to economic or social issues leading to the perceptive that it is inevitable that students from those minorities probably will fail academically. This perceptive becomes more and more accepted by the minority groups themselves as they move throughout the school system (Cummins, 1986) which becomes something of self-fulfilled prophecy for them.

Cummins and Tikunoff (1983) demonstrated that students who develop a strong sense of cultural identity and are empowered are more likely to perform well academically while those who are not tended not do well academically. When teachers
take time and effort to incorporate various cultures and heritages of their students into the classroom, students often feel empowered and more motivated to success academically. (Cummins, 1986)

Biculturalism is not enough because while our students are deaf, many of them come from ethnic minority groups such as African-Americans, Latinos, and Filipinos which traditionally are regarded as not high academically performing groups. Deaf students from ethnic minority groups encounter the challenge of being deaf and of being associated with a group perceived as low-performing academically. While it is important for us to bring in Deaf culture into the classroom, their home culture also needs to be respected and celebrated as well. Hence, the reason why I encourage the educational community to consider incorporating multiculturalism into their classrooms.

One way we can build multiculturalism in our classrooms is by encouraging community participation. One of characteristics attributed to hearing parents of deaf children, especially if they are also of an ethnic minority, is that they do not care or do not involve themselves in their child’s education. Ramsey (2000) noted this phenomenon in her research regarding educators and their attitude toward parents and deaf students of Mexican heritage. The problem is not parents’ lack of interest or support; it is due to the lack of access to information and resources due to cultural and linguistic barriers erected by the school system (Cummins, 1986).

When educators take time and effort to create collaboration between schools and themselves with the community and parents, students will reap the benefits. When they see their parents involved and engaged, their academic performance often improves and behavior issues are reduced (Cummins, 1986).
One of crucial cornerstones of what an effective ASL-English bilingual-multicultural program is the usage of reciprocal interaction. Instead of viewing students as empty vessels to be filled with information and knowledge, educators view students as trustworthy partners who want and are capable of learning. Teaching which promotes active learning as opposed to passive learning is one part of reciprocal interaction. Students best learn through interactions with their peers and adults across all areas of the curriculum (Cummins, 1986).

It is also important to build an effective literary program in all areas of literacy such as talking, listening, signing, reading, and writing are encouraged and incorporated. First, students are exposed to huge amount of literature. This includes all types of literature ranging from stories, fables, and mythology to non-fiction, biographies, and newspapers. It is also crucial to recognize that literature exists and can be applied to all academic contents, thus literary works can be taught across the board in any subject area including social studies (French, 1999).

There are many different strategies in which we can use to teach ASL and English. ASL literature can and should be used and taught in the program. This will help to reduce bicultural ambivalence on the students’ part and empower them while at the same time develop their ASL abilities which will contribute toward their English acquisition. While studying ASL literature, educators can make connections to English in many ways. For instance, English words can be taught via using fingerspelling, mime, and “chaining” (Humphries and MacDougall, 1999).

Humphries and MacDougall (1999) observed the chaining technique among educators especially those who were Deaf themselves. Basically, it was a way for an
educator to making connection between different types of texts such as a sign, a fingerspelled word, or a printed word and it is also a way to make explicit to students the equivalencies between ASL and English.

There are many different ways for deaf students to learn ASL in conjunction with English. Students can tell or retell a story in ASL then later write the same story in English (Perez, 2004). Language Experience Approach (LEA) activities can be used to have students share their experience in ASL which can be made into a book written in English and connected to pictures of their experience (Whitesell, 1999). Those activities can be used to teach the writing process, characteristics of a book, and concept of print among others.

Deaf students are not a homogenous group of people. They come to school with various degrees of language development in ASL, English, and home language along with various cognitive or developmental needs such as ADHD and learning disabilities. It is imperative that educators are prepared with various strategies to meet their needs. Specially Designed Academic Instruction in English (SDAIE) and total physical response (TPR) strategies can be used to help provide comprehensible input and to assist in language development. Graphic organizers can also help to clarify complicated and abstract concepts.

Deaf students are often subjected to various forms of assessments. Most standardized assessments are used to find out what is “wrong” with a student (Cummins, 1986) and this can result in devastating consequences for a deaf child especially if he or she was assessed in an inappropriate way using flawed tools. At the time of this writing, it is the conclusion of the author that there are no standardized assessment completely
appropriate for the deaf due to lack of reasonable norms and/or protocols which only result in not measuring what those assessments are supposed to measure due to language and/or cultural issues (Lane, Hoffmeister, & Bahan, 1996).

Instead of relying upon inherently flawed standardized assessments which will only serve to disable deaf students, educators should strive to use alternative assessments which will enable them to see a deaf student as an individual with strengths and weaknesses, interests and disliking, and in other word – a human being. One example is the Learning Record which is a combination of an observational study of a student across a period of time, series of interviews with student and caretakers, and assessing of ASL, reading, writing, and Oral English development (Barr, Craig, Fisette, & Syverson, 1999). Furthermore, the Learning Record has been adapted and field-tested with Deaf students (Humphries & Allen, 2008).

Alternative assessments do not have to be limited to the Learning Record – there are many others. For instance, to assess cognition or understanding of a content area, performance assessment can be used. After competing or during studying a unit, students may be asked to perform an activity or complete a project which covers what was taught and modeled. The educator can then measure how much a student understood by how he or she completed a task he or she was asked to perform (O’Malley & Chamot, 1994).

In summary, I have demonstrated how Cummins’ framework can be applied toward the deaf education. Deaf culture, home culture, and ASL need to be brought into the classroom and incorporated into the pedagogy along with written and if feasible, Oral English. The community along with families becomes a regular component of the classroom exposing students to deaf role models of their home culture and empowering
parents with information and resources. The reciprocal interaction oriented pedagogy includes an effective literary program of active learning of making responses and reflecting upon literature which are connected to all academic content areas. Educators are sensitive to their students’ individual needs and will modify their teaching accordingly. Proven effective teaching strategies for making connections between ASL and English need to be used such as chaining (Humphries, 1999). Holistic alternative assessments which enable educators to look at students as human beings will be preferred over disabling standardized assessments.

When deaf students are in a learning environment in which they feel safe to be themselves, to be able to express themselves via their own unique blend of deaf and ethnic cultures, and are able to work with teachers who believe in their desire and capability to learn, they are able to rise to the challenge of developing cognitive skills necessary for higher-ordered thinking.
III. ASSESSMENT OF NEED

For a long time many educators of the deaf have often expressed concerns or even dismay over students’ “apparent lack” of academic skills necessary to perform well in a school environment. Poor or lack of usage of critical thinking skills were often mentioned. This pattern was observed by me during my years of teaching with an emergency credential and fellow education professionals’ observations.

Throughout my years of experience working with deaf youth in various capacities such as a teacher, a community health educator, and as a college recruiter, I have noted that not many students appear to be using critical thinking skills and respond more readily to factual and “yes or no” questions. When asked a Socratic question, many students often become frustrated leading to a common response – “I do not know!” Socratic questioning is an inquiry-based method in which a student’s question is answered with a question to encourage them to examine their question on their own. It is an excellent tool to help students exercise their thinking skills as categorized by the Bloom’s Taxonomy such as analysis and evaluation.

My observations remain consistent throughout my two years of teaching high school students at a deaf residential school. They preferred to answer questions requiring factual information or a yes or no response over questions requiring a more in-depth thinking or making a connection to the discussion at hand. For instance during a discussion on Golding’s Lord of the Flies, if I was to ask what did Simon encounter in the jungle after fleeing the tribe – students tend to not have any problem answering that he met the Beast or the severed head of a pig which was explicitly mentioned in the novel. However, when I tried to coax students into discussing what the Beast represents or
trying to encourage students to find schema connections between themselves and what they have been reading, students are not as responsive and demonstrated difficulties in doing so.

Those students who made attempt at formulating a response often act with hesitancy and reluctance to make mistakes in front of their peers even though technically there was no right or wrong answers for those types of questions. Based on my observations, many deaf students find comfort in factual and ‘yes or no’ questions and do not find excitement or pleasure in answering open-ended questions.

It is generally agreed among the general educational community that critical thinking skills are imperative for students in order to perform well academically and become a productive citizen. The California State Board of Education (2007) in its Content Standards calls for students to be able to do the following tasks by the time they exit elementary school:

Chronological and Spatial Thinking

1. Students place key events and people of the historical era they are studying in a chronological sequence and within a spatial context; they interpret time lines.
2. Students correctly apply terms related to time, including past, present, future, decade, century, and generation.
3. Students explain how the present is connected to the past, identifying both similarities and differences between the two, and how some things change over time and some things stay the same.
4. Students use map and globe skills to determine the absolute locations of places and interpret information available through a map's or globe's legend, scale, and symbolic representations.
5. Students judge the significance of the relative location of a place (e.g., proximity to a harbor, on trade routes) and analyze how relative advantages or disadvantages can change over time.

Research, Evidence, and Point of View
1. Students differentiate between primary and secondary sources.
2. Students pose relevant questions about events they encounter in historical documents, eyewitness accounts, oral histories, letters, diaries, artifacts, photographs, maps, artworks, and architecture.
3. Students distinguish fact from fiction by comparing documentary sources on historical figures and events with fictionalized characters and events.

**Historical Interpretation**

1. Students summarize the key events of the era they are studying and explain the historical contexts of those events.
2. Students identify the human and physical characteristics of the places they are studying and explain how those features form the unique character of those places.
3. Students identify and interpret the multiple causes and effects of historical events.
4. Students conduct cost-benefit analyses of historical and current events.

Since the school where I conducted my curriculum was located in the Commonwealth of Massachusetts, it became my obligation as a teacher to research Massachusetts’ content standards to ensure that I am teaching to the state’s expectations of what will be taught in their classrooms. Massachusetts Department of Education (2003) also explained in their Curriculum Framework a need to promote critical thinking in our students in order to preserve and maintain our democratic style of governing. As Thomas Jefferson said, the purpose of education is “…to enable every man to judge for himself what will secure or endanger his freedom.” The purpose of social studies is to give students a foundation of knowledge and critical thinking skills in order to enable them to become good citizens who can think critically about what are being debated throughout public forums as opposite to following passively what the government tells them.

With the increase in the emphasis on standardized testing, more and more elementary schools has been putting more focus of the classroom instruction time on
reading, writing, and math. Social studies is one of many content areas whose allocated instruction time has been reduced or even eliminated. This leads to a narrow curriculum and only serves to encourage teachers to stay with the banking model of pedagogy. When teachers are teaching to the test, students are not being exposed to a broad education crossing various content areas and not being given opportunities to practice critical thinking deemed necessary for maintaining the American democracy.

A project the “New Millennium Project” sponsored by the National Associations of Secretaries of State found that the civic engagement of 18 years to 24 years old Americans have been declining – only 20% voted in 1998. University of California, Los Angeles’ annual Freshman Study also concurs. The New Millennium Project also found that students are not being prepared by the school system with basic skills and information necessary for voting. One of major reasons for this is due to the fact the instruction time for social studies has been reduced or removed in those days of greater emphasis on reading, writing, and math (Vail, K. 2002).

One of four suggestions made by Vail’s article to help bolster the civics education, social studies, and history was to bring back critical thinking into the classroom. When students are exposed to critical thinking, they learn how to argue and create positions based on facts and also how to make intelligent decisions. Being able to make intelligent decisions is one of most important aspects of being a voter in a healthy democracy.
Furthermore, according to Browne and Keeley (2007) critical thinking skills play a role in our daily lives. In this age of information, the amount of information available to us increases at an exponential rate which can be overwhelming for many of us. We often turn to experts in their own specialized areas for advice but many experts often give conflicting advice. It is our critical thinking skills that enable us to filter various advices and information and choose what is the most appropriate for our needs. As consumers in our society, we are constantly approached by persons who may or may not have our best interests in mind leading to the need for us to look at what are being proposed in a critical way.

The other option is to passively accept others’ opinions and make those your own. This carries an inherent risk for deaf people in the society whose culture and mindset do not always agree with theirs. As a minority, the Deaf people are subjected to what the general society of the majority thinks is for the best for everybody. The need for strong critical thinking skills is greater for a Deaf person who has to navigate throughout a society which may does not always understand what his or her need as a deaf person is.

I will never forget one day during my teaching experience in the computer lab, several high school students asked me what does “this” or “that” means – those questions were connected to reading and interpreting maps in their social studies textbooks. I was astonished at this discovery and out of curiosity I approached one of social studies teachers regarding my observation. She clarified upon my observation that it was not limited to a handful of students – a high percentage of students in her sophomore World Civilizations courses had to be taught on how to read and interpret maps. I decided to
expand my inquiry and asked other social studies teachers at that school along with few others – responses I received were that they felt students were coming into high school with inadequate or lack of map skills.

Maps play an important in our daily lives, even more so than fifty years ago, especially with greater access to mapping technology such as GPS and Google Earth (Bednarz, Acheson, & Bednarz, 2006). Even newspapers are using maps more frequent than before and advances in Internet programming enable greater usage of maps throughout various websites. Yet a study conducted by National Assessment of Educational Progress found that students were exiting secondary education programs with poor or no map skills, leaving them less prepared to function in a world where maps’ role in the daily life is growing (Bednarz, Acheson, & Bednarz, 2006).

Bednarz, Ascheson, and Bednarz (2006) conducted a survey among high school geography and social studies teachers all across the country and their conclusions were despite those teachers’ statements of high expectations and standards pertaining to map skills they were barely scratching the surface of map skills with their instructional approaches.

Hence the reason I decided to develop a curriculum that combines critical thinking skills and map skills. Map skills entails using higher ordered thinking which is also needed for critical thinking skills. It is my hope that my students will complete the curriculum with strong foundation in how to use maps and are comfortable with using critical thinking strategies as part of their learning experience.
IV. REVIEW OF EXISTING MATERIALS AND CURRICULA

To see if this need has been addressed by a research or a curriculum, I set out to search for a social studies curriculum that focuses on working with deaf students on developing their critical thinking skills using maps in a bilingual classroom. Specific criteria I looked for was: (1) It was designed for social studies content area, (2) focused on pedagogical strategies pertaining to working with students to build and develop their critical thinking skills, and (3) utilizes pedagogical strategies geared toward promoting bilingualism among students.

The first place I visited was Clerc Center at Gallaudet University which houses both Kendall Demonstration Elementary School and Model Secondary School for the Deaf. While they provided a great amount of resources pertaining to deafness and bilingual approaches to pedagogy among others, there was nearly nothing for social studies content area aside from students’ works.

Gallaudet University Library was also a place I checked. A search through their index did not yield any results pertaining to social studies and critical thinking skills.

Next place I visited was Rochester Institute of Technology which also has resources related to Deaf Education. A search at NTID Deaf Index provided me with few readings about critical thinking, but those were mostly related to character education and technical content areas such as science and mathematics.

I also looked into several online resources. The first one was the Deaf Resource Library at www.deaflibrary.org. This clearinghouse site did not have any resources on social studies and critical thinking skills in a deaf classroom. Deaf Education:
Educational Enhancement for the Field of Deaf Education (www.deafed.net) was the next site I visited. While they did offer resources regarding literacy, science, and mathematics content areas, there was none for social studies.

One of last organizations related to deaf education I consulted with was the Council of American Instructors of the Deaf (CAID). While they did have resources for many content areas including science, mathematics, and deaf studies, like other places I searched, they did not have much to offer in the social studies content area.

Finally I turned to ASL and English Bilingual-Bicultural Program under University of California, San Diego's Education Studies department and its library of thesis done by previous graduate students. Most of theses were done in the language arts and ASL development areas, but there were three recent theses done in social studies content area. Elizabeth Wenzel (2006) did her thesis on working with deaf students' analysis skills of a specific historical period in a bilingual classroom. Amy Burchiel's (2004) thesis focused on working with deaf students on using their critical analysis skills to make connections between the past and today. Molly Dixon (2006) explored using social studies to implement social justice in a deaf bilingual classroom. While those theses are not completely focused on critical thinking skills, there are similar elements at play. Their research and work helped to show that the need I identified can be met in a deaf bilingual classroom.

My next step was to explore the general education and see if there is anything similar to what I was looking for. I paid a visit to Education Studies’ general education thesis library. Kimberly Poulter’s (1993) thesis agreed that schools are not doing enough to work with students to develop their critical thinking skills. Her curriculum focused on
using collaborative learning and modeling to support middle school aged students’ critical thinking skills development. It was also not designed with deaf ASL-English bilingual students in mind but I did find that her work echoes what is also needed in general education. One other critical difference was that she focused upon middle school aged students while I worked with elementary school aged students.

One other promising resource was William Roan’s (1991) thesis. He also concurred with me that social studies is often perceived by students as boring and not exciting. In order to make this content area more stimulating and exciting, he argued that critical thinking needs to be introduced into the equation. His suggested vehicle for doing so was to use cooperative learning strategies. On many levels there are similarities between his curriculum and mine but there are some substantial differences as well. The subject of his curriculum was California state history while mine explored using maps to teach critical thinking skills. Roan’s work helped to confirm the need for critical thinking skills to be embedded in social studies in general education classroom. While there were no deaf and hard of hearing students that participated in Roan’s work, it is plausible to apply similar strategies to deaf and hard of hearing ASL/English students.

I turned to one other resource to continue my search. This resource was Education Resources Information Center (ERIC), a self-proclaimed world’s largest digital library of educational literature hosted by United States Department of Education. Initially I had difficulties since the word ‘map’ could mean geographical maps, concept maps, or graphical organizing maps. However after persisting, I was able to find researches relevant to my curriculum.
A geographer argued in one research that maps are useful tool to develop spatial thinking which is one of multiple intelligences (Bednarz, Acheson, & Bednarz, 2006). She also explained that maps play more prominent role in our daily lives than before partially due to a rise in mapping technology such as GPS becoming more accessible and affordable to the average American but a research done by National Assessment of Educational Progress found that students are not being prepared sufficiently to be able to use maps to its maximum (Bednarz, Acheson, & Bednarz, 2006). In the Bednarz article, it is argued that children as young as four years old are capable of learning skills associated with reading and interpreting maps. They also stated that fourth graders should be able to make their own maps by the end of their academic year. Bednarz, Acheson, and Bednarz also made several suggestions on how to teach map skills in authentic and meaningful ways including using the inquiry approach. While not an actual curriculum, this research played an important role in developing my curriculum.

I had to ensure whether if there are curriculums out there available in the general education so I continued my search. I came across one teacher-developed curriculum for an elementary school class which seemed promising. It was a unit about Turkey and map skills was included into that unit along with one literary activity (Fitzhugh, 2002). However after a closer examination, there are several factors that rendered this curriculum impractical for my purposes although some aspects could be used. For instance, there are various activities planned along with map activities such as art and writing activities. There does not appear to be any usage of cooperative learning nor bilingual education strategies.
My search did not turn up any curriculum that explicitly incorporated teaching critical thinking skills using maps and map skills. I decided to turn to Teachers’ Curriculum Institute (TCI). They recently produced a new curriculum set called *Geography Alive!* (Hart, 2006). TCI has a reputation for strongly encouraging teachers to incorporate the theory of multiple intelligences into the classroom instruction and this curriculum set was no different. The set also promoted using the inquiry approach and cooperative learning strategies for learning map skills. While this supported my curriculum, *Geography Alive!* was geared toward middle and high school aged students. It also did not cover geographical content required by the Massachusetts’ social studies framework. Furthermore, it did not account for bilingual strategies necessary for a deaf ASL-English classroom. It was becoming clearer to me that I would need to devise my own curriculum although there are elements I could draw upon from resources I discovered.
V. RELEVANT RESEARCH AND LEARNING THEORIES

Due to extensive scholarship developed in the area of bilingualism, there are many research studies and learning theories from which one could draw upon to build a curriculum designed specifically for an ASL-English bilingual classroom. As I started to design my curriculum for this project, I decided to use the following theories as the foundation of the said curriculum: Variable Threshold Hypothesis, Theory of Multiple Intelligences, Inquiry Approach, and Cooperative Learning.

Variable Threshold Hypothesis

Dr. Jim Cummins (1996), a professor at University of Toronto who has done a great deal of scholarly work on language development of English Language Learners (ELL), proposed a hypothesis called Variable Threshold hypothesis. In order to understand this hypothesis, we will need to first examine the concepts of Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP). Basically, BICS is what we may know as ‘playground English’ – it is a group of skills necessary to be able to communicate in English on a social level. CALP refers to a group of language skills necessary to function in an academic environment. One may recognize this as ‘academic English.’ For example, an ELL child who can tell you all about his trip to Disneyland yet does not perform well in school probably does not have enough English fluency to achieve the level of CALP necessary to perform well academically. This is because the research has shown that it takes approximately 2 years to acquire BICS proficiency yet about 5 to 7 years to achieve the necessary competence in CALP (Cummins, 1996).
Now, according to Cummins, there are two thresholds in the first language development. The lower threshold is the minimum amount of CALP in first language to have a positive impact upon developing CALP for the second language. The higher threshold is the amount of first language CALP necessary to achieve cognitive benefits of bilingualism. When a person achieves the higher threshold, he will have what Cummins (1996) calls common “underlying proficiency.” By being fluent in a language, he has the foundation laid out for language skills in his brains and will be able to apply those skills toward second language acquisition via comprehensible input (Cummins, 1996).

In the other words, in order for one to acquire a second language, the person has to be fluent in his or her first language. How can being fluent in first language help acquiring second language? Cummins (1996) developed a framework showing a connection between the range of contextual support and degree of cognitive involvement. Figure 1 is a visual representation of the framework.

Context is things that help one to understand what is being said or taught such as gestures, facial expression, body movements, and so on. The degree of cognitive thinking is the amount of thinking required to digest what is being said or taught. Generally cognitively undemanding-context embedded (Box A) is the most easy form of communication since there are great deal of contextual clues and does not require a great deal of thinking on the listener’s part (Cummins, 1996). It is my argument that there is a
Figure 1: A framework showing the relationship between range of contextual support and degree of cognitive involvement as described by Cummins (1996).

great deal of comprehensible input in this mode of teaching that can be easily absorbed by ELL students.

The teaching that is cognitively demanding-context reduced (Box D) is considered the most difficult since there is not much contextual clues and demands a great deal of thinking on students’ part to understand what is being taught (Cummins, 1996). There is little amount of comprehensible input for students to work with unless they already have the sufficient amount of CALP to readily understand what is being said.

As students’ CALP abilities grow, the teacher moves to box B which is considered to be “context embedded-cognitively demanding.” While the thinking involved is increasingly more difficult and challenging, there are still a great deal of
contextual clues to better facilitate students’ understanding of what is being discussed at hand (Cummins, 1996).

As students’ cognitive skills become more developed, they should be encouraged to move to box D meaning a reduction in contextual clues. By then those students should have sufficient CALP to better grapple with the materials associated with box D and they will become closer to the higher level of language threshold of bilingual competence.

Figure 2 represents the path a teacher may consider when developing BICS and CALP.

![Diagram](image)

**Figure 2:** Recommended path for educators to consider when developing students’ BICS and CALP.

For educators in ASL-English bilingual classroom, it means they need to design their curriculum aimed at developing their students’ CALP in ASL and English. Greater CALP proficiency in ASL will contribute to developing CALP proficiency in English.
Theory of Multiple Intelligences

If you were to ask a gathering of friends to look back upon their experiences associated to learning and ask them to reflect upon what strategies helped them to learn and what did not help them, you will likely receive a wide assortment of varying answers. One person may respond that he learns the best by explaining to others, someone else may mention he or she prefers to see visual representations of what is being taught, and yet someone else might mention he or she learns best by doing as opposite to listening. While some people may dismiss these phenomena as differences among individuals’ personalities, Howard Gardner (1993) may disagree. Gardner believes that the intelligence as whole has several aspects to it influencing how a person learns. His theory of multiple intelligences describes eight different intelligences which are: visual-linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalist. Each of us have varying levels in some of or all intelligences and we often favor certain intelligences over others.

The theory of multiple intelligences is important in the ASL-English classroom especially in activities pertaining to assessments. Traditionally, students are asked to learn a unit on a historical period or event then they are subjected to pencil and paper forms of assessment. This has negative implications for deaf students. For instance pencil and paper assessments tend to benefit those who are stronger in visual-linguistic intelligence than others. When students who are not as developed in their visual-linguistic intelligence are being frustrated with poor assessment results, they can and often become withdrawn from the classroom learning. When you couple this with the fact that most of deaf students are also ELLs who are being subjected to pencil and paper
assessments written in English, it is no wonder those students may not see much incentive in becoming active learners in their classroom.

Instead of resorting to structuring their curriculum and assessment methods to favor a certain intelligence, teachers can take the advantage of the knowledge of multiple intelligences to design a curriculum that incorporates as many kinds of intelligences as possible and provide various assessment methods which gives each student an opportunity to demonstrate his or her learning using an intelligence he or she favors. When students know they are able to success by demonstrating their learning using their favored intelligence, their motivation to become more involved in their learning will increase.

**Inquiry Approach**

One main characteristic of critical thinking is to be able to ask oneself questions based on facts, prior experience, and what one knows and does not know (Nosich, G., 2001). Levstik and Barton’s (2001) definition of inquiry is a “process of asking meaningful questions, finding information, drawing conclusions, and reflecting on possible solutions…”

Human beings, especially children, are curious people. Parents with young children can attest to this with their constant flow of “Why?” questions. The elementary school is a good place to start encouraging students to use skills associated to the inquiry process and at same time capitalizes upon their natural curiosity. To critics who feel that elementary school-aged students are too young to learn such higher order thinking skill, Davis-Seader (2000) will disagree and reply that children already are thinking critically
and it is schools that stifle their critical thinking due to the tendency of teachers to resort to the banking model of education.

Paulo Freire (1993) defined the banking model as a long-term educational scenario where teachers are the one who determines the direction of the learning in their classrooms and students are depicted as passive and empty recipient of knowledge to be “deposited” with information by their teachers. Since this approach assumes students know nothing and that their learning lies primarily in their teachers, students’ critical thinking abilities are often stifled. Freire also argued this approach also enforces the oppression of the minority by the majority as students are systematically reduced to passive conformists.

When students find themselves playing an active role in the learning in the classroom and when the curriculum is designed to respond to their questions, they become engaged learners as opposite to passive learners (Kohn, 1996). Research has also shown that in deaf classrooms, one of characteristics of effective teachers is being able to engage students in the dialogic inquiry process (Singleton, J. and Morgan, D, 2006).

By designing the classroom to promote the inquiry approach, teachers are empowering their students to become more active in and responsible for their learning. They are also creating opportunities to depart away from the banking approach to the approach where students are encouraged to use their critical thinking skills.

**Cooperative Learning**

How can teachers incorporate the theory of multiple intelligences, variable threshold hypothesis, and the inquiry approach into the classroom? There are many
possible strategies and the one I used in this project is the strategy of cooperative learning.

The basic characteristic of cooperative learning is to have students work together in groups to reach a common goal instead of working against each other (Gibbs, 2001). When students are engaged in a cooperative learning activity, they are learning valuable teamwork and social skills which will benefit them in their future after their school years end. Since their groups consist of fellow classmates, they have a comfortable and safe environment to practice their critical thinking skills. Working in groups also gives them opportunities to use and practice language skills on each other which contribute to their CALP development in both ASL and English.

Cooperative learning activities also encourage students to become more involved in their own learning. The reason for this is each student in a group is delegated to a part of a common project and that project cannot be completed until each student does their part. There is an incentive for students to complete their part in order to maintain a good standing with fellow classmates.

By using this strategy, teachers have opportunities to implement the theory of multiple intelligences in the classroom. Group assignments or projects can be designed in such way there are tasks that can be done in various ways using different intelligences. Students themselves could negotiate with each other over which tasks they can perform or teachers may delegate those tasks in such way to promote group success (Bower & Lobdell, 2005).
Throughout a cooperative learning activity or at its conclusions, students can be asked to reflect upon their experiences and consider how they could have done their project differently. This is an exercise in critical thinking.

Deaf students are considered one of minority groups in United States thus it is reasonable to implement cooperative learning in classrooms for deaf and hard of hearing because there is research showing that cooperative learning strategies often benefit students of a minority background. Aronson (2004, p. 18) shows that “cooperative classroom structures in which students work interdependently typically produce immediate and dramatic gains in minority students’ grades, test scores, and engagement because such environments reduce competition, distrust, and stereotyping among students.” These same results are plausible in deaf and hard of hearing classroom.

In my project, variable threshold hypothesis, theory of multiple intelligences and inquiry approach are used to promote critical thinking skills. Cooperative learning strategies are used as a vehicle to implement those into the classroom.
VI. STRUCTURE AND FRAMEWORK OF CURRICULUM

The curriculum design is intended to be a resource for teachers interested in experimenting with it but at same remain flexible enough for them to adapt it to circumstances and needs unique to their classrooms. With the ultimate goal of encouraging students to use critical thinking skills in relation with social studies and map skills in mind, the learning activities are designed to scaffold students by gradually adding complexity to each step along the way; and also it is a goal of this curriculum to attempt to shift the control of the learning from the teacher to students themselves.

The time frame of the curriculum is aimed to three to five weeks long. There are three units divided by themes with their own goals. Within each unit, lessons are found with objectives designed to support the theme’s learning goals. Those objectives are backed up by state standards by both California and Massachusetts as dictated by their respective state entity pertaining to education.

Within each lesson, teachers will find suggestions for what materials they may want to use and what sort of preparation they might want to think about doing before implementing that lesson. Each lesson’s introduction is designed to pull students into that lesson by sparking their interest and motivate them to participate. Naturally, students vary across classrooms and schools so descriptions within the introduction part are suggestions and teachers should feel free to adjust as needed or desired.

Further into a lesson, the procedure section describes one suggested way of implementing that lesson. It is important to not forget to help students reconnect to the
lesson objectives in the closing of the lesson to make the experience more meaningful for them. A suggestion to do this is found in the closing section.

As always, it is crucial to assess students for their understanding so adjustments can be made for the following lesson as needed. Within each lesson description, a section on assessment will be found. Some lessons may have an extension section which contains alternative ideas should that particular lesson provide to be too simplistic for students. Those ideas may be used as assignments if wished.
VII. IMPLEMENTATION

The purpose of this section is to describe the implementation of Social Studies taught at the school site. It also describes changes the curriculum underwent to better accommodate the needs of the site and students.

I was notified that I will be teaching fifth grade at a private residential school. Prior to the arrival, I was unable to contact the coordinating teacher at the site to obtain a better feeling of what the classroom needs are due to logistics issues not discussed here. The curriculum was therefore designed to meet the site’s state standards for the fifth grade and at same time to be flexible to absorb any changes if there was a need.

Upon the arrival, I discovered that due to circumstances from two years before, teachers who had the group of students I taught decided to teach them fifth grade standards despite the fact they were fourth graders at that time. So the year I was at the site, the team teachers was teaching to fourth grade Social Studies standards.

The team teaching system at the site further complicated my situation. My coordinating teacher does not teach Social Studies, her team teacher partner does. So I found myself negotiating with a team teacher who was, understandingly, reluctant to transfer the Social Studies instruction to a student-teacher. The site is very strict regards to teachers teaching to the state standards. Once I explained how I had aligned with the state standards, the team teacher was willing to work with me and allowing me to take over social studies. It took some time for the teacher to transfer the session to me because she wanted to finish her unit she was currently teaching at the time of my arrival.

The state standardized exam and school policies played a huge factor in the time allocated to my Social Studies curriculum. During my time there from mid-March to
mid-May, a considerable chunk of my teaching placement was occupied by the standardized exam – approximately two and half weeks. Teachers valued their time with students to prepare them for the exam beforehand so that took away some of potential instructional time for the curriculum. Furthermore, the school policy dictated that on days of the exam, students are to have afternoons off as in no formal instruction.

There was a school policy determining what content area could be taught during specific times of day. Under this policy, time allocated to Social Studies instruction was delegated to the afternoon.

When the spring break, school assemblies, and field trips are factored in, I did not receive much instructional time to implement the Social Studies curriculum. Due to the difference in the state standards, most of the original curriculum I designed was not used. However, I redesigned the curriculum to meet the needs of the students at this grade level. It was also heavily influenced by compromises made with the team teacher who was responsible for Social Studies content area. This section will focus on the actual lessons of the modified curriculum that was used at the site.

The site is a private residential school run by a non-profit organization. Elementary school students are not allowed to stay at school dormitories so they all are commuters. The site declares itself as a bicultural and bilingual school and this can be seen throughout every aspect of the school life there. ASL is respected as a language and Deaf cultural values are cherished. Teachers and other staff members sign ASL all the time even if both signers present are hearing. Students are encouraged to read before signing out the sentence or paragraph as opposing to signing out word for word. The
site’s version of speech therapy incorporates various communicating strategies such as gesturing and writing if a Deaf student is communicating with a non-signer.

The classroom was fifth grade with seven students. Their backgrounds were diverse. Three were from deaf signing parents. Fascinating enough, one of the Deaf parents were from two different Eastern European countries so the student was exposed to three sign languages at home. Out of four remaining students, one did not have at least one parental figure who signs. Five are Caucasion, but one has Deaf parents who recently immigrated to the States from Eastern Europe. One is an Asian who was adopted by a Deaf single mother at the age of 2 or 3 years old and managed to quickly acquire English and ASL. One is an African-American who lives with a non-signing great aunt. Three are females and four are males.

Most of students’ English language development is on or nearly grade level. Two students are considered delayed in terms of English language development and read at third grade level. One other student was above the grade level. While this person was biologically a fourth grader, he or she was considered to read and write at sixth grade.

**Table 1:** Description of Students’ Grade Level English Language Development

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<th>Students</th>
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Students’ ASL development parallels their English language development. Two students who are at third grade reading level were also delayed in their ASL development while others are either at age-appropriate developmental levels or close to it.

Six students has been enrolled at this site since either kindergarten or parent-infant program provided there while one started at the site in the second grade. One of six students who has been at this site their entire academic life up at this point was placed into a type of “special needs” (for lack of better term) program and was recently transferred into the academic program during fourth grade. While very capable and bright, this individual internalized self-esteem issues which stemmed from being perceived as “behind” compared to his classroom peers due to not having the same background foundation created after years of academic instruction he did not have an opportunity to undergo due to his placement.

The scheduling of content area instructions has been already established by the fifth grade teaching team so when I took over Social Studies I was obligated to follow their schedule. Social Studies instruction occurs three times a week – Tuesdays, Wednesdays, and Thursdays. The time allocated was 40 minutes per session and every session took place in the afternoon after lunch or gym. On Wednesdays and Thursdays, Social Studies was the very last content area for students before the final dismissal. Throughout Social Studies time allocation, two students are frequently pulled out for speech therapy and physical therapy. One student had to leave early everyday to take a prescribed medication at the nurse’s office. One other student’s parent often came in to pick up the child before the final bell. This had an adverse impact upon the instructional time made available to my curriculum.
Immediately after my arrival at the site, I began to observe students’ learning regarding maps and critical thinking. One of first things I noticed immediately about the classroom setting and instructional practices was that they had a regular “Current Events” session during Wednesdays mornings. Each student was expected to bring in a current event item to share with the class. They were also expected to bring along the original newspaper clipping and a completed worksheet. The “Current Events” worksheet calls for whether if the news was a local, national, or global issue; where it occurred or what location it concerned; and a global map where students was to color in the location of the relevant current event. Throughout their brief individual presentations, they would merely describe the news item and rarely attempted to make connections between the news item and themselves, their community, or the world.

The team teacher who regularly teaches Social Studies had students maintain their individual Social Studies binders which I reviewed. Based on my observations of students and conversations with team teachers, it was obvious that students did have some familiarity with maps. Since maps play a major role in the Social Studies section of the state standardized exam, the team teacher often tried to expose students to maps although she did not necessarily cover maps themselves in great details. My observations reinforced the idea of a need for a pre-teaching assessment.

Lesson 1.1: K/W/L

By the time I was able to begin my curriculum, I had been teaching students in other content areas for approximately three weeks or more thus I had a better sense of students academic performance and language proficiency. Also I was becoming more proficient in using the classroom’s SMART Board. Knowing that students enjoy
working with technology and due to the ease of retrieving and displaying files on the Board, I decided this device would play a main role in my improvised curriculum.

The goal of this lesson was to introduce students to the curriculum and at the same time determine what the starting point should be for next lesson. So I explained to students that we would be learning about maps and I wanted to find out what they already knew about maps.

As expected, students love to share what they know about a subject. All students were participating during the lesson by contributing toward the class list of what they already knew. For the most part the class went smoothly aside few moments of silliness on one student’s part who insisted on naming every single landform he knew. Below is an excerpt from the classroom discussion during the learning activity as students were contributing toward the “I Know” display on the SMART Board.

RB: Maps show states and countries…
MB: And roads and cities…
LA: Also oceans, lakes, and rivers.
Upon the prompt where I asked about what features maps have:
KL: Miles
LA: North, South, East, West
NS: Coordinates, you know… longitude and… latitude
Unfortunately we became so engrossed into discussing what we knew about maps I did not realize time was running out therefore we did not have time to go into the “What We Want To Learn” section. It was a reminder to me while it is a pleasure to engage students in a stimulating discussion, it is also my responsibility to monitor our usage of the allocated time to ensure we do have time to cover what we need to cover.
Based on the students prior knowledge I decided to move ahead into the curriculum. However, after analyzing the experience, I felt that I did not know enough about what students were not familiar with which leads me to the next lesson.

**Lesson 1.1b: Individual Survey**

Due to what I saw during the previous lesson, I developed a more individualized pre-teaching assessment. After discussing what we did the day before, I distributed a pre-test. It was fascinating how different results turned out. As predicted, not everybody was enthusiastic about doing “paper work.” It is more enjoyable just talking about what you know and what you want to learn instead of writing it down.

Each question was signed to give everybody a chance to see the ASL version. The coordination of having students looking at me for signing a question and having them working was interesting. Some students like to work ahead, while others were not as fast. Generally, I do not mind having students working at their own pace, but I knew that students who finished early would become restless. Hence, it was imperative that I have back-up plans for those students who are prone to progress faster as compared to their peers. It is a skill I hope to improve over time and as I gain more experience as a teacher.

Because the time allocated to social studies was in the afternoon when students tended to be more tired and they had just arrived from an unstructured time frame of approximately 90 minutes (lunch, recess, and gym). Often there were personal issues that transferred from unstructured activities into the classroom. Today was no exception – two students came into class continuing their personal argument. Because this was a
small classroom of seven students, it was easy for one student’s mood to affect others so I had to act quickly.

I made a mistake – I asked a student to switch with one other student so two arguing students who normally sit next to each other would be separated. There was some resistance which led to certain upset feelings. I saw this as a combination of classroom management issues and the issue of knowing my students. I did not realize how attached they were to their routine seatings. Reflecting upon this experience, I realized I should have asked two arguing students to bring in extra desks to be seated at the opposing ends of the desk row. Later when there was time I would have had a discussion with them to help resolve their conflict.

All of those personal conflicts were causing delays and nearly every student was not accustomed to the whole concept of pre-testing. They kept asking for right answers and got confused when I explained that this is just to find out what they know. I am fairly certain that they have done pre-testing before and I probably could have framed the lesson activity in a way more familiar to them.

The whole experience came out alright but I ended the session with two things I’ve learned. While creating the survey I forgot to check the font size which was set to size 12. A student gently asked me to please in future make the font size bigger. This was a reminder for me to mind my font size in future for better readability for my students. Second thing was that being able to participate in a formal assessment is a para-academic skill in itself, so it may not be always the best choice. Next time, I’ll need to be more creative about doing this on an individual basis in a group setting at same time.

Lesson 2.1: Place Vocabulary Survey
The class did not start off well due to personal issues being brought into the classroom from students’ unstructured time during lunch and recess. There was constant bickering and the cooperating teacher stressed that if this situation was to occur, it is best for me to put aside the lesson and discuss with students how to handle their personal issues (as versus to letting it influence the class learning) and our (the teachers’) expectations.

When the environment was calmed enough for us to proceed, I asked students to try their best to fill out a map of North America using a list of place vocabulary I provided. The response was mixed – some students went to work immediately while some did not understand what I was asking them to do. I explained that they should do their best and fill out the map and that it was okay if they did not know correct locations.

This activity was done at my cooperating teacher’s suggestion – she strongly recommended that I have students try fill out a map to see how much they know of that particular place (in this situation, North America). This enabled me to find out their place vocabulary knowledge. Most students did very well and some insisted on adding more places that were not listed.

After a brief discussion of how they knew the locations on the map of North America making connections to previous social studies lessons, maps they had see before, I explained we would be studying Mexico. I asked them to do the same task with a blank map of Mexico. This time the process went faster now that they all understood what I was asking. As expected, not many students were familiar with Mexico’s place vocabulary other than one student who regularly visited that country because he had a relative living there.
We discussed how we knew where was on the Mexico map as we did with the North America map. We also briefly discussed about what we would like to learn about Mexico in last few minutes. Students seemed genuinely interested in learning about a new country especially one exotic to New Englanders as Mexico.

**Lesson 2.2: Mexico DVD Lesson**

The class viewed a captioned DVD of Mexico’s geography. While there was nothing wrong with using a DVD as an instructional tool, I was aware of possible language issues due to the DVD was captioned in English. I wanted a lesson activity that was more kinesistic and hands-on. Nevertheless, the purpose of the lesson was to expose them to Mexico’s geography. I wanted them to actively absorb what they was going to view instead of sitting there passively, so I asked them to take out a lined paper and fold it into four squares. Each square represent one of the following: Landforms, Products, Resources, and Interesting Facts. We briefly discussed each word and there was some confusion over Products and Resources, but most of them had some familiarity with those terms.

Throughout the video, students were asked to make a listing under each category to share with the entire class. The response was mixed. Some were positive about it and eager to do their best. One student who was having a bad day and came in late from a pull-out session refused to participate. One other complained – he was experiencing a language issue. I did my best to compensate by signing out the captionings and I allowed a classmate to work with him. I was glad to see that this classmate did not monopolize the work – the first student was involved and contributed.
Some of challenges – certain students kept asking me to pause the DVD or to rewind so they could catch what they missed. I occasionally paused at some key points where there was a lot of information to process and internalize for their categories or to catch up with interpreting the captions. I explained I preferred not to rewind because the purpose of the lesson was for everybody to work together. Therefore if a student did not catch something, perhaps somebody else would. One student did not want me to interpret captions to which I explained that everybody had different language needs and he did not have to watch me if he did not want to.

Next time, it would also be possible to split the class into groups with each group focusing on its own category. Some students seem rushed and stressed trying to filling out four categories.

After the DVD showing, we shared our responses and recorded those on the SMART Board. I let each student share one response per category so everybody were able to contribute to each category.

Responses regarding the Landform section:

LA: Mexico have a lot of mountains… Sierra mountains.

EB: There’s a desert made of volcanic ashes.

Teacher: Yes, anybody recall the name of that desert?

NS: Sonoran, something like that?

Teacher: That’s good, very close – it is Sonoran Desert. Amazing, it is made of volcanic ashes…

Responses regarding Products:

KL: Electronics
RB: Automobiles, they make those too

EB: They have forest too

Teacher: A product is something made by man. Is a forest something made by man?

EB: Well, people cut down trees for wood and they plant new trees in forests. Maybe wood?

Teacher: That’s good, yes, wood or lumber can be considered a product coming from a forest.

Based on the classroom discussion, I observed there was still some confusion regarding the difference between products and resources. For instance, we had a discussion regarding silver, we analyzed whether silver could be classified as a product or a resource since it is something that exists naturally yet, it is also something extracted from the earth and then refashioned into a form of silver for man’s use. It was a good discussion which showed that not everything is simple in terms of black and white and there are always going to be an area where students can present their cases.

Overall, the students did benefit from the DVD as demonstrated by their responses and their written lists. I appreciated their enthusiasm yet, at the same time I tried to explain that if they missed something, try not to worry about it since they are working together and it is likely someone else will capture the detail they wanted to record. They would not have any of it however and continued to insist on attempting to capture everything. I decided that later on when we viewed the Canada’s geography DVD, I would structure it a bit differently in which each student would have his or her own category or show the DVD in stages and check for comprehension.
Lesson 2.3: Mexico – Map Making

One of requirements expected by the team teacher was to test students on their place vocabulary knowledge of Mexico’s geography. I decided to have students make a map using a prepared list of place vocabulary derived from the Mexico DVD, and compare it to a real physical map of Mexico.

After blank maps were distributed, I had a physical map displayed on the SMART Board. I brought up a list of places I prepared with color coding and how it should be marked on the map. The list itself was covered and I displayed each line one at a time to encourage the class to work together at same pace.

Students enjoyed this activity very much – they were able to reproduce the map in their own way although within boundaries I set and they were encouraged to be creative. I also asked volunteers to come up to the physical map and show correct locations.

We discussed each location and what we knew about each location. I was impressed at how much students retained from the DVD. We also discussed how we knew where places were and the discussion went into how to use the map’s legend, grid system, and how they were making connections from the DVD to the map and to their maps they were drawing.

Sharing colored pencils was not an issue. I had learned from my previous teaching experience that I needed to be clear with my expectations when sharing classroom materials and stressing my expectations every time.

After the activity, I explained there would be a test on Mexico’s geography and they could use their maps as a study guide. I also offered blank maps for them to use as a
practice. We discussed how geography impacted Mexico’s climate and population especially Mexico City and its pollution problem.

By making this lesson activity a hand-on involving illustrating their blank political map of Mexico, I was hoping to help them absorb and memorize the place vocabulary which would be covered on the test in an enjoyable and fun way. It was also fascinating for me to view their final products and how different their maps were from each other. On one hand, one student took pains to decorate her map beautifully and in an aesthetically way. She also added certain touches which were not explicitly required such as labeling places and the places were not included on the list. On the other hand, while one other student met basic instructions, the quality of the “artwork” was sloppy and completed with the idea that “it is good enough.”

**Lesson 2.4: Mexico Manufacturing Centers**

Session 1

I was excited to teach this lesson because it involved incorporating a higher thinking skill as described by Bloom’s Taxonomy to analysis. I have found a map of Mexico’s manufacturing that showed its products and natural resources along with a graph depicting Mexico’s trading partners and what kind of products it exported. It also gave me an opportunity to teach how to read a map legend. What I was hoping to do with this lesson was to expose students to what Mexico produces, import, and export along with whose was her trading partners. Also, I wanted to convey that maps could be a tool to learn about a country either by itself or in conjunction with related graphs.
Students were curious what I had in store for them when they saw the map of Mexican manufacturing centers I displayed on the SMART Board. I asked them what they noticed to. They responded:

KL: It’s a map of Mexico

RB: Mexico City is the capital and it’s there (points to the correct location on the map)

EB: That box (pointing to the legend) says electronics goods, what’s that? LA: Wow, Mexico have a lot of oil. And, look, gas too (pointing to the Gulf coastal areas).

After a brief discussion of what we noticed, I explained that we would be examining the map and the graph that will teach us about what Mexico’s economy depends upon to maintain the country’s needs.

Initially, I found I had to do some modeling regarding how to read the map legend, and the students understood this concept fairly quickly therefore we started to interpret the information we saw on the map. I posed questions to encourage them to interpret such as why do they think Mexico chose certain places to be centers of producing certain products such as automobiles and electronic goods.

LA: I noticed something… (approaches the map and points to relevant locations) those automobile and electronic goods factories are here and here near Mexico City.

Teacher: That’s a great observation, can anybody think of reasons why they set it up that way?

NB: Mexico City is the capital, maybe they wanted those to be close to the capital?
NS: Maybe to make it easier to bring things to capital to sell?

Teacher: That’s a possible reason. Anything else? (a moment later) Anybody remember one unique characteristic of Mexico City?

EB: 20 million people lives there in Mexico City

Teacher: Yes. What does that have to do with factories?

(After a moment) KL: They need people to work in factories and Mexico City have a lot of people so they want factories near where there are a lot of people to get workers

Teacher: That’s one other possible reason. We don’t know for absolutely sure unless we research more on this but you all offered good educated possibilities based on what you saw and know about Mexico, excellent work!

To my pleasant surprise, getting the class to stay on the same pace was not of a big issue like it had been in a previous lesson. Having the class constantly discussing questions and sharing their responses combined with letting volunteers coming up to the map helped to engage the students and complete the task.

The classroom discussion was exciting and students seem to be truly enjoyed. I wanted to see where we were going with our discussion, so when the time was up, I felt it was worthwhile extending the lesson from one day to two days.

Session 2

First, I started off by having students briefly reviewing what we did during the previous session. We discussed what we learned from the map. Students also noticed that oil and natural gas were concentrated along the Gulf coast and that there were a lot of
producing centers near the United States border. We discussed their observations and it also was a perfect lead into looking at trading partners bar graphs.

Students came up with many good reasons for why there were producing centers near the border area. Some of their responses were partially related to the DVD they saw and some were from their prior knowledge. Responses such as: (1) maintaining friendship with United States, (2) US was a neighbor and it was easier to conduct business with than some other country on a distant continent, (3) and US was a large economic market in terms of population and it had sense for Mexico to want to take advantage of that market were mentioned.

I was initially concerned about the worksheet’s language – I decided I did not want to oversimplify the written English. I wanted to give students an exposure of what academic language looks like in English, but at the same time frame it in a context they were familiar with. Most of them were able to process the language and few requested ASL version.

We finished the activity and the students made good responses and inferences from the map and accompanying graphs. There were also good discussions demonstrating their ability to think critically.

**Mexico Test**

On the date, I conducted the place vocabulary test as per the team teacher’s request. I was nervous but overall students did very well. One student who did not do well may have been due to his self-esteem issue and factors from outside of the school influencing his academics. The cooperating teacher and I continued to try figure out how to best work with this student along with the behavioral specialist.
Due to time constraint and the compromise with the Social Studies team teacher, we moved on to Canada in order to fulfill one of Massachusetts’ standards requirement. Students did a pre-testing of Canada map using a list of locations I provided then we discussed what we knew about Canada.

Looking back, I did pre-testing of maps at the urging of the cooperating teacher, but as of now, I am not sure if pretests actually served a meaningful academic function. I could have pulled down a map of Canada instead and did an overall K/W/L of the country as a whole instead and found out more about what my students are familiar with and what they wanted to learn.

**Lesson 2.5: Canada DVD Lesson**

The format was similar to Mexico’s DVD lesson activity but instead, this time, I divided groups into heterogeneous grouping based on language ability. There were three groups, each one was responsible for a category along with interesting facts. One group covered Landforms, other one did Resources, and last one took over Products.

The feedback from students afterward was positive. They liked the new format and they appeared less pressured trying to fill out four categories simultaneously and their comments concur with my observations.

One of differences with this lesson compared to the Mexico one was students had more connections to Canada and more prior background regarding that particular country. It made sense after all since Canada was practically a neighbor up there and two of students are rabid hockey fans. They kept telling us about Canadian hockey and baseball teams. One student also told me she will be visiting Quebec this summer and she was more attentive when the DVD covered that province.
After the DVD viewing, we shared our lists and what we learned from the DVD. In contrast to previous lessons, the group was more focused at work. The reason for this is because I have learned to be explicit about what I want them to do in a group or pairing. Also, they have been doing group work throughout my time with them regardless if it was during a Social Studies or some other content area lesson so they have had practice. It was due to this experience that I learned it is actually possible to encourage students to adopt certain academic behaviors with time, patience, modeling, and constructive positive feedback.

**Lesson 2.6: Canada’s Provinces and Territories**

Behavioral issues emerged during the learning activity causing delays but we were able to process the activity in a reasonable amount of time.

Students made their own map of Canada and we used the time to discuss provinces and territories – how it was different from states in United States. We also made connections between provinces to the DVD, we viewed in the previous session.

One surprise emerged from implementing this lesson. It never occurred to me that the ability to discern one political body from another on a map was a skill to be learned. There were two examples of this skill during our class discussions.

One example was while we were talking about Nova Scotia which was a province which encompassed several islands a student insisted that each island was a province in their own right. His argument was that each land body had a black border, it meant those were provinces. Looking at the map, I can understand where he was coming from – the provincial borders were drawn in same manner as island coastal boundaries were. Fortunately, I knew that with their regular Social Studies teacher they already studied
United States so during the classroom discussion and revisiting the state of Michigan which covered two land masses separated by a body of water helped clarify the situation.

The other example was related to the province of Newfoundland and Labrador. Despite having “two” names and containing several land masses separated by body of water, it was actually one province. This province’s name caused some confusion and it took a quick visit to Wikipedia via SMART Board’s internet access to learn of the province’s historical background.

**Lesson 2.7: Specialized Maps**

I modified this lesson to use maps of Canada instead of Massachusetts, but otherwise it was virtually identical. The main purpose of the lesson was to fulfill one of Massachusetts’ state standards for fourth grade which was to have students become familiar with different types of maps.

At the beginning I was a bit nervous, I was not sure if I would be able to convey what I’d like students to do but we worked together and completed the activity. Students made good responses and observations to each map. For example, we discussed political, physical, climate, and population maps. Some of questions and observations brought up by students: (1) Political - Each province and territory has a capital; what’s that south of Alaska, is that part of United States? (that long and narrow strip of land on Canadian coast people often overlook that actually belongs to Alaska); (2) Physical – there are so many lakes; In the west, a lot of mountains; many islands in Hudson Bay; (3) Climate – north areas seem to be very cold; southern parts seem similar to Massachusetts’ climate; (4) Population – There are more people living near water and coast areas.
Students were able to infer how each map could be used and in what situation they could be useful. Examples of various inferences made by students: (1) Political – It tells us where provinces are, where capitals are, and where the borders are; (2) Physical – It helps us know what sort of land a person can find in a place; (3) Climate – It helps people to figure out what kind of weather they may expect if they were to move there, (4) Population – It shows how crowded or not crowded a place may be.

I was not satisfied with the worksheet I developed. I needed a way to make connections between ASL and English and to transfer the academic discourse in ASL into English version. Perhaps, I should have more guiding questions, but I wanted the activity to be open-ended and student-centered. I did not want to restrict or influence their responses by using such questions. It is something I will need to revisit.

**Lesson:** 3.1 (Population Predictions)

Due to time constraints and scheduling complications, I did not have an opportunity to implement the curriculum in the fashion I would have liked. Also I wanted to have a culminating project that would have touched on all the information about maps we had learned.

Reflecting upon our lessons together, it would be appropriate to use a country students were familiar with based on their background knowledge and our activities – Canada. I wanted an activity to tie maps with critical thinking. After consulting with my peer, the cooperating teacher, and the Social Studies team teacher, I decided to do an activity in which students examine several maps of Canada and make an educated guess regarding its population which would be justified by their arguments using the evidence available to them. The idea was not for them to come up with correct prediction of the
population of Canada, but to develop their reasoning ability as opposed to just randomly
guessing.

I was fortunate to have two sessions back to back during this learning activity, but it also taught me why it is better to have shorter sessions especially with young students. My time with students was coming to the end and MCAS (state’s standardized exam) was reducing the amount of remaining time. However, I was awarded extra time by the cooperating teacher and the team teacher. Fortunately, the students seemed to enjoy the activity and were willing to put into their energy into the learning activity.

I designed an activity whereby the students would be able to move around, discuss with the group their thoughts, reflect on their own thoughts, and drew and wrote about them. While writing is not necessarily a favorite for most students in the class, when paired with drawing, moving around, and articulating their thoughts to each other they were more willing to write. They also knew that I was there to support them if they needed or wanted my assistance.

As a group, we discussed climates since during the previous lesson I noted that there were some confusion over certain climate specifics (what’s difference between marine and steppe climate, for instance) thus, I developed a PowerPoint presentation clarifying each climate zone in Canada and this was in connection to the climate map used in for activity.

We also viewed a weather temperature map and physical map. We talked about what kind of information we can gather from all three maps. Some students noticed a correspondence between climate and weather maps. Others noticed a correspondence between physical and climate maps. However due to the weather map being
superimposed leaving a “shadow” below the image, a student insisted on interpreting black shadow as one end of the temperature spectrum which was in color. This response was unusual for him and I wonder perhaps it would be worthwhile to edit out those shadows for future lessons.

One discussion I particularly enjoyed was about how can climate, weather, and physical geography affect people’s decisions regarding where they live. Issues such as work, recreation, and accessibility to each other came up throughout the discussion. Other subjects such as trading with United States and the rest of the world was brought up as well. It was a good academic discussion and all of it was inferred from those three maps and their prior knowledge.

I asked students to predict where Canadian population is based on what they can see from three maps shared with them. I shared with my model of United States population and gave my reasons for my prediction. The intention was to see what kind of realistic predictions they can come up with based on the information available to them. Throughout the activity students mostly worked on their own, but I made myself available for support if they wished and some students did discuss their thoughts with me.

The end result was that six out of seven students’ predictions nearly matched the real population density of Canada. They also wrote about how and why they made those predictions.

One student’s prediction was different in one way – he had small clusters of high population densities throughout Canada. His argument was some people preferred to live in the wilderness and enjoyed activities related to hunting and ice fishing. While the experts may not agree with him, he was able to explain and clarify his reasoning.
My only regret about the implementation of the whole curriculum was that I was unable to implement it earlier. Being able to communicate with my cooperating teacher earlier before my placement would have helped – I was surprised upon my arrival to find out despite being fifth graders they were using fourth grade standards.
VIII. EVALUATION

In order to evaluate the curriculum I used at the site, I relied upon the following tools: field notes, artifacts, and lesson assessments. Those tools were used to determine whether curriculum successfully met four goals.

Field notes formed one of the legs supporting the evaluation plan of the curriculum. After a lesson was conducted with students, I wrote down field notes at the earliest opportunity in a small notebook I always carried on or near my person. In that notebook, I recorded what lesson was taught on that day along with what I learned from the experience. My observations of students’ performance and responses to the lesson that day were also recorded along with anecdotal notes.

On the same day when there was an opportunity to do so, I transferred my rough field notes into a form I developed on my laptop. The purpose of such form was to make my notes organized and readable by anybody who may wish to examine those notes. The form recorded what date, what lesson was taught and for how long, and what occurred during the lesson. Did it go as expected or were there any unexpected surprises or occurrences? Were there any challenges? If I was to teach the lesson again, are there changes I would make? The form also included my observations of students and recorded my assessment of their learning.

The form was then printed and inserted into a binder reserved specifically for field notes forms. The purpose for doing so was to ensure that I have several copies of same data available – two in organized format, one printed and stored in a binder and one on the laptop’s hard drive then in its rough form in my small notebook.
Artifacts also played an important role in the evaluation plan. During the planning stage of the curriculum, I made sure there are opportunities for me to show literate connections between American Sign Language and English language. Most of artifacts tend to be poster papers full of points gleaned from discussions with students. Since I wanted to be able to continue to use those artifacts as resources during subsequent lessons, I decided the best way to record those artifacts were to take photographs of those with my digital camera.

I made sure I downloaded those pictures onto my laptop and placed into a folder reserved for those pictures. They were labeled in a consistent and systematic manner in such way I would be able to instantly identify which lesson an artifact was made in. For instance, when I made an artifact for Lesson 1.1, the photograph of that artifact was labeled 1.1 Artifact KWL. The basic format was this – Lesson Number, Artifact, Title of that Artifact.

Those photographs were also printed and inserted into the field notes binder next to their corresponding field notes. By doing this, I was able to keep track of artifacts and which lessons they came from and at the same time the classroom were able to continue to use artifacts as a resource for further learning activities.

Student work samples were also utilized in the evaluation plan as well. Assessment of student work played a crucial role in helping me to determine whether if students were able to understand and absorb what I wanted the curriculum to teach them so I felt it was important to record their work samples. Those work samples came into two forms – teacher-developed activity sheets and student-produced works. On each work sample, the corresponding lesson number was labeled to ensure that I am able to
keep track of which lesson those work samples came from. They were photocopied and kept in a work sample binder. By doing so, I was able to return original work samples to students.

To help me monitor individual students’ understanding of a lesson objectives, I devised a system of checklists and rubrics. Early in the curriculum, checklists were used to assist me to keep track of whether if individual students demonstrated understanding via formative and summative assessments as prescribed by each lesson plan. Each checklist was labeled with its corresponding lesson number and stored in a binder. Later into the curriculum as the instruction became more student-centric, rubrics were used to measure their performance. Like checklists, those rubrics were also labeled to link those to their corresponding lesson plans and then stored in a specific binder.

The evaluation plan for the curriculum used rested upon a solid foundation of four legs – field notes, artifacts, student work samples, and checklists and rubrics. Those were processed and stored in such manner that I or any other interested parties will be able to identify which part of the curriculum those items were referring to or came from. Also, by doing so, I was able to use those aspects of the evaluation plan to continue monitor the effectiveness of the curriculum.

To be able to measure the success of the curriculum implemented throughout this experience, I had to determine the learning environment in which my students were placed into. It was also crucially important that I become familiar with my students and get to know them as learners and individuals.

Since my arrival at the site, I began to observe the environment and recorded my observations. I noted that teachers used bilingual strategies in their pedagogy. After a
period of time I became satisfied that at this setting, ASL was respected as a language in its right and equal in status to English language in both written and spoken forms. It is too often that many educational institutions will state they are bilingual yet in reality, ASL is considered and relegated to be just a way for students to communicate with. At this site, ASL specialists worked with ASL equivalent of English Language Learners; students are taught to read sentences in English before signing those out as opposite to signing out every word; and teachers made an effort to make time for formal instruction in ASL literature and structure.

I also noted that there was a place for social studies in the curriculum. The teacher had students maintain their individual social studies binders which provided to be useful for students’ artifacts and work samples. However, the social studies instruction was largely limited to viewing DVDs and reading aloud passages from a textbook, and finally filling worksheet answering questions pertaining to the passages just read out. This demonstrated that knowledge and comprehension was emphasized and the other cognitive domains were not being addressed such as application, analysis, synthesis, and evaluation.

It was my observation that students rarely were engaged into a cooperative learning activity of any type. Their school work was largely an individual endeavor. The only group activity they regularly engaged together in the academic context was asking teacher questions and answering hers.

Finally, I had to determine where students were regarding reading, interpreting, and understanding maps as well as applying maps to their daily lives. I started by examining several students’ social studies binders and noted that they were studying
United States’ states. I observed that during the Current Events sessions, students had to be able to identify where on the global map their events took place. In the end I sat down with the teacher primarily responsible for social studies instruction and discussed with her my curriculum and her expectations. She basically acknowledged that the instruction regarding maps was superficial – maps were a source of information to look up the location of a place, no more.

My first lesson was a K/W/L session for a specific reason. I wanted to use the time to determine myself where students were regarding using maps. The results for the ‘K’ category is shown below. Those results were useful to me in terms of identifying students’ prior knowledge and academic vocabularies they may already are familiar with. This helped me to determine which content I may need to do an in-depth instruction on and what I could simply review.

![Figure 3: Results from K/W/L Activity.](image-url)
After each lesson was completed, during my free time I jogged down notes of what occurred throughout the lesson. I included any anecdotal observations that stood out along with student responses that may be value for curriculum evaluation. Responses to the following questions were also included: How did the lesson turn out? Were there any unexpected outcomes? Any surprise or any obstacles? How do I improve the lesson for the next time?

Later after my work schedule had ended for the day, I organized and typed those notes onto my laptop for the eventual evaluation. Those notes helped me to recall what happened during that lesson on that day and added substance to lesson assessments.

Artifacts from lessons were collected whenever possible. What type of artifact was collected varied from lesson to lesson. For instance for the first lesson a SMART Board K/W/L slide with students’ responses was saved and stored. Several lesson activities had students produce a written work either by free-writing or answering guiding questions which were then photocopied and saved in a binder. Those artifacts enabled me to assess students on an individual basis to see how they performed in a lesson activity which then helped me to determine the next step.

Assessment of students’ work contributed toward my assessment of lessons themselves. To effectively evaluate the curriculum, field notes and artifacts are useful tools, but did not give me a complete picture. To fill in missing gaps left behind by field notes and artifacts, a rubric was also devised for lessons themselves.

After each lesson and after I have assessed students’ works from that lesson, I used the rubric to evaluate that particular lesson. It was the combination of field notes, artifacts, and lesson assessments that helped me to evaluate my curriculum as a whole.
For the clarification, only lessons that were actually taught at the site were looked at for the curriculum evaluation. From there on, the next section will visit each goal and determine whether if end goal was met or not and an explanation of how it was met or why it was not met will be discussed.

Goal 1: Support students in developing their critical thinking skills

Throughout the curriculum, I put in an effort to not restrict my questionings to “knowledge” questions such as “What does letters in US stands for?” or “Where is Mexico?” While it is imperative for the teacher to keep track of his or her students’ understanding throughout a teaching activity, it is also important for the teacher to ask questions which stimulates students’ intelligence and engages their mind into a thinking process. Those types of questionings can be often asked with using “How” and “Why” although those questions necessarily does not have to be limited to those two words.

For instance, during Lesson 2.2 Lesson Mexico Video, I could have sat back and allowed the DVD to do the teaching for me. Instead, I found ways to create connections between students and their prior knowledge to what they viewed on the DVD. The following example of a classroom discussion that demonstrated Knowledge, Comprehension, Application, and Analysis of Bloom’s Taxonomy (1956).

Teacher: Ok, can anybody tell me what kind of landforms Mexico have in common with United States?

Students: Deserts… Pacific Ocean… forests… mountains…

Teacher: Those are good examples. I’d like to elaborate on mountains for now. We agree that Mexico have mountains and United States does too, right?

Students: Yes
Teacher: Is it possible for them to share same mountains? What do you think?

Students: (Puzzled expressions)

Teacher: Anybody remember what’s name of a mountain range in Mexico?

LA: Sierra Madre something?

Teacher: Yes, Sierra Madre, that’s correct. Now do you recall from when you studied southwestern US, is there a mountain range as well?

NS: Yes, Rocky Mountains.

Teacher: (displays a physical map of US and Mexico) Can you show me where Rocky Mountains are?

NS: (points out the correct location)

Teacher: Good, anybody, what about Sierra Madre?

NB: (points out the correct location)

Teacher: Great, good that you remember where Sierra Madre is. Let’s look at the map here and see if those two mountain ranges are actually the same range or two separate ranges…. What do you think?

KL: I think they are the same mountain range.

Teacher: Anybody agrees or disagrees with KL here?

Students: Yes (or nodding)

Teacher: Why do you think those are the same range?

EB: You can see mountains keep going from Mexico into US and don’t see any lands without mountains in between those. Maybe they have different names because of different languages people use in both countries. Mexicans use Spanish not English like in US.
Teacher: That’s great. I really like it when students use their head and make connections. I know you all know what the Rocky Mountains are and you all just learned about Sierra Madre. By looking at this map, you could see they could be the same range and since EB figured that since Mexicans speak Spanish, it is possible they gave mountains in their country a different name. You all have this information in your head and when you put all together, you are really thinking. Good job everybody!

Critical thinking is just like any other academic skills – it often requires modeling and cultivating. Students already studied Rocky Mountains so it was a piece of information they already had and understood. They learned about Sierra Madre mountains via the DVD, yet they did not make the connection between Rocky Mountains and Sierra Madre mountains. It took guiding questions and a visual display (the map) to lead them toward making the connection. One student figured it out and he was able to explain his thinking to his classmates. When there was a moment in which a student displayed an act of critical thinking, it was important for me to capitalize upon that moment to stress to everybody that this type of thinking was desired from them. Based on experience, these students often strived for behaviors which would earn them positive attention and praise.

As demonstrated by the classroom intercourse described above, students were able to retrieve information (Knowledge). They showed their comprehension by being able to identify that two different labeled mountain ranges were actually one same mountain range. However, its parts were named differently depending on which country the mountain range was located. This was also an example of analysis since it entailed students making comparison and contrast among two sets of information which they
learned at two different times. When EB took into consideration that Mexicans spoke Spanish while Americans tended to speak English, he inferred that the information could play a role in the two different names of the same mountain range. Thus, he was fulfilling the application domain of Bloom’s Taxonomy (1956).

During Lesson 2.4, students were asked to examine a map of Mexico’s manufacturing centers, a bar graph detailing Mexico’s exports, and pie charts describing Mexico’s trading partners. While the lesson did call for students to examine those visuals on a separate basis, they were also asked to find connections between those visuals.

Questions that promoted critical thinking questions were used throughout this lesson. Initially students were not sure how to respond to questions asked but after my modeling of my thinking process and asking them guiding questions, they were able to rise to the challenge. Students were asked to justify their responses which in turn encouraged them to think critically.

The worksheet in this activity was used primarily to check for students’ understanding of what they saw on visuals provided and to increase their awareness of information available at their disposal for the class discussions. These class discussions involved questions which required them to think critically.

As described under Lesson 2.4 in the Implementation section, the classroom discourse regarding locations of automobile and electronic goods producing centers being sited around Mexico City showed how students were able to spontaneously analyze the set of information they had access to in conjunction to their prior knowledge. A student noted a pattern of locations of those producing centers and her observation initialized a
discussion by students in which they explored possible relationships between the role of Mexico City as the country’s capital and those producing centers.

During the Lesson 3.1, the population prediction one, students were asked to examine Political, Physical, Climate, and Weather Temperature maps of Canada. We were also engaged into discussion about what kind of information we could infer from those maps such as impact of physical geography and climate upon human activities and the presence of the border in relationship to people’s daily lives. Students’ prior knowledge was heavily drawn upon throughout this discussion.

Ultimately, students were asked to make their own prediction where most Canadians could be found living in Canada using the evidence given to them and what they already knew about Canada and human beings in general. They were also asked to justify their predictions.

In this activity, I made the effort to not intervene in their line of thinking. I wanted their responses to be uniquely theirs and not influenced by my own thinking. Throughout brief teacher-student conferences in this activity, I was careful to avoid giving hints or suggestions which would have influenced their responses.

The result of the activity was that most of students’ predictions were either accurate or very close to the actual population distribution of Canada. I was more interested in how students formulated their predictions rather than to determine if those predictions were correct. Each student involved in this activity was able to explain their reasoning behind their predictions. While one or two students’ reasoning was somewhat flawed, they made the effort to practice critical thinking behavior which was more
important to me. Critical thinking is not something that necessarily comes easily to each individual and often requires practice and mentoring to improve.

Throughout the Lesson 3.1, students showed their ability to engage at each level of Bloom’s Taxonomy. To be able to do the activity, students had to be able to retrieve from their memory their knowledge regarding Canada, different types of maps, and the different climates presented in a PowerPoint presentation. To be able to utilize their knowledge and the information in an appropriate fashion, they had to comprehend the information. For instance, students cannot make comparisons between two types of maps if they could not understand and interpret the information displayed on those maps.

Before students started to work on their predictions, we discussed different types of climates described by the climate map I used for this lesson. I learned during a previous lesson that students were not familiar with climates so I decided there was a need to go into details regarding climates in order to use the climate map appropriately. Armed with the new knowledge, students were able to apply their newly acquired knowledge about climates to analyze the climate map in conjunction to physical, political, and weather temperature maps. Throughout the brief group discussion, students shared their connections they made between those maps. Examples include: (1) Coastal areas offered water-related activities such as fishing and swimming, but in areas where the climate were harsh, it was unlikely human beings would engage in recreational water-related activities; (2) Because the climate and temperatures along the border were not harsh and there were probably more jobs available due to the proximity to US border and trade, more people could be found living in those areas and; (3) it was unlikely that many people would be living in the far north regions of Canada due to harsh climate and low
temperatures. Responses such as these reflected the students’ ability to analyze the information available to them.

When students produced their maps of population predictions, they were engaged in synthesizing. They were making something new which were their maps based on information available to them. When they were asked to explain their predictions and maps in writing, they were being asked to justify their predictions. In doing so they were evaluating their work and determining whether if they were able to support their predictions with evidence.

**Goal 2: Foster students’ skills in reading, interpreting, and using maps**

In almost each lesson conducted throughout this student-teaching placement, students were exposed to maps. We engaged in discussions regarding maps and what kind of information we could derive from them.

Lesson 2.4 explicitly addressed interpreting maps to infer more information beyond their face value. Throughout this lesson, students were given a map of Mexico’s manufacturing centers. There was a legend describing keys for various products such as automobiles and electronic goods and resources such as gas and oil. After a basic instruction on how to read the legend, students were asked to examine the map and asked guiding questions to see what they could infer from this map.

For instance on the worksheet, students were asked where in Mexico most of oil deposits were found. The common response was that the coast of the Gulf of Mexico had the most oil deposits. The following discussion then resulted:

Teacher: What kind of products do we notice being near those oil deposits?
NB: There are a lot of chemical symbols in the same area on the coast. Chemical products…

Teacher: Anybody agrees or disagrees with what NB said? (the class agrees) Okay, why do you think Mexico are producing chemicals in those areas? Coincidence perhaps?

LA: I think maybe they use oil or gas somehow to make chemicals? (points to the map near Monterrey) Look, there’s a chemical product and there’s gas deposit like on the coast.

I emphasized that LA’s interpretation could be correct, but we have no definite way of knowing for sure until we do more research on the topic. I was more interested in having students actively explore the map for information and seek possible connections.

Later in the same lesson, a question on the worksheet asked students where is the Mexico’s “manufacturing center,” as in where are the majority of their producing centers are located. Most students determined that the center was located around Mexico City. When asked why they decided upon this location, some of their responses were:

KL: Mexico City is the capital, it is an important place.

NS: Mexico City has 20 or so million people, there are a lot of workers for factories which they will need.

EB: And a lot of people to sell their products to.

In Lesson 2.7, students were challenged to examine four different types of maps and see if they can determine what those maps were for. To do so, they were required to able to utilize their background knowledge and drawn upon different sources of information to be able to evaluate the value of a map for certain situations.
Students used a worksheet to record what kind of information they could gather from those maps. Their recordings were used to help stimulate the classroom discussion. For instance regarding the Physical Map of Canada, when asked how would people use this map for and why:

MB: If someone wants to move to a place, he can use the map to see what kind of land there to see if it is what he wants to live in.

Teacher: Can you please elaborate on that? Why would does the type of land matters?

MB: If he likes to fish or something, he wants to have lake or something like that nearby, for example.

However, the original curriculum called for explicit instruction regarding map features such as latitudes and longitudes and how to use those. Due to time constraint issues and based on K/W/L assessment results, many of the lessons were skipped. In retrospect, students would have benefited from learning in more depth about those features. Furthermore, having students engaged in making their own maps would have been an excellent form of authentic assessment regarding their knowledge and understanding of how to use maps.

In some ways, the modified curriculum met the curricular goal, but I am not satisfied with the amount of time we spent on explicit instruction of map features and skills. Based on my experience with these students, it is my belief that they would have no problem developing understanding of map features and acquire skills in using and interpreting maps if they were given more opportunities to experience
Goal 3: Develop and use academic language associated with maps in both ASL and English

Obstacles that hindered me from satisfactorily fulfilling goal #2 was also a problem for this goal. Since I was unable to explicitly teach map features and skills, there was not much opportunity to directly develop academic language in both ASL and English pertaining to maps on the scale I would have liked to see.

However, lessons in the modified curriculum did promote students to use academic language throughout our discussions. Throughout the curriculum, I was conscious about making certain that I was modeling academic language to my students as opposed to redesigning and simplifying my ASL. As seen earlier in this section, students were able to demonstrate a good usage of academic language in ASL in their responses in the classroom.

Academic language in written English was a different matter. As seen in Lesson 2.4, students were generally able to respond to the worksheet which asked them questions written in English academic language. However, questions called for short responses, so students were able to make good responses.

Throughout Lesson 3.1, there was greater opportunity for students to demonstrate their ability to write in English academic language as they are asked to submit a paragraph defending their predictions they made of Canada’s population distributions. Since there was nearly no explicit and direct instruction regarding written English academic language, I cannot completely claim that the curriculum did actually contribute in a significant way toward their academic language development in written English.
However, they were exposed to written English academic language consistently throughout the curriculum. Students demonstrated their attempts to use the content vocabulary in their writing. I will share their responses below and keep in mind their paragraphs were written in the class without any opportunity to edit and revise. While they have varying language development needs, they all are English Language Learners and this can be seen in their free writing.

For instance in NS’ paragraph, he wrote “The reason why I predicted these areas to be the places where most Canadians live because it is warmer in the south than the north and it is closer to the U.S. so it is easy to trade and sell with America. Also, there are more populated cities which there are a better chance of getting a job in the south than the north. You wouldn’t find a job on the tundra. If you went to the south, there you would find beaches, parks, mountains, and many other fun things so that is one of the many reasons why Canadians live in southern regions than northern regions. Who wants to live at a place where’s there ice everywhere you look? I wouldn’t!”

NS demonstrated usage of certain vocabulary such as “regions” and mentioned several features such as “mountains” and “parks.” Furthermore, NS demonstrated his ability to making comparisons between northern and southern regions in Canada in terms of population and resources. He also made some analyses as he explained reasons behind why it is easier for people to find jobs in southern regions.

LA wrote “I chose some states because some states are good place for people. West states have Marine states are good place for people to fun. Steppe states are fun place for people to ride. Humid Continental is good for people to plant farming. Some
states have warm between cold temperature. I wish to live on Marnia because Marnia is beauty place for me.”

LA made an effort to insert newly acquired vocabulary regarding climates of Canada which they had recently learned about prior to this writing activity and had a justification to support her claim.

NB explained “I pick some of there because many people would like to live warm. I heard Vitcoria town is really beautiful so people would live beautiful area, scienceist would like to live strange place with short high tides. Many people would like to live Ottawa because work job. I think people would think better to live south of Canada.”

NB made an effort to use place vocabulary in his writing such as “Ottawa” and “Victoria (Vitcoria)” and she justified her reasons.

RB said in her writing “I think near border have millions people lives there. West southern has steppe. Steppe was good for factories. Near border has warm tempeure. Many cities good for factories so many people would have works. Near border have great tempaure and climate.”

RB used vocabulary words pertaining to climates (steppe) which he was recently exposed to prior to the activity. He also argued that factories and good temperatures would draw people to the southern areas of Canada. This is an example of synthesis.

EB in his lengthy paragraph said “Most people live near border between Canada and USA because it warm. That why I draw brown on the border. Some people would like to survive on middle of Canada. North Canada are too cold to survive. Very are to people surviving there. Ice cap have fewest plants, foods, heats. I think that who people
live in ice cap, they should to have many money because they need the heat to live. Ice
cap is so cold. About -30F to 20F average. Canada’s most hot place is near border of
USA and Canada. South Canada’s average tememprate is 50. Many people live there.
Tundra and Ice cap have frozen grounds so trees can’t to grow there. Tree’s roots can’t
get through frozen grounds. But so rare grass can to through frozen ground if they are
strong. Canada have many islands between Canada. Canada have three great lake. Two
or middle. One for near border of USA and Canada.”

EB has a tendency to wander off the point in his writing which can be seen here.
However he did bring up temperature and climate as possible reasons for population
distribution and made some comparisons between southern areas of the country with the
harsh climate of the north. His writing sample is a good example of application and
analysis.

This goal was met considering the circumstances. Students made an attempt to
use new vocabulary they learned and applied known vocabulary from previous units
toward this activity. They also used written language to express knowledge,
comprehension, application, analysis, synthesis, and evaluation.

**Goal 4: Encourage students to use the inquiry approach as a learning strategy**

It is crucial for teachers to constantly ask questions that promote critical thinking
because in doing so, they are modeling the inquiry approach. Furthermore, sometimes by
asking appropriate guiding questions a teacher can help encourage students to ask
questions themselves. Such strategies were used throughout the curriculum.

One of important aspects of the inquiry approach is to give or ensure that students
have the appropriate background knowledge foundation pertaining to the subject matter.
I have done this via Lesson 1.1 in which I assessed students’ prior knowledge regarding maps and how to use those. Furthermore, I took time to review students’ social studies binders which contained their complete collection of work samples and artifacts. With this wealth of information and via my discussions with their primary social studies teacher, I was able to get a reasonable idea of what my students knew regarding maps and associated skills.

During Lesson 2.4 students studied the manufacturing activity of the Mexican economy. They were given information in forms of a map showing various products and resources in Mexico, a bar graph showing Mexico’s exports, and two pie charts describing Mexico’s trading partners. Students were asked to complete a worksheet whose purpose was to have students notice certain aspects of those visuals. In turn, these information was used to implement the inquiry aspect of the lesson. Students were asked to explore relationships between visuals provided and using guiding questions.

Throughout this activity while discussing where we would place the main center of manufacturing activity in Mexico, the general consensus was that the area surrounding Mexico City could be considered. For example, one student observed that there appeared to be a second “center” running along the United States-Mexican border.

Teacher: That’s a good observation. Is there any particular reason for that or is it just a random coincidence?

EB: Maybe Mexicans want to produce near the border so it’d be easier to trade with Americans.

NS: Those charts show that we are Mexicans’ most important trading partners, they trade a lot with us.
Teacher: Why not do the same thing on the southern border? There’s Belize and Guatemala to trade with.

NB: United States is larger and have more people to buy things from Mexico.

RB: I think US has more money so Mexico wants to trade with them.

Using visuals from the lesson, students were able to use their prior knowledge and observations to find answers to questions asked of them. This was a beginning of an inquiry process. Ideally, students could be asked to research United States, Mexico, Belize, and Guatemala’s economic needs, strengths, and weaknesses in relation to Mexico’s economy. They then could be asked find more information as to whether the United States was a desirable trading partner for Mexico. One other possible direction could be to compare Belize or Guatemala to South Korea (or some other distant country) and determine which country would be the most desired trading partner for Mexico along with justifications for their conclusions.

The curriculum has shown that it can lay foundations for the inquiry approach which can be expanded based on time and resources to do so.
IX. CONCLUSION

The initial curriculum was created to address the issue of absence of critical-thinking development in Deaf Education and ability to read and understand maps by deaf and hard of hearing high school students as observed by educators for the Deaf. One of main goals of the curriculum was to encourage students to explore and expand their innate critical thinking skills using maps as a vehicle. The ability to understand and use maps is one of higher ordered thinking skills hence the reason I chose this method. It was also a goal of the curriculum to encourage the usage of inquiry approach in the Deaf classroom. The classroom that uses inquiry approach as a mode of learning and teaching is the student-centered classroom as opposite to the traditional teacher-centered classroom often found throughout educational programs designed for the deaf and hard of hearing. Furthermore, the curriculum was designed in mind to give students multiple opportunities to use and improve their academic language abilities in both ASL and English.

When I initially designed the curriculum, I looked toward California and Massachusetts’ standards and curricular frameworks for fifth grade. It was also designed to build upon a familiar geographical subject whether if it is the United States, a home state, or even a local town. The idea was that this would help to minimize the amount of time required to build students’ background knowledge of an unfamiliar geographical region during the initial stages of exposing students to maps and associated skills. By then, the curriculum was going to have students apply their newly acquired skills to unfamiliar geographical regions and perhaps a time in the past.
Upon my arrival at the teaching placement site, I discovered that fifth graders I was going to work with was currently studying according to fourth grade standards. This unique situation was created out of the small student population at the elementary school there and due to the teaching team structure in place. The preceding year the group of students I was going to work with was taught to fifth grade standards during their fourth grade term and the teaching team was in the progress of catching up students on fourth grade standard subject matters they had missed.

By the time of my arrival, the academic year was approaching its end and the teaching team was insistent on standards yet to be taught to be covered. During designing the initial curriculum, I kept it as flexible as much as possible in order to better adapt it to any unexpected circumstances that may emerge at my placement site. In principle, my curriculum could have been easily adopted toward two specific areas of the standards that were requested of me – Mexico and Canada.

There were other challenges facing me at the site especially the one of time. It was the standardized testing season at the site placement so the school was well into the mode where they preferred to focus students’ time and energy into preparing for Massachusetts Comprehensive Assessment System (MCAS) exams. The primary teacher for social studies was also insistent on finishing up her unit with students before transferring the social studies instruction to me. At the time I felt the best way to respond to the time factor, meeting wishes of the teaching team, and achieving my curriculum goals was to modify heavily the curriculum itself to better accommodate those factors.

This experience was a reminder that the classroom is not an isolated environment and can be easily affected by factors in the greater school community and even the
community beyond the school itself. An effective teacher needs to be willing from time to time step back and look at what he or she wants to do regarding the classroom instruction. Additionally, teachers need to study various factors at the play to ensure there is enough time to do the inquiry and/or make adjustments as needed. Lesson plans can look great on the paper, but in real life, it is not always as realistic and organized. Problems can occur due to balancing needs and wants of various stakeholders involved.

The exciting part of implementing the new curriculum was to observe students becoming stimulated and engaged by the learning activities. While designing lessons, I wanted to make them less restrictive as possible to give the students room to explore each others’ thoughts regarding the content matter. These lessons were new to students who had became accustomed to reading passages pertaining to a social studies and answering accompanying questions. They liked being able to get up and discuss their thoughts and ideas with each other. With practice, students were able to defend their responses by elaborating upon their rationale behind their responses. For me as an educator, it was an exciting and inspiring observation.

I strongly encourage educators of the Deaf to seriously consider adopting some of basic principles behind the curriculum. They can use my curriculum to explore different possibilities of experimenting with interacting ways of promoting critical thinking skills in their classrooms. Instead of filling students’ school days with worksheets, educators can attempt to use the inquiry approach in their teaching. The curriculum can be adapted with modifications more suited toward their students’ and standards’ needs; or certain elements or lesson plans could be used. Educators are also welcome to find ways to expand upon the curriculum such as creating a project in which students can explore
content matter using the inquiry approach and critical thinking skills. It is my hope that the work I have done here will help to be an inspiration for future forward-thinking teachers and their endeavors to create curriculum that will promote active participants and higher level thinking skills.
APPENDIX A: Curriculum
LESSON 1.1
K/W/L

<table>
<thead>
<tr>
<th>California Content Standards</th>
<th>MA Curriculum Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain and use the coordinate grid system of latitude and longitude to determine the absolute locations of places in California and on Earth. <em>(Social Studies 4.1.1)</em>; Use maps, charts, and pictures to describe how communities in California vary in land use, vegetation, wildlife, climate, population density, architecture, services, and transportation. <em>(Social Studies 4.1.5)</em></td>
<td>Use maps and globe skills to determine absolute locations (latitude and longitude) of places studied <em>(History &amp; Geography 4.1)</em>; Interpret a map using information from its title, compass rose, scale, and legend <em>(4.2)</em>; Distinguish between political and topographical maps and identify specialized maps that show information such as population, income, or climate change <em>(5.6)</em></td>
</tr>
</tbody>
</table>

OBJECTIVE
Students will fill a K/W/L poster to demonstrate their prior knowledge of map skills and features and to communicate what they would like to learn throughout the curriculum.

ASSESSMENT
*Formative:* Ask questions throughout the activity – use the list suggested within this lesson plan.
*Summative:* Complete a K/W/L poster with students. Record students’ initials next to their contributions to keep track of whom said what.

PREPARATION
- Blank sheets of a large poster paper *(At least 6 sheets are recommended but do keep extras within the reach just in case)*
- Appropriate writing implements *(Usually markers)*

Determine the ideal spot to display a blank sheet of poster paper on a surface such as a wall or whiteboard where each student can easily view that poster paper.
Pre-label one sheet “What Do We Know About Maps?” and one other sheet “What Do We Want to Know About Maps?”

INTRODUCTION
After securing the classroom’s attention, write the word “Map” on a whiteboard. Ask the classroom do they know this word? What does it mean? Can someone show an example of a map in the classroom?

Explain that the class will be learning about maps and this is their time to demonstrate their knowledge regarding maps.

PROCEDURE

- Put up the “What Do We Know About Maps?” poster. Ask the class what its title says. Explain that they want to show off what they know about maps and that their answers will be recorded. There are no wrong or right responses.
- As students start to share responses, be sure to record their initials next to their responses. This will assist in keeping track of whom said what and also possibly increase others’ motivation to participate.
- A list of possible prompt questions to ask:
  - What is a map?
  - What does the word map means?
  - What kind of information can you find on a map?
  - What do people use maps for?
  - Why maps are important?
  - How do you make a map?
  - Can you give us examples of what a map is?
- Use extra blank sheets as needed, be sure to label those as appropriately.
- After obtaining sufficient numbers of responses to assess the class’ standing regarding their understanding of maps, thank students for their wonderful responses.
- Explain that now it is time for them to share what they would like to know or learn about maps. Put up the pre-labeled sheet “What Do We Want to Know About Maps?”
- Ask the class what the new sheet’s title says. Be sure to clarify the difference between the first and this posters – now they are to share what they would like to learn about maps.
- Some possible prompts to ask:
  - Is there anything about maps you are curious about?
  - Anybody ever wanted to make a map? Of your home; town; school; a treasure map?
  - Anybody noticed differences between old maps from long time ago and today’s maps?

CLOSING
Thank everybody for their responses. Quickly summarize some of their responses for both “What Do We Know About Maps” and “What Do We Want to Know About Maps?" Explain that further lessons will attempt to address those responses.

**EXTENSION**

If it is felt that students have a good beginning foundation of maps, consider the possibility of having them draw a map of a fictional pirate treasure or some sort of mythical lost treasure guarded by a dragon or whatever strikes their fancy. Have them incorporate all details they feel that their map should have such as symbols, the legend, compass rose and so on.
LESSON 2.1

Place Vocabulary Survey

<table>
<thead>
<tr>
<th>California Content Standards</th>
<th>MA Curriculum Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will identify the state capital and describe the various regions of California (Mexico for this lesson), including how their characteristics and physical environments (e.g., water, landforms, vegetation, climate) affect human activity (Social Sciences 4.1.3).</td>
<td>Students will locate Mexico; it’s provinces, and major cities on a map of North America (History &amp; Geography 4.17).</td>
</tr>
</tbody>
</table>

OBJECTIVE

Students will fill a blank map of North America and Canada to demonstrate their prior knowledge of place vocabulary associated with those geographical locations.

ASSESSMENT

Formative: Observe students at work and engage in teacher-student conferencing with each student.

Summative: Students complete their own maps of North America and Canada using listed place vocabulary. They are welcome to add to the list if they wish to do so.

PREPARATION

- Blank sheets of North America political map (Figure A3)
- Blank sheets of Mexico political map (Figure A4)
- Transparency of blank political map of North America
- Transparency of blank political map of Mexico
- North America Place Vocabulary List (Figure A1)
- Mexico Place Vocabulary List (Figure A2)
- Appropriate writing implements (pencils or pens)

Decide how share the place vocabulary lists. Distribute a copy to each student? Display on a wall visible to students? Use Smart Board to bring up the list?

Suggestion: If there is alternative technology other than an overhead projector available, consider using those such as document camera or a Smart Board to display a blank map instead of using a transparency.

INTRODUCTION

Remind students of the previous K/W/L activity. Explain that the class will be exploring map skills and perhaps find answers to their “Want to Know”
questions throughout the following social studies unit. Add that the class will be studying Mexico but it is important for the teacher to know how much they understand about North America first.

**PROCEDURE**

- Ask students what comes to their mind when they think of “North America.” Possible prompt questions:
  - What does North America mean to you?
  - What have you learned about North America?
  - Any particular geographical facts you remember about North America?
  - Do you know what countries are considered to be in North America?
- Explain to help teacher understand better where students are with what they know of North America, they will be asked to fill out a blank political map of North America using a predetermined list of place vocabulary. Stress this is for assessment purposes – they are asked to do their best and it will help determine where to start.
- Distribute blank sheets (and lists if it is not going to be displayed).
- Observe students and engage individual students in brief discussions regarding their thoughts on the activity. Are they having a hard time? Any challenges?
- After students are finished, hold a brief class discussion. Did they recognize the listed place vocabulary? Did they add anything new to the list and if so, what was it?
- Display a large blank map of North America (either via an overhead projector or some other type of projecting technology) and quickly scan students’ work. Ask for volunteers to point out few place vocabulary from the list on the map. Discuss as needed.
- If a student added new place vocabulary, encourage them to share their vocabulary by showing the location on the map and describing what it is.
- Based on their worksheets, ask appropriate questions regarding Mexico. What do they know about Mexico? Have they been there and if so, where did they visit? What comes to their mind when they think of Mexico and its people?
- Explain that they will be asked to do the same on a blank political map of Mexico. Distribute blank sheets (and lists if it is not going to be displayed).
Observe students and engage individual students in brief discussions regarding their thoughts on the activity. Are they having a hard time? Any challenges?

After students are finished, hold a brief class discussion. Did they recognize the listed place vocabulary? Did they add anything new to the list and if so, what was it?

Display a large blank map of Mexico (either via an overhead projector or some other type of projecting technology) and quickly scan students’ work. Ask for volunteers to point out few place vocabulary from the list on the map. Discuss as needed.

If a student added new place vocabulary, encourage them to share their vocabulary by showing the location on the map and describing what it is.

CLOSING

Close by reminding students that they will be studying Mexico and its place in North America in next few social studies session and that they will know more about Mexico than they did before.
Figure A1: Place Vocabulary List for North America.

<table>
<thead>
<tr>
<th>Country</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Pacific Ocean</td>
</tr>
<tr>
<td>USA</td>
<td>Atlantic Ocean</td>
</tr>
<tr>
<td>Mexico</td>
<td>Gulf of Mexico</td>
</tr>
<tr>
<td>Greenland</td>
<td>Bering Sea</td>
</tr>
<tr>
<td>Russia</td>
<td>Hudson Bay</td>
</tr>
<tr>
<td>Cuba</td>
<td>Puerto Rico</td>
</tr>
<tr>
<td>Alaska</td>
<td></td>
</tr>
</tbody>
</table>
Figure A2: Place Vocabulary List for Mexico.
Figure A3: Blank Political Map of North America
Figure A4: Blank Political Map of Mexico
LESSON 2.2
The Geography of Mexico

<table>
<thead>
<tr>
<th>California Content Standards</th>
<th>MA Curriculum Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use maps, charts, and pictures to describe how communities in California (Mexico in this lesson) vary in land use, vegetation, wildlife, climate, population density, architecture, services, and transportation. (Social Sciences 4.1.5).</td>
<td>Students will locate Mexico and its major cities on a map of North America (History &amp; Geography 4.23); Students will describe the climate, major physical characteristics, and major natural resources of Mexico and explain their relationship to the Mexican economy (History &amp; Geography 4.24).</td>
</tr>
</tbody>
</table>

OBJECTIVE
Students will view a DVD The Geography of Mexico which describes Mexico’s geography and make a list of what they learned from the viewing.

ASSESSMENT
Formative: Observe students at work and hold brief discussions throughout the video as needed.
Summative: Students complete their four squares of information from each category – Landforms, Products, Resources, and Interesting Facts.

PREPARATION
- The Geography of Mexico DVD by Schlessinger Media
- Blank lined paper
- Writing impediments
- Sample of completed graphical organizer

Either use the provided sample graphical organizer or devise a new one. It is recommended that the sample graphical organizer contains information familiar to students.

Consider students’ visual and auditory needs regarding viewing the DVD. Some students may have certain needs regarding their visual abilities. Students who have some hearing may appreciate having the volume on but ensure that the volume is at the appropriate level.

View DVD beforehand and take notes of information students should be aware of after viewing the film. Consider his or her language development – do not assume that since the DVD is subtitled it is readily accessible to every student. Some students may benefit from ASL translation of such subtitles.
INTRODUCTION

Announce that the class will be viewing a short film on Mexico and its geography. Since this is an educational viewing, students are expected to be able to share with each other what they learned from the film. Quickly ask students what kind of geography does they think they will find in Mexico.

PROCEDURE

- Briefly review with students the terms Landforms, Resources, and Products.
- Ask students to take out a blank lined paper and fold into four squares.
- Using the sample worksheet, show how to label their paper with Landforms, Resources, Products, and Interesting Facts in each square. This will be their graphical organizer for this activity.
- Discuss the sample graphical organizer to help illustrate what are expected of students regarding this activity. Remind students they are expected to record at least five items per category.
- Begin the video. Consider pausing at key points to allow students catch up with their lists. Consider allowing pairings to help students get around language obstacles if there are any but their work should be individualized for assessment purposes.
- Throughout the video, if there is a need to better clarify what is being said or to check students’ understanding, pause and conduct quick brief discussions on what they saw. This will enable the teacher to ensure students are following the video.
- At the end of the video, if time permits, have students share their responses with the class. Record their responses under appropriate category on the whiteboard or via the Smart Board.

CLOSING

Ask students if they learned something new about Mexico. Collect their graphic organizers.
<table>
<thead>
<tr>
<th>LANDFORMS</th>
<th>RESOURCES</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>PRODUCTS</th>
<th>INTERESTING FACTS</th>
</tr>
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</tbody>
</table>

**Figure A5:** K/W/L Graphic Organizer
LESSON 2.3
Mexico – Map-Making

<table>
<thead>
<tr>
<th>California Content Standards</th>
<th>MA Curriculum Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use maps, charts, and pictures to describe how communities in California (Mexico in this lesson) vary in land use, vegetation, wildlife, climate, population density, architecture, services, and transportation. (Social Sciences 4.1.5).</td>
<td>Students will locate Mexico and its major cities on a map of North America (History &amp; Geography 4.23); Students will describe the climate, major physical characteristics, and major natural resources of Mexico and explain their relationship to the Mexican economy (History &amp; Geography 4.24).</td>
</tr>
</tbody>
</table>

OBJECTIVE
Students will complete their map of Mexico using place vocabulary learned in the previous lesson.

ASSESSMENT
Formative: Observe students at work and ask questions to check for understanding and progress.
Summative: Students complete their map of Mexico with listed place vocabulary labeled in appropriate places.

PREPARATION
- Mexico Map Directions (Figure A6)
- Blank Mexico Physical Map (Figure A4)
- Writing impediments
- Colored pencils
- Mexico Physical Map (Figure A5)

INTRODUCTION
Share with the class that today they will be making a map of Mexico. Stress that they will be labeling place vocabulary they learned from the video. Add that it’s important for everybody to work together at the same pace and that there is a list of specific instructions. If necessary, discuss behavioral expectations regarding sharing colored pencils.

PROCEDURE
- Bring up a map of Mexico and discuss with students what they remember from the DVD
• Explain that they will be asked to make their own map of Mexico based on what they learned from the DVD, and then distribute blank maps of Mexico and colored pencils.
• Display the Mexico Map Directions. It is recommended one item is to be visible to students at a time to prevent students from working ahead.
• Display a Mexico Blank Physical Map.
• With the first item, ask for volunteers to locate where it is on a displayed blank map. If necessary, consider referring to the Physical Map. Observe students at work and ensure that they understand what is expected by asking them questions.
• Feel free to discuss briefly with students what they remember about that particular place and why is it unique enough to be on the list.
• Repeat the above with each item on the List.

Possible modifications:
* Each student could have their own list of Mexico Map Directions to work at their own pace.

CLOSING
If time permits, discuss with students how this activity helps them to better remember place vocabulary. Announce that there will be a test on Mexico geography and they are to use those maps they just created as a study guide. Offer to distribute blank maps for their study use if they want.

EXTENSION
* Students can be asked to discuss what they learned from this activity.
* Are there any elements of Mexico they did not notice previously and elaborate upon those discoveries they made throughout doing this activity.
* Have them brainstorm ideas of how geography of Mexico or a particular area may affect people living there.
Figure A6: Physical Map of Mexico
Figure A7: Mexico Map Directions
LESSON 2.4
Mexico Manufacturing Centers

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<td>Students will locate Mexico and its major cities on a map of North America (History &amp; Geography 4.23); Students will describe the climate, major physical characteristics, and major natural resources of Mexico and explain their relationship to the Mexican economy (History &amp; Geography 4.24).</td>
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OBJECTIVE
Students will understand how to interpret information from graphs and maps.

ASSESSMENT
*Formative:* Observe students at work and conduct brief classroom discussion to check for understanding and progress.
*Summative:* Students complete their individual worksheet with questions pertaining to the map and graphs

PREPARATION
- Mexico Manufacturing Center Worksheet
- Mexico Manufacturing Center Map (Figure A7)
- Mexico Exports Graph (Figure A8)
- Writing impediments

INTRODUCTION
Share with the class that today they will be learning about Mexico’s manufacturing center – what kind of resources and products Mexico relies on for its economy along with whom it trades with.

PROCEDURE
- Explain to the class that they will be expected to work at the same pace in order for everybody to benefit from the group discussion.
- Bring up map of Mexico’s manufacturing center. Ask students what they notice and infer from that map. Consider recording their comments. Bring their attention to the legend. Explain what a legend is.
Ask them what information they can draw upon from the legend and the map.

* Bring up the Mexico Manufacturing center graph. Ask students what they can infer from this graph. Encourage them to find connections between the map and graph.
* Distribute the worksheet and consider having a group discussion. Decide on one of the following possibilities – students work in pairings, work in small groups, or work together as an entire class.
* Have students discuss each question. Ask guiding questions as needed. Consider assisting with language if needed. If possible have students share their responses with each other for the discussion.
* When students are ready to discuss the bar graph, display the bar graph. Ask what students notice about those pie charts. Ask questions – some suggestions:
  o Who is Mexico’s largest exporting partner and why.
  o Who is Mexico’s largest importing partner and why.
  o Which product is the country’s most important export and why.
* If time permits, ask students about the relationship between Mexico’s resources and its manufacturing centers – what did they notice and can they explain why manufacturing centers are located where they are.

CLOSING

Explain to students what they just did is an act of higher level of thinking. While a map and a graph can convey information to people, there are often more information which can be inferred from studying connections between maps and graphs. It is same with everything else such as looking at a bar graph and accompanying text or applying what they learned in science to an art project.
Name: __________________________

Mexican Economy

1. Name four types of products Mexico manufactures
   a. 
   b. 
   c. 
   d. 

2. Name two types of resources available in Mexico
   a. 
   b. 

3. On which coast are most of oil deposits found?
   _________________________________

4. How many industrial areas can you find on the map?
   _________________________________

5. What is Mexico’s capital city?
   _________________________________

6. Name Mexico’s three neighbors:
   a. 
   b. 
   c. 

7. Based on the map, where is Mexico’s “manufacturing center”? _________________________________

8. Based on Mexico’s Exports bar graph, what is Mexico’s largest export? _________________________________

9. Its smallest export? _________________________________
10. Which country does Mexico export to the most?
______________________________

11. Which country does Mexico export to the least?
______________________________

12. Which country does Mexico import from the most?
______________________________

13. Which country does Mexico import from the least?
______________________________

14. Who is Mexico’s most important trading partner and why?
______________________________

Figure A8: Mexico Manufacturing Center Worksheet
Figure A9: Mexican Manufacturing & Resources Map
Figure A10: Mexican Trade Graphs
LESSON 2.5
The Geography of Canada

<table>
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<tr>
<td>Students will identify the state capital and describe the various regions of California (Canada for this lesson), including how their characteristics and physical environments (e.g., water, landforms, vegetation, climate) affect human activity (Social Sciences 4.1.3).</td>
<td>Students will locate Canada; its provinces, and major cities on a map of North America (History &amp; Geography 4.17).</td>
</tr>
</tbody>
</table>

**OBJECTIVE**

Students will view a Geography of Canada which describes Canada’s geography and make a list of what they learned from the viewing.

**ASSESSMENT**

*Formative:* Observe students at work and hold brief discussions throughout the video as needed.

*Summative:* Students complete their four squares of information from each category – Landforms, Products, Resources, and Interesting Facts.

**PREPARATION**

- The Geography of Canada DVD
- Blank lined paper
- Writing impediments
- Sample of completed graphical organizer

Either use the provided sample graphical organizer or devise a new one. It is recommended that the sample graphical organizer contains information familiar to students.

Consider students’ visual and auditory needs regarding viewing the DVD. Some students may have certain needs regarding their visual abilities. Students who have some hearing may appreciate having the volume on but ensure that the volume is at the appropriate level.

View DVD beforehand and take notes of information students should be aware of after viewing the film. Consider his or her language development – do not assume that since the DVD is subtitled it is readily accessible to every student. Some students may benefit from ASL translation of such subtitles.

**INTRODUCTION**
Announce that the class will be viewing a short film on Canada and its geography. Since this is an educational viewing, students are expected to be able to share with each other what they learned from the film. Quickly ask students what kind of geography do they think they will find in Canada.

PROCEDURE

- Briefly review with students the terms *Landforms*, *Resources*, and *Products*.
- Ask students to take out a blank lined paper and fold into four squares.
- Using the sample worksheet, show how to label their paper with *Landforms*, *Resources*, *Products*, and *Interesting Facts* in each square. This will be their graphical organizer for this activity.
- Discuss the sample graphical organizer to help illustrate what are expected of students regarding this activity. Remind students they are expected to record at least five items per category.
- Begin the video. Consider pausing at key points to allow students catch up with their lists. Consider allowing pairings to help students get around language obstacles if there are any but their work should be individualized for assessment purposes.
- Throughout the video, if there is a need to better clarify what is being said or to check students’ understanding, pause and conduct quick brief discussions on what they saw. This will enable the teacher to ensure students are following the video.
- At the end of the video, if time permits, have students share their responses with the class. Record their responses under appropriate category on the whiteboard or via the Smart Board.

CLOSING

Ask students did they learn something new about Canada and what was it. Collect their graphic organizers.
LESSON 2.6
Canada’s Provinces and Territories

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<tr>
<td>Students will identify the state capital and describe the various regions of California (Canada for this lesson), including how their characteristics and physical environments (e.g., water, landforms, vegetation, climate) affect human activity (Social Sciences 4.1.3).</td>
<td>Students will locate Canada; it’s provinces, and major cities on a map of North America (History &amp; Geography 4.17).</td>
</tr>
</tbody>
</table>

OBJECTIVE
Students will examine Canada’s provinces and territories while making their map study guide for a map test.

ASSESSMENT
*Formative:* Observe students at work and ask questions to check for understanding and progress.
*Summative:* Students complete their map of Canada with listed place vocabulary labeled in appropriate places.

PREPARATION
- Canada Place Vocabulary List (Figure A11)
- Blank Canada Political Map (Figure A9)
- Writing impediments
- Canada Political Map (Figure A11)

INTRODUCTION
Share with the class that today they will be making a map of Canada. Stress that they will be labeling place vocabulary they learned from the video. Also explain that it’s important for everybody to work together at the same pace and that there is a list of specific instructions. If necessary, discuss behavioral expectations regarding sharing colored pencils.

PROCEDURE
- Bring up a map of Canada and discuss with students what they remember from the DVD
- Explain that they will be asked to make their own map of Canada based on what they learned from the DVD then distribute blank maps of Canada.
• Display the Canada Place Vocabulary List. It is recommended one item is to be visible to students at a time to prevent students from working ahead.
• Display a Canada Blank Physical Map.
• With the first item, ask for volunteers to locate where it is on a displayed blank map. If necessary, consider referring to the Physical Map. Observe students at work and ensure that they understand what is expected by asking them questions.
• Feel free to discuss briefly with students what they remember about that particular place and why is it unique enough to be on the list.
• Repeat the above with each item on the List.

CLOSING
If time permits, discuss with students how this activity help them to better remember place vocabulary if it does. Announce that there will be a test on Canada geography and they are to use those maps they just created as a study guide. Offer to distribute blank maps for their study use if they want.
Figure A11: Blank Political Map of Canada
Figure A12: Political Map of Canada
Figure A13: Canada Place Vocabulary List
LESSON 3.1
Canada Population Predictions

<table>
<thead>
<tr>
<th>California Content Standards</th>
<th>MA 5th Grade Curriculum Framework</th>
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<tr>
<td>Students will identify the state capital and describe the various regions of California (Canada for this lesson), including how their characteristics and physical environments (e.g., water, landforms, vegetation, climate) affect human activity (Social Sciences 4.1.3).</td>
<td>Students will locate Canada; its provinces, and major cities on a map of North America (History &amp; Geography 4.17); Distinguish between political and topographical maps and identify specialized maps that show information such as population, income, or climate change (History &amp; Geography 5.6).</td>
</tr>
</tbody>
</table>

OBJECTIVE
Students will make a prediction of where most Canadians live based on evidence provided and justify their predictions.

ASSESSMENT
*Formative:* Ask questions throughout the activity – what kind of information can they get from a particular type of map? What kind of connection or information can they get from two or more types of maps?
*Summative:* Students will be asked to record at least few connections they were able to glean from different maps. This can be done by writing three to five statements. They will be asked to explain what each type of map is useful for what purposes.

PREPARATION
- Climate PowerPoint Slides (Figure A12-A18)
- Political Map of Canada (Figure A10)
- Physical Map of Canada (Figure A19)
- Climate Map of Canada (Figure A20)
- Weather Temperature Map of Canada (Figure A21)
- Blank Political Map of Canada (Figure A9)
- Sample United States Population Prediction (Figure A22)
- Lined Paper
- Pencils
- Colored Pencils
Maps listed above can be posted on or projected upon a wall. If a SMART Board is available, this tool is ideal for displaying all maps as needed throughout classroom discussion.

Consider making a sample prediction using United States as a model for students.

**INTRODUCTION**

Begin by referring to Lesson 1.3. What kinds of maps are available out there? There is a challenge for students and maps will contain clues they need to solve questions.

**PROCEDURE**

- Begin with the Political Map. What do students see? What kind of information is this map good for?
- Physical Map is next. What kind of data can students gather from this map? (land features and water bodies) Discuss how geography seen on this map could impact human activities (where they live and work; what kind of recreational activities could be found in an area)
- Climate Map – What information were students able to glean from this map? Display the Physical Map – are there any relationships students noticed? (For instance the physical presence of the Rocky Mountains and the proximity of Artic Circle)
- Weather Temperature Map – Any particular pattern did students notice and any connection to the climate or physical maps? How would temperatures affect human activities?
- Ask questions – what kind of information can students get from at least two of those maps? How did those maps help students better understand a particular location? If they haven’t done yet, encourage them to consider the proximity of United States and the importance of trading in relation to jobs.
- Explain that now students will be asked to make a prediction regarding where most Canadians are likely to live using maps they just examined. They are expected to ground their predictions based on what they know and be able to justify those.
- Show the sample prediction map to act as a model. Explain predictions on the map. Stress that the main idea is not to be correct but to be able to reach at a logical conclusion using the evidence and to be able to explain their reasoning.
- Distribute blank political maps for students to use. Stress that they may use the teacher as a sounding board if they need.
Throughout this activity, monitor students at work. Engage in brief teacher-student conference with each student and be sure to encourage them to explain their reasoning.

Once a student is finished with his or her map, ask him or her to write a brief paragraph explaining their predictions. Make available assistance to them if they need it.

Possible modifications:
Sentence frames can be provided to assist students in forming their logical conclusions. Additional modeling would also be helpful.

CLOSING
Share with the class how exciting it was to observe them to engage in this kind of thinking. Explain that it is a high level of thinking and they will be expected to engage at that level in middle and high school if they wish to perform well academically. Ask for volunteers to share their maps with the class and be sure to praise them. The idea is to encourage their confidence in themselves as thinkers.

EXTENSION
Students can be asked to think critically about their map use. You can ask questions like: What else would you like to learn about maps? What are some other uses for maps?
Figure A14: First Page of Climate PowerPoint
ICE CAP

- Extremely cold
- Little to none vegetation

Figure A15: Second Page of Climate PowerPoint
TUNDRA

- Temperature is always freezing
- Ground is frozen most of the time
- No or very few trees

Figure A16: Third Page of Climate PowerPoint
SUBARCTIC

- Long winters and brief summers
- Farming possible but poor
- Very rocky
- Trees can grow

Figure A17: Fourth Page of Climate PowerPoint
**STEPPE**

- Very dry
- Too dry for trees
- Mostly flat
- Almost like a desert

*Figure A18:* Fifth Page of Climate PowerPoint
- Warm winters and cool summers
- Precipitation is predictable and adequate
- Can support farming
- In coastal areas

**Figure A19:** Sixth Page of Climate PowerPoint
HUMID CONTINENTAL

- Warm summers
- Cold winters
- Can support farming

Figure A20: Seventh Page of Climate PowerPoint
Figure A21: Physical Map of Canada
Figure A22: Climate Map of Canada
Figure A23: Weather Temperature of Canada
Figure A24: Sample of US Population Prediction
APPENDIX B: Student Work Samples
Figure B1: K/W/L Results from Lesson 1.1
Figure B2: Sample Student Mexico Map from Lesson 2.1
Figure B3: Sample Student North America Map from Lesson 2.1
Figure B4: Sample Student Mexico Map from Lesson 2.3
Figure B5: Sample Student Mexico Map from Lesson 2.3
Figure B6: Sample Student Mexico Map from Lesson 2.3
Figure B7: Sample Student Mexico Map from Lesson 2.3
**Figure B8:** Sample Student Population Prediction Map from Lesson 3.1
Figure B9: Sample Student Population Prediction Map from Lesson 3.1
Figure B10: Sample Student Population Prediction Map from Lesson 3.1
Figure B11: Sample Student Population Prediction Map from Lesson 3.1
Figure B12: Sample Student Population Prediction Map from Lesson 3.1
REFERENCES


