

LAST CHILD ON THE PRAIRIE: GEO-PROGRESSIONS, MENTAL MAPS, AND
COMMUNITY-BASED SENSE OF PLACE AMONG KANSAS THIRD GRADERS

by

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Abstract

A question exists on how cultural backgrounds influence the paths students take to understand cultural geography and construct mental maps of their communities. This thesis draws on the interconnections among student multiculturalism, geo-progressions (learning trajectories in geography), and perception of the environment at the community scale. As a result of the *Road Map for 21st Century Geography Education*, geo-progressions have received increased attention by geography education researchers. The majority of the effort to-date has focused on the first theme of the National Geography Standards: the world in spatial terms (Standards 1-3). This study attempts to deconstruct and rethink a geo-progression by considering multiple paths to learning Geography Standard Six, “how culture and experience influence people's perceptions of places and regions.” The study incorporates the concept of community, a major theme for third grade as indicated in the *Kansas Standards for History, Government, and Social Studies*. During this longitudinal study, students were asked to make mental maps and talk about their community-based sense of place twice during part of the 2015-2016 school year. Third-grade classrooms from four demographically distinct areas of Kansas were surveyed: Manhattan, Garden City, Horton, and Junction City. The first session was conducted in September 2015. In January 2016, the same students were asked to perform the same tasks to assess any temporal differences. Mental maps and interviews were coded and analyzed to assess the spectrum of how students perceive a spatial sense of community over time. Interviews with teachers helped document classroom-to-classroom differences in how the concept of community was incorporated into the teaching effort.

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Dedication

I dedicate this thesis to mother, father, sister, and brother for their love, support, and guidance as I embarked on a “learning progression” of my own as a graduate student at Kansas State University.

AUT AGERE AUT MORI.

Chapter 1 - Introduction

There is no *bat mitzvah* or *quincién* to indicate when a child becomes aware of her surroundings. No grade level, karate belt color, or set of educational standards can adequately coincide with how a child develops a more sophisticated intimacy with the places around him. This type of consciousness occurs at all levels and at varying paces (Tuan 1977). Awareness increases and decreases according to how often a child initiates this type of thinking, similar to when one learns about a new part of town, an untraversed street or alley way, or the blur of things passing by as a child presses her head against the window pane of the bus on her way to school. A similar process occurs when one learns another language, becomes fluent, does not use it for a long time, and forgets how to conjugate a set of verbs or remember that the term *embarazada* means “pregnant” and not “embarrassed.”

This exploratory study addresses how Kansas third graders understand their community over part of a school year. Once during September 2015 and a second time in January 2016, participants from different parts of Kansas drew mental maps and discussed how their cultures, experiences, and education have contributed to help them make sense of the concept of a spatial sense of community or a community-based sense of place. These children come from four strikingly dissimilar communities in Kansas, including a military town, a college town, a rural town in the process of reinvention, and a southwestern town known for its immigrant population and meatpacking/feedlot industry. This exploratory research seeks to answer four questions through an inductive process:

- 1) What does “community” mean for Kansas third graders, in a spatial sense?
- 2) Does a student’s culture, experience, and education intersect to create an understanding of community as connected to sense of place?

- 3) Does this understanding change from the beginning to the middle of the school year, and if so, how?
- 4) What might a spatial-community or a sense of place learning progression look like for the elementary grades?

Through this study, I am attempting to contribute to learning progressions research in geography education. Learning progressions, or the journey of learning as concepts build upon one another, has become a major topic for geography education research (Huynh, Solem, and Bednarz 2014). Think of education as a staircase; learning progressions are the steps leading to the next floor. The National Research Council has defined learning progressions as the “description of successively more sophisticated ways of thinking about a topic that can follow one another as children learn more about and investigate a topic over a broad span of time” (NRC 2007; also see Huynh and Gotwals 2014).

Thus far, the majority of research on learning progressions in geography or “geo-progressions” has focused on one aspect of the National Geography Standards, “the world in spatial terms.” Outlined in *Geography for Life*, National Geographic developed these standards in 1994 and revised them in 2012. The document identifies eighteen standards categorized according to six essential elements: the world in spatial terms, places and regions, physical systems, human systems, environment and society, and the uses of geography (Heffron and Downs 2012). “The world in spatial terms” element of the standards focuses on the technical aspects of how to make spatial calculations, analyze spatial patterns, develop mental maps, and perform other forms of spatial thinking (Heffron and Downs 2012; Huynh, Solem, and Bednarz 2014). This study builds upon previous research by creating an avenue to another National Geography Standard, “how culture and experience influence people’s perceptions of places and

regions.” Standard Six challenges learners to understand how a person’s sociocultural background plays into how one gives meaning to surrounding places and regions.

This study focuses on the community theme in the *Kansas Standards for History, Government, and Social Studies* (Kansas State Department of Education 2013) to address geographical perception. Whether one views it as a place, region or local history, community identifies a major theme for Kansas third grade social studies. Community makes up one level of the “Expanding Horizons” model. The “Expanding Horizons” model is an educational framework that bases learning on a geographic scale that broadens as the student ascends through the grade levels, beginning with “self” in kindergarten and expanding to family in second grade, community in third, and so on (Fore and Biermann 1998; Wade 2002). The model has been adopted by numerous states in standards development and represents one of the learning frameworks that geographers have tried to use for integrating geography into the U.S. education system (Hume and Boehm 2001; Rutherford and Boehm 2004).

Why is this research important?

It has been said in the hallways that some academic geographers do not believe that geography education research is *true* geography. Rather, it belongs in the colleges or departments of education. Research that involves having groups of Kansas third graders draw pictures and talk about their community might be a nice extracurricular activity for a geographer, but is it valid geographic research? Such dismissals do not reflect the very real impact that geography education research has had on geography as a whole. For example, Pattison (1964) established the four traditions in geography – the spatial tradition, area studies tradition, human-environment tradition, and earth science tradition. These four traditions have helped frame geography as an integral avenue of scholarship in the academy for over a half-century. This

original article, and its republishing in 1990, was not featured in the *Annals of the Association of American Geographers* or the *Professional Geographer*. Instead, this pivotal piece was printed in the *Journal of Geography*, a publication dedicated to geography education research and supported by the National Council for Geographic Education. Pattison (1964) highlights the important bridges between geography education and the discipline as a whole.

This research fits within the spatial, area studies, and human-environment aspects of geography, and uses a cultural and human-environmental lens on geo-progressions and sense of place/community. The study's premise is also aligned within at least four of the ten big questions in geography (Cutter, Golledge, and Graf 2002):

- 1) What makes places and landscapes different from one another and why is this important?
- 2) Is there a deeply held human need to organize space by creating arbitrary borders, boundaries, and districts?
- 3) How do we delineate space?
- 4) What is the nature of spatial thinking, reasoning, and abilities?

Furthermore, the localized nature of this study ties into the current trends in geographic thought, situating the investigation in the dynamics of their local community to advance understanding of how local events and decisions shape and are shaped by global changes (Harrington and Harrington, 2011). As a result, this research is very much tied to the mainstream trends in geographic thought and philosophy.

Another reason geographers should pay attention to geography education research, and particularly the current trend toward geo-progressions, is to preserve their legacy. Geographers with PhDs as their title have worked hard to earn that recognition. If K-12 students spend more

time per week brushing their teeth than learning geography, then academic geography research is likely to lose some of its impact on the general population. Geography education gave rise to help academic geography explain itself and its importance to the greater community (see Heffron and Downs 2012). The National Resource Council (NRC) report, *Rediscovering geography: New relevance for science and society*, made the point that “changes within geography are themselves responses to changes in society, and some of them have affected the ways professional geographers view the search for knowledge” (NRC 1997, 12). With that said, the NRC also reported that “concerns about ‘geographic illiteracy’ among Americans have been the catalyst for a new focus on geography in the United States” (1). If geographers are not active in education at the K-12 level, then they will “publish and *still* perish” and they, in the words of the poet Dylan Thomas, will “go gently into that good night.”

A recent national study indicated that most American students graduate eighth grade with little or no understanding of geography, and that most states do not require that geography be taught as a separate class in grades 6-12 (GAO 2015). In the worst case scenario, the absence of geography education research in the K-12 classroom would further promote the very real chance for there to be a last child on the Kansas prairie with any sense of how to read and interpret the surrounding landscapes. This study represents one step in mobilizing meaningful geography education research and using geography to contribute to a more informed, geographically literate population.

Organization

A literature review (Chapter 2) incorporates research ranging from education theory to developmental psychology to humanist geography to pin down how a multi-dimensional learning progression works when a child’s culture and experience cross paths with classroom learning. It

investigates the use and practicality of geographic concepts like mental maps and sense of place as instruments for insights on child development and community awareness. The methods and site selection portion of this thesis (Chapter 3) provides an overview of the cultural landscapes of each Kansas community in question, as well as a summary of the rationale, benefits, and limitations of the research instruments used to measure a spatial sense of community for Kansas third graders during the 2015-2016 school year. In particular, this exploratory study utilizes the mixed-methods approach with the coding of mental maps, content analysis of focus groups with students, and semi-structured interviews with teachers.

Chapter 4, “Here and Now, There and Now, Where and How?” presents findings based on analysis performed to discover meaning. Some of the findings will be of no surprise; for example, many students simply are not learning about community during the third grade school year, while other students are developing a more complex awareness of their local communities. Other aspects of the findings serve as learning experiences for future research, including the importance of temporal variability and procedure in conducting a mental mapping session within a longitudinal study. Chapter 5, “What’s Wrong with Kansas Third Graders?”, situates these results within the greater context of the state(s) of education, the state and national education standards for geography and social studies, and the nature of society. This final chapter also discusses future plans of expanding and improving upon this exploratory research.

Chapter 2 - Escaping Flatland through Multidimensional Geo-Progressions

“To
The Inhabitants of SPACE IN GENERAL
And H. C. IN PARTICULAR
This Work is Dedicated
By a Humble Native of Flatland
In the Hope that
Even as he was Initiated into the Mysteries
Of THREE Dimensions
Having been previously conversant
With ONLY TWO
So the Citizens of that Celestial Region
May aspire yet higher and higher
To the Secrets of FOUR FIVE OR EVEN SIX Dimensions
Thereby contributing
To the Enlargement of THE IMAGINATION
And the possible Development
Of that most rare and excellent Gift of MODESTY
Among the Superior Races
Of SOLID HUMANITY”

- The Square, *Flatland: A Romance of Many Dimensions*

“We hammer wood for a house,
But it is the inner space that makes it livable.”

- Lao Tzu, *Tao Te Ching*

“This great world is a mirror where we must see ourselves in order to
know ourselves.”

- J.B. Jackson

This review is about the journey of learning a spatial sense of community. Students of geography hold some commonalities to the Square from *Flatland: A Romance of Many Dimensions* by Edwin Abbott (1884). As the protagonist, the Square lived in the two-dimensional world called Flatland. At no point did he or his peers consider the possibility of there being more than a two-dimensional world. His whole life changed when he encountered a

three-dimensional sphere for the first time. The Sphere took the Square on a journey to experience worlds of other dimensions, including Spaceland (3-D), Lineland (1-D), and Pointland (0-D). Each place, like Flatland, had its own customs and methods for navigating social and physical spaces. One commonality among these worlds was the taboo of musing about a world beyond their pre-fixed dimensions. The Square's experience of these multidimensional worlds encouraged him to think beyond the presence of a third, fourth, fifth, or even sixth dimension. Since he could not perceive these on the physical level, he ventured into a new land embedded within his mind – the world of Thoughtland.

The geographic imagination bears a resemblance to the Square's Thoughtland. It unlocks the consciousness to the upper-level dimensions, or the *terrae incognitae*, of space and place (Wright 1947). This state of awareness travels seamlessly through a myriad of realities and lenses from which to view one's surroundings (Meinig 1979). This research seeks to understand how a Kansas third grader's spatial sense of community might transcend their previous "worlds" of understanding and unlock new and more sophisticated dimensions of community. Lynch (1960) justified this endeavor by emphasizing the importance of knowing how children develop their images of the world and how such images could be taught. As the literature will convey, students will need to reflect on their personal experiences of community in order to achieve greater levels of geographic enlightenment.

Learning progressions represent the current framework for geography educators to trace a student's journey of comprehending the "big ideas" for a certain subject. Learning progressions have been described as roadmaps, waypoints, and mile markers for student learning (Black, Wilson, and Yao 2011). Researchers in science and math education began using these terms in the mid-2000s (Alonzo and Gotwals 2014; Huynh, Solem, and Bednarz 2014). Geographers

have only recently been developing their own “maps” for learning progressions (Table 2.1). Three years before “A road map for learning progressions in geography education” (Huynh, Solem, and Bednarz 2014) was written, science education researchers Black, Wilson, and Yao (2011) wrote “Road maps for learning: A guide to the navigation of learning progressions.” Though the Huynh, Solem, and Bednarz (2014) publication does not cite Black, Wilson, and Yao (2011), the use of the phrase “road map” exemplifies one of the parallels between the trends in general education research and geography education research. The inherent geographic descriptors make learning progressions an intriguing topic for geography education researchers.

Table 2.1: Example of hypothetical geo-progression for how to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information (Huynh and Gotwals 2014).

Level	Description
4	Make spatial connections and relationships between phenomena at the local, national, and global scales.
3	Map spatial data collected from observations and external sources.
2	Use body to measure and understand distance and scale.
1	Match landmarks from a familiar environment to symbols on a map.
0	No understanding.

This chapter provides a critical review of the literature related to the understanding of learning progressions for the community theme, which has been identified for the third grade in the *Kansas Standards for History, Government and Social Studies* (Kansas State Board of Education, 2013). Community represents part of the “Expanding Horizons” model, a framework for elementary social studies standards that begins with sense of self in kindergarten, family in first grade, past and present in second, community in third, Kansas and U.S. regions in fourth, and the United States in fifth (Fore and Biermann 1998; Hume and Boehm 2001; Rutherford and Boehm 2004; Wade 2002). The community theme will be paired with the Standard Six of the

National Geography Standards: How culture and experience influence people’s perceptions of places and regions (Heffron and Downs 2012). This review will make the case that developing a learning progression for (spatial) sense of community will require multidimensional approaches.

Specifically, this chapter explores the inherent synergies and potential disconnections of major topics related to a sense of community as place and learning progressions (Figure 2.1).

The chapter begins by introducing how a Kansas third grader’s sense of community fits into the nature of modern geographic thought, followed by an overview of the opportunities and obstacles related to learning progressions. With a learning progressions-centered approach in mind, a critical analysis of the community theme and Geography Standard Six will be provided. Next addressed are approaches for student development along a dynamic learning progression. Focus will be placed the topics of constructivism, sociocultural path integrations, and geographies of education. Finally, sense of place, an educational outcome of the community theme, will be reviewed. Mental maps will also be discussed as an instrument for understanding sense of place.

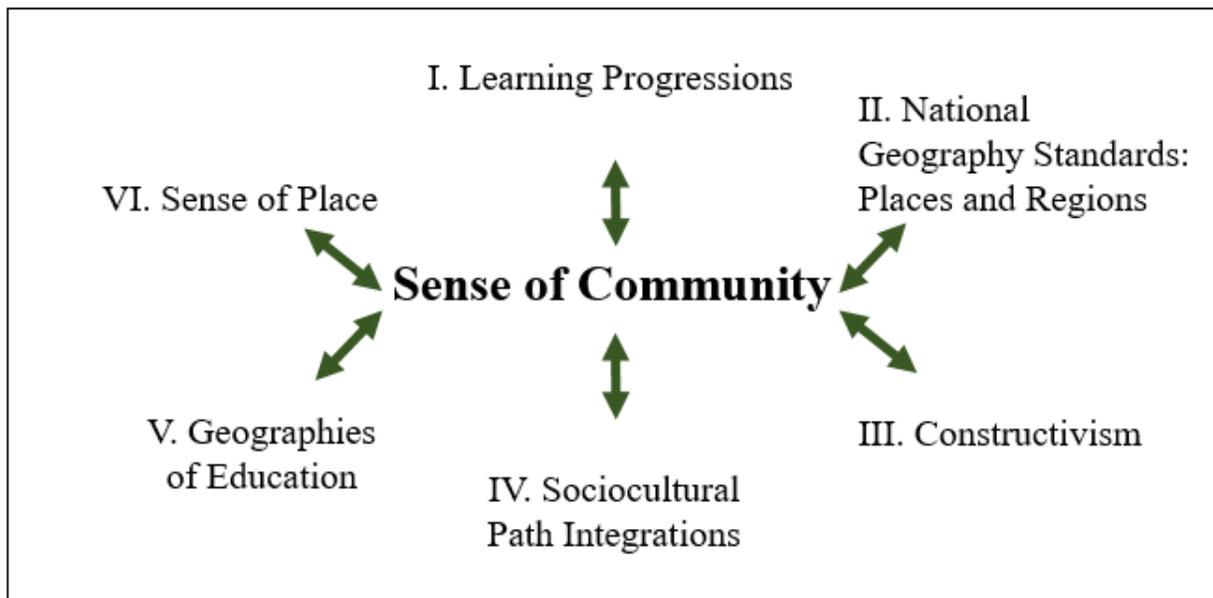


Figure 2.1: Elements of learning progressions for spatial sense of community.

Spatial Sense of Community and Geographic Thought

How a Kansas child makes sense of their community in spatial terms is a product of geographic thought and reason about the cultural and physical landscape. The world, even at the local level, is highly complex and multidimensional. Geographic knowledge helps an individual draw meaning and understanding from the environment (Golledge 2002). Geography has the potential to act as a “great unifier” of knowledge in which students can integrate and synthesize the concepts they learn in a science, math, language, or social studies course (Gober 2000).

According to Golledge (2002), the nature of geographic knowledge changed in the latter half of the twentieth century. Geographers began to recognize that there is difference between simply accumulating geographic facts and understanding the processes involved in understanding and analyzing those facts to produce new information and knowledge. Humanist and behavioral geographers like Golledge, Relph, Tuan, and others expanded upon geography to include how living beings, human or otherwise, perceive the world rather than limiting the discipline to study of the world itself.

Geography education has had a long history with perception studies among researchers conducting hermeneutic research ranging from humanists’ efforts like Tuan’s (1974, 1975a, 1977) work in perception of the environment, research on spatial cognitive development in geography education (Downs and Liben 1988), and Gersmehl and Gersmehl’s (2006) eight modes of spatial thinking. During the twenty-first century, geography education has been making headway on deepening the research on geographic knowledge in the U.S. education system, with the revised *Geography for Life* (Heffron and Downs 2012), the *Road Map for 21st Geography Education* (Bednarz, Heffron, and Huynh 2014), and *Learning Progressions for Maps, Geospatial Technology, and Spatial Thinking: A Research Handbook* (Solem, Huynh, and

Boehm 2014). Through these works, geography education has helped to increase interdisciplinary studies on the nature of geographic knowledge, especially connecting geography with developmental psychology and neuroscience, with the goal of applying these understandings to promote geographic literacy in the education system.

Through this study, I attempt to understand how Kansas third graders make sense of the highly chaotic and diversified environments they inhabit and experience every day, and to contribute to the push toward a greater understanding of the nature of geographic knowledge outlined by Golledge (2002). To do so, I have relied on three pillars from which to begin this exploration: Learning progressions, National Geography Standards, and the *Kansas Standards for History, Government, and Social Studies*.

Learning Progressions and Spatial Sense of Community

There is now an effort to conduct research on learning progressions in geography education, also called “geo-progressions” (Huynh, Solem, and Bednarz 2014). The year 2014 marked the introduction of learning progressions in geography education research. Two publications have facilitated the dialogue: *A road map for research in 21st geography education* (Bednarz, Heffron, and Huynh 2014), followed by *Learning progressions for maps, geospatial technology, and spatial thinking: A research handbook* (Solem, Huynh, and Boehm 2014). The former identified the need, while the latter provided the theory, methods, and applications. These efforts have coincided with the reevaluation and reinvention of research in geography education for the twenty-first century, in keeping with the current trends in education research.

Math and science education researchers began developing learning progressions in the mid-2000s for different reasons. Learning progressions in math were focused on pedagogy and classroom instruction, while learning progressions in science centered on large-scale assessment

and policy-making (Huynh and Gotwals 2014; NRC 2007, 214). With geographic educators trying advance their work, researchers are considering the theories and concepts researchers in other avenues of education are exploring. Learning progressions represent an example of such interdisciplinary collaboration.

Learning progressions are making advances in science and math education, but is the concept translatable to a child's spatial sense of community? From the perspective of math and science, the concept of community appears unfocused, broad, and subjective. As a result, there are numerous obstacles to reconcile, four of which are:

- *There is a lack of clear consensus about how to define a learning progression for math or science* (Shavelson and Kurplus 2012). This issue becomes problematic when approaching learning progressions for sense of place in the community because current geo-progressions research relies heavily upon the definitions and ideas provided by math and science (Huynh, Solem, and Bednarz 2014)
- *Students take multiple pathways along a learning progression* (Huynh and Gotwals 2014). A “one size fits all” approach to education cannot fully capture the subjectivity of student learning (Black, Wilson, and Yao 2011). Research steeped in mindfulness of individual pathways of students must be conducted to transform how geography is taught and represented in curricula.
- *There is a need for longitudinal studies to understand how students comprehend geographic standards and skills along a learning progression* (Huynh and Gotwals 2014). Previous research in learning progressions has surveyed students from various grades to understand the supposed breadth and depth of their subject

knowledge. These studies provide snapshots of learning progressions but do not detail the journeys to get there.

- *Geo-progressions are currently limited to a few geographic topics, leaving numerous unexplored aspects of the discipline.* The current literature has focused on the K-12 assessment of one element of the National Geography Standards – the world in spatial terms – with an emphasis in geospatial thinking, scientific reasoning, and geometric transformations (Mohan and Mohan 2014; Huynh and Gotwals 2014).

Along with spatial cognition, other well-researched areas in geography (*i.e.*, geography’s position within the humanities and social studies) can allow geo-progressions to diverge from the objective, “hard sciences” to venture into more multidimensional cultural components of the National Geography Standards. Learning progressions research could provide important insights for how to frame educational standards and related lessons that address the cultural landscape and human-environment interaction.

These problems present both obstacles and opportunities for the present research on the development of a student’s sense of place in the community. Developing and articulating a spatial sense of community has a broad and subjective nature, which makes it difficult to fit within the scope of the conventional sense of the learning progression for science, math, or even the current geo-progressions research on spatial reasoning. However, existing learning progressions in science, math, and spatial reasoning can serve as models to create a multidimensional learning progression for sense of place in the community.

Obstacle I: Defining a learning progression for spatial sense of community

There are a number of definitions to describe a learning progression, and therefore multiple ways of comprehending what a learning progression is and does. Researchers in science and math education have used multiple approaches. Learning progressions have already been integrated into math and science education, but under different and often conflicting definitions (Shavelson and Kurplus 2012). The intention of this section is to discuss these varying perspectives and draw from them a suitable definition of a geo-progression for a Kansas third grader's spatial sense of community.

Figure 2.2 displays the range of perspectives toward learning progressions. The y-axis represents the structure of learning progressions, from being hypothesis-driven and reliant on the scientific method, to endogenous and multidimensional. The x-axis describes the intention of the learning progression, from linear, sequential, and hierarchical to student-centered and aware of the geographies of students. This spectrum aids in the review of the discourse regarding the definition of the learning progression.

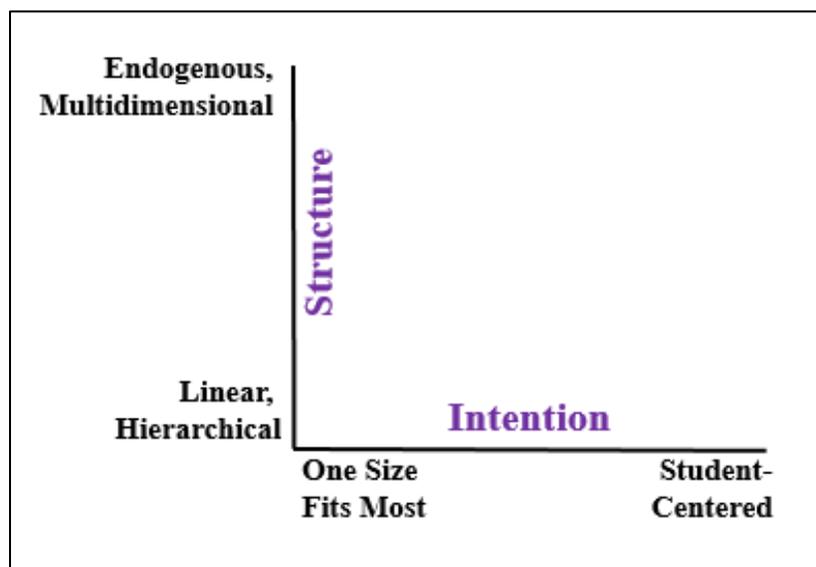


Figure 2.2: Spectrum for the variety of learning progressions approaches.

Particularly related to science, learning progressions are “descriptions of the successively more sophisticated ways of thinking about a topic that can follow one another as children learn about and investigate a topic over a broad span of time (*e.g.*, 6 to 8 years),” as described by the National Research Council (NRC 2007, 219). Essentially, the NRC viewed learning progressions as a sequential path that builds on a student’s previous understandings. Lehrer and Schauble (2015) took a different stance. Instead of using the phrase “ways of thinking,” the authors intentionally referred to learning progressions as “models” of how student learning develops over time. Furtak, Morrison, and Kroog (2014) provided an additional variation to these definitions, positing that learning progressions represent a developmental sequence that connects big ideas and their application within an educational environment.

For math, on the other hand, learning progressions have been defined as “empirically supported hypotheses about the levels or waypoints of thinking, knowledge, and skill in using knowledge, that students are likely to go through as they learn mathematics and, one hopes, reach or exceed the common goals set for their learning” (Daro, Mosher, and Corcoran 2011, 12; see also Huynh, Solem, and Bednarz 2014, 2). The math definition appears to be more specific than the science definition, focusing more on developing learning progressions using a scientific approach and assessment as the primary methods.

There remains, therefore, no clear consensus on the actual definition of a learning progression. The science and math conceptualizations of learning progressions have also met criticisms. Ford (2015) pointed out that they are not simply increasingly sophisticated ideas. Rather, they should also support the students’ understandings of those concepts. Therefore, special attention should be placed on a student’s cognitive development before, during, and after a learning progression (Black, Wilson, and Yao 2011). Likewise, Lehrer and Schauble (2015)

argued that learning progressions are not a static hypothesis to be tested, affirmed, and refined, as Daro, Mosher, and Concoran (2011) have claimed. Rather, a learning progression succeeds when there is more collaboration between researchers and educators to build coherent accounts of student learning.

Geography has come to a more amalgamated, syncretic understanding of learning progressions, combining aspects of the definitions presented in math and science in order to construct learning progressions for the first element of the National Geography Standards, “the world in spatial terms.” Huynh and Gotwals (2014, 2) note that geo-progressions promote “understanding how ideas build upon one another as students develop desired knowledge, skills, and practices in a discipline,” a definition which takes on the tone of being student-centered and possibly multidimensional. Huynh and Gotwals (2014) still include some of the more static concepts, such as hypothesized developmental progressions and structural sequences of thinking and learning as a component of learning progressions.

Another possible way of framing learning progressions includes Perry’s (1970) scheme of intellectual and ethical development. According to this model, the student may transition from a dualistic knowledge (What is right and wrong), to multiplicity/subjective knowledge (Multitude of perspectives with no external authority), to relativism/procedural knowledge (Distinguishing between subjective and objective analysis), and ending with commitment/constructed knowledge (Integrating knowledge from experiences and interactions with others). Perry’s (1970) scheme describes an alternate journey of learning about a subject like geography, in which a sophisticated understanding of something ultimately enables the learner to be able to distinguish the variety of dimensions of how a topic can be addressed or investigated.

Drawing from these definitions of learning progressions, this research adopts a syncretic understanding of geo-progressions in order to critically explore which aspects of the learning progression work for developing a sense of place in a community. However, a critical component for the community geo-progression includes the variety of paths students might take to construct their spatial sense of community.

Obstacle II: Multiple Pathways—Multidimensional Geo-Progressions

A students' experience along a learning progression is not linear, sequential, or hierarchal (Furtak, Morrison, and Kroog 2014; Hammer and Sikorski 2015). Black, Wilson, and Yao (2011) argued that a “one size fits all” approach to education is rarely successful. Concerning the development of geographical knowledges, Tuan (1977) noted that children's geographical horizons expand as they grow, but not in a step-by-step manner toward larger scales. Tuan (1974, 207) also said that in order to appreciate the imagery and attitudes that one develops of a place, one must “consult works that do not operate within the tidy canons of social science.” All students approach a subject according to their experiences and sociocultural backgrounds. When Kansas third graders are learning about their communities, they are assembling complex information in order to make sense of their world.

Student learning is highly individualized. Hammer and Sikorski (2015) point out that students' reasoning is often particular and idiosyncratic, especially when learning about the interconnected human and physical systems. This concept gets to the heart of Solem and Lambert's (2014) contention that progress in geographical understanding is complex. Even at the community level, places and regions are multifaceted, dynamic, and often chaotic spaces from which to draw meaning and understanding. Multiple pathways can be taken to move along a learning progression (Huynh and Gotwals 2014; NRC 2007; Black, Wilson, and Yao 2011;

Schwarz *et al.* 2012). As a result, researchers in science education have been advocating for more dynamic, multidimensional learning progressions that account for the complexity of student learning.

In the current literature on geo-progressions, researchers are also calling for multidimensional approaches (Figure 2.3). Stevens *et al.* (2014, 40) describes the multidimensional learning progression as “learning in terms of ideas and relationships between ideas both within and across multiple knowledge domains and has definable levels that are consistent across domains.” This perspective challenges the static approach to student learning in geography education. For example, Solem and Lambert (2014) identified a commonly-held belief, first proposed by Jean Piaget, that spatial thinking and map-making required instructional support that started with topological concepts from ages two to seven, followed by projective and Euclidian concepts after seven years of age. It is now understood that this view dismisses the fact that children in primary school are capable of understanding basic projective and Euclidian concepts (Solem and Lambert 2014).

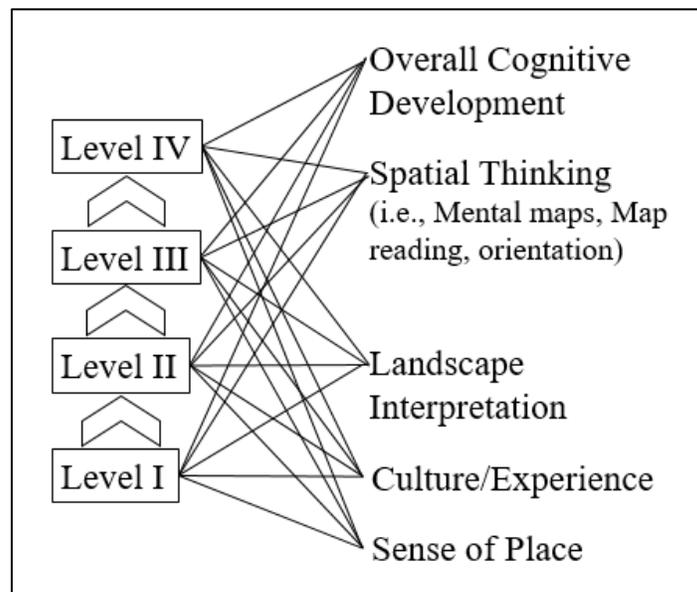


Figure 2.3: Diagram of potential components of multidimensional learning progressions in geography education.

In a Kansas third grade classroom, students are capable of constructing multidimensional perceptions of community by bridging what they have learned in class and their experiences. Multidimensional environments, like a community, require multidimensional learning progressions (Gunckel *et al.* 2012a, 2012b). The challenge is determining what these dimensions represent and how to connect these dimensions in a meaningful way within the learner's consciousness.

Obstacle III: Student Cognition along a Multidimensional Learning Progression

In developing multidimensional learning progressions, researchers in education have attempted to account for “big ideas” like environmental science and socioecological systems, which draw from multiple sources of information and require different types of thinking (Gunckel *et al.* 2012a, 2012b). Select problems in the academic discourse include research along a learning progression as well as alternative interpretations of how to measure the learning progression (Stevens *et al.* 2014).

Handing out surveys to students across multiple grade levels may not yield as meaningful results as following students as they move from one grade level to the next on their journey. There has been a call for more research of how the same students learn along a geo-progression (Stevens *et al.* 2014, Huynh and Gotwals 2014). In science education, the idea challenges researchers to not only show how ideas develop over time, but also how students apply those ideas to foster greater comprehension (Krajcik 2011). Longitudinal studies of students in one grade level (*i.e.*, Kansas third graders) might provide new perspectives on the nature of learning progressions, as opposed to a cross-sectional, multi-level approach.

Research in science education has already begun trying to answer how learning progressions fit into complex, interdisciplinary subjects like geography. There is a discrepancy

regarding worldviews and language-use between elementary students and a scientific understanding of dynamic socio-ecological systems (Gunckel *et al.* 2012a). To illustrate, Gunckel *et al.* (2012b) proposed and tested a discourse perspective to determine student development along learning progressions for environmental science. The authors found that students' mastery of the scientific discourse on a subject aided in their ability to comprehend complex socio-ecological models. As Gunckel *et al.* (2012b, 42) noted,

“These discourses provide the lenses through which people see and make sense of their world. People participate in many different communities during their lives and can thus draw on many discourses. They begin life with the primary discourse of their home communities...Beyond the primary discourse, however, there are other discourses which crucially involve...secondary institutions (such as schools, workplaces, stores, government offices, businesses, or churches).”

According to Gunckel *et al.* (2012b), students in an environmental science class are expected to begin with a primary discourse of what they already know and end with a secondary discourse endowed with new conceptions and understandings of the implications of socio-ecological interaction. Further, students grow in their paths along a learning progression by adopting the nomenclature of a specific discourse while being able to explain and apply that knowledge to personal experience, practices, and community situations. Stevens *et al.* (2014, 30) added to the topic by proposing a “branching structure” in assessing a student’s development along a progression. A “branching structure” acts more like a “braided stream” by posing a series of questions about a subject that begin with the broad, overarching concepts of an idea and weaving in increasingly specific and complex questions about particular dimensions of the learning progression.

The discourse approach is influenced by the concept of force-dynamic reasoning, which holds that the “theory of the world” can be unlocked in the basic grammar of any language

(Pinker 2007). Language shapes how people perceive and explain the events in the classroom (Gunckel *et al.* 2012b). Tuan (1974, 4) confirms this by saying that the worldview acts as an attitude or belief system which is largely constructed through social conditioning. For example, if a class were to learn how a plant grows, they might focus on “actors” (the plant or living thing) utilizing the “enablers” (needs of the plant) to achieve their goals (*i.e.*, to survive, to grow) (Stevens *et al.* 2014, 30). This is an inherently social way to structure a learning progression. Students use force-dynamic reasoning try to understand and communicate the interaction of a plant or animal with its surrounding environment, just as they would with themselves in their community. Essentially, force-dynamic reasoning combines linguistics with a broader interpretation of human-environment interaction to include any living thing (plant or animal) in question. Drawing from Gunckel *et al.* (2012b) and Stevens *et al.* (2014), this research attempts to make sense of the primary discourse of community for the Kansas third grader, determine if there indeed is a secondary discourse for this progression, and assess whether or not students have the resources to achieve a secondary discourse.

Obstacle IV: Extending Learning Progressions to Other Elements in Geography

Research on geo-progressions, as of 2016, remains in the beginning stages. The current status of geo-progressions research has focused on only one of the six essential elements of the standards: the world in spatial terms (Huynh, Solem, and Bednarz 2014; Table 2.2). There are three of the eighteen standards that fall under this element: 1) “how to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information,” 2) “how to use mental maps to organize information about people, places, and environmental in a spatial context,” and 3) “how to analyze the spatial organization

of people, places, and environments on Earth’s surface.” For the most part, the remaining fifteen National Geography Standards are unexplored territory in the realm of geo-progressions.

National Geography Standard	Essential Element
1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information	The World in Spatial Terms
2. How to use mental maps to organize information about people, places, and environments in a spatial context.	The World in Spatial Terms
3. How to analyze the spatial organization of people, places, and environments on Earth’s surface	The World in Spatial Terms
4. The physical and human characteristics of places.	Places and Regions
5. That people create regions to interpret Earth’s complexity.	Places and Regions
6. How culture and experience influence people’s perceptions of places and regions.	Places and Regions
7. The physical processes that shape the patterns of Earth’s surface	Physical Systems
8. The characteristics and spatial distribution of ecosystems and biomes on Earth’s surface.	Physical Systems
9. The characteristics, distribution, and migration of human populations on Earth’s surface.	Human Systems
10. The characteristics, distribution, and complexity of Earth’s cultural mosaics.	Human Systems
11. The patterns and networks of economic interdependence on Earth’s surface.	Human Systems
12. The processes, patterns, and functions of human settlement.	Human Systems
13. How the forces of cooperation and conflict among people influence the division and control of Earth’s surface.	Human Systems
14. How human actions modify the physical environment.	Environment and Society
15. How physical systems affect human systems.	Environment and Society
16. The changes that occur in the meaning, use, distribution, and importance of resources.	The Uses of Geography
17. How to apply geography to interpret the past.	The Uses of Geography
18. How to apply geography to interpret the present and plan for the future.	The Uses of Geography

Table 2.2: National Geography Standards, with Places and Regions and Human Systems Standards highlighted as potential extensions of geo-progressions research (Heffron and Downs 2012).

This research builds upon the literature about geo-progressions to investigate student pathways to learning standards that feature aspects of cultural geography along with places and regions. One of the recommendations made by Bednarz, Heffron, and Huynh (2014, 57) was for

more research on learning progressions in “domain-specific, interdisciplinary (e.g., watershed resources management; reading and interpreting maps and Earth images) contexts” in order to understand how geographic knowledge, skills, and practices develop across the different elements of the National Geography Standards.

Current publications have not made a clear identification of what a learning progression might look like in other facets of geography that include topics in the humanities and social studies, such as cultural landscapes, sense of place, or environmental perception. This endeavor reflects the spirit of *Rediscovering Geography*'s recommendation to “identify subjects where geography's current knowledge base needs strengthening” (Rediscovering Geography Committee 1997, xx; see also Bednarz and Bednarz 2004). Specifically, I intend to strengthen the knowledge base for Geography Standard Six, “how culture and experience influence people's perceptions of places and regions.”

Geography Standard Six and Spatial Sense of Community

This research builds upon geo-progressions literature about the world in spatial terms by assessing how children from different backgrounds gain an increasingly sophisticated conception for how culture and experience influence perceptions of places and regions (Heffron and Downs 2012). This National Geography Standard was paired with the third grade “community” theme of the *Kansas Standards for History, Government, and Social Studies*. The combination was made to reconcile the fact that geography in Kansas, as in the rest of the United States, is primarily taught as a strand or component of the social studies curriculum (Bednarz, Heffron, and Solem 2014). Therefore, it becomes essential to understand how the National Geography Standards might translate to state standards in history, civics, social studies, or government (Hume and Boehm 2001; Rutherford and Boehm 2004).

Regardless of the differences between the National Geography Standards and Kansas Standards, Standard Six and spatial sense of community are complementary in several ways. Both build upon students' previous knowledge and experiences of places and regions. The two standards also deal with the concept of place, particularly at the local or community level. The Kansas Standards for community have been written in a general and non-specific way, allowing for the incorporation of Geography Standard Six. In such a case, the third grader can be expected to learn how culture and experience influences people's perceptions of their physical *community*. Such an endeavor, as Jackson (1980, 114) explained, challenges the "student of landscapes" to reflect on how communities organize space by drawing up boundaries, divvying up the land, building road networks, and setting aside public areas. Additionally, the two standards contribute to the learner's understanding of worldviews and how identification of geographical perceptions of the same place or community might vary according to a person's background.

The learning trajectory for the K-4 Kansas Standards do not necessarily reflect the multidimensional nature of learning progressions. In the Kansas social studies classroom, K-4 students progress from sense of self (kindergarten), family (first grade), then and now (second grade), and community (third grade), to end with Kansas and Regions of the United States (fourth grade). This sequence represents the current sequence of "big ideas" outlined by the *Kansas Standards for History, Government, and Social Studies* (Kansas State Board of Education 2013). This progression, part of the "Expanding Horizons" model, bears a resemblance to the outdated Piagetian approach to learning progressions in geography critiqued by Solem and Lambert (2014). The concepts of self, family, then and now, and community seem more like endogenous interconnected concepts rather than hierarchical forms of sophistication.

If Solem and Lambert (2014) are correct, then an elementary-level student already has the ability to make important connections at the egocentric, family, community, state, national, and global scales. The goal for learning progressions will perhaps be to understand to what extent children are aware of these different spatial concepts and how to apply them to particular situations. In the third grade, the Kansas Standards expect students to understand multiple geographic dimensions of community, while providing little context (except for an appreciation of local history) for what forms of awareness and understanding will result. Under the geographic components of the community theme, students develop the ability to

“...draw conclusions about a sense of place, first in their community and then in relation to other cities...They will analyze how communities interact, using their community as a model (Kansas State Board of Education 2013, 37).”

Essentially, third grade students are expected to develop a heightened consciousness of their community and to be able to use a community-based sense of place as a framework from which to connect and construct knowledge in history, government, and social studies.

However, the Kansas Standards contains multiple absences of essential information that geography education research can fill. In fact, the word “geography” was present in the title of the 2004 version (*Kansas Standards for History and Government; Economics and Geography*) but absent in the 2013 version (*Kansas Standards for History, Government, and Social Studies*). In the current standards, there is no clear definition of what a community represents, except that it pertains to “local history” (13). Geography appears to act more as an afterthought rather than a necessary component to community. From a spatial perspective, the term is subject to a variety of perceptions and its scale can range from the home and expand to the neighborhood, the city, the state, the country, the continent, and the globe. Second, the term “sense of place,” a concept studied extensively by geographers, comes up frequently within the first, third, and fourth grade

standards with no indication as to what it actually means. Though not all “community” comes from geography, certain aspects of “community” and “sense of place” are important for improving geographic literacy and could be improved upon within the language of the standards.

The National Geography Standards provide a suitable reference to frame the community theme of the Kansas Standards. According to Geography Standard Six, the student is challenged to understand that culture and life experiences shape the way people perceive places and regions (Heffron and Downs 2012). The National Geography Standards define perception as including understanding of a place’s location, extent, characteristics, and significance. Children living in Hawaii will have acquired a very different perception of place when compared to children living in Kansas. Likewise, children within the same state and even the same school district can have markedly different worldviews based on their cultures and experiences.

The general outline of the Geography Standard Six learning progressions skip from 4th to 8th to 12th grade (Heffron and Downs 2012; Table 2.3):

- In fourth grade, the student should have the understanding that 1) People can have different views of the same places and regions and 2) People’s perceptions of places and regions change as they have more life experiences. The National Geography Standards holds that the student would be able to identify and describe how people view places in a community differently, and how these perceptions change over time as they go through their daily lives.
- In eighth grade, the same students should be able to understand that 1) People’s different perceptions of places and regions are influenced by their life experiences and 2) Perceptions of places and regions change by incorporating multiple direct and indirect experiences. In eighth grade, students are able to understand the

nature of how people construct their perceptions through different experiences of places and regions.

- Finally, when students are about to graduate high school, they should be able to
 - 1) Understand that people can view places and regions from multiple perspectives
 - and 2) Explain the possible consequences of people’s changing perceptions of places and regions in a globalized and fractured world. In twelfth grade, students can tie in matters of globalization, inequality, and other social issues into how people view places and regions.

Table 2.3: Learning sequence for Geography Standard Six (Heffron and Downs 2012).

4th Grade	8th Grade	12th Grade
Differing views of community	Perceptions of places and regions through direct (<i>i.e.</i> travel) and indirect experience (<i>i.e.</i> media, books, family)	How race, ethnicity, age, social class, etc. affect perceptions of places and regions
Place becomes more familiar the more it is experienced	How views of places and regions change as a result of media reports or interactions with other people	Consequences of globalization and inequality on perceptions of places and regions

These learning progressions for Geography Standard Six possess some congruities to the development of a sense of community proposed by the Kansas Standards. In both sets of standards, students are expected to understand their own perceptions of places and regions in relation to other people’s perspectives in order to understand concepts like globalization. One potential problem is that there is no specified third grade “waypoint” for Geography Standard Six. This research explores and discusses the practicability for developing a K-3 learning progression for Geography Standard Six.

Thus far, there has been no scholarly assessment of the effectiveness of a learning progression for Geography Standard Six. Additionally, there has been no account of what can be learned during the transition stages, also known as the “messy middles” (Huynh, Solem, and Bednarz 2014). Finally, the concept of place perception builds upon the current research in spatial thinking and incorporates a more interpretive form of the practice by weaving in culture, society, memories, and experiences into the brain’s ability to perform spatial reasoning (see Lengen and Kistemann 2012). Learning progressions research in geography may benefit from exploring how a Kansas third grader understands how culture and experience influences place perception according to ideas in educational theory, neuroscience, and humanistic geography about the progression of idea development.

Culture and Experience: Constructivism

Constructivism and learning progressions represent two educational ideologies that need to be melded together when considering a student’s spatial sense of community. While learning progressions focus on framing big ideas in terms of greater sophistication, constructivism holds that knowledge is built upon and influenced by an individual’s values and culture (Gibson and McKay 2001; Maxim 2005). The constructivist concepts of experience, emotion, and sociocultural backgrounds become essential to learning progressions for spatial sense of community. Constructivism can be divided into two subgroups of thought: cognitive constructivism and social constructivism. Both are important to developing learning progressions for sense of place in community because they are interrelated with student learning. Whereas cognitive constructivism focuses on the nature of the brain in relation to culture and experience, social constructivism emphasizes the importance of the child’s interactions within

the classroom environment, community, ethnic background, and family (Gibson and McKay, 2001).

Cognitive constructivism was introduced by Jean Piaget. When a child experiences new knowledge, they develop a schema based on that understanding. Schemas, according to Nuthall (1999, 304), are “generic knowledge structures containing the essential, or general, elements of a set of related experiences.” Schemas are further solidified by the interplay of emotions, meaning, and first-hand experience; they can then be linked into nested hierarchies, or scaffolds, which help the brain create meaning by identifying patterns. Scaffolds are similar to learning progressions in the sense that each level of learning builds upon existing knowledge structures to produce an increasingly sophisticated knowledge of a topic. Links between schemas are essential to how memory works in the brain (Gibson and McKay 2001; Maxim 2006, 269). Therefore, a child in Garden City, Kansas, will develop a series of schemas that are likely different from that of a child from Horton, Kansas, several hundred kilometers away.

Social constructivism, developed by Vygotsky, reflects the idea that knowledge is socially constructed through interactions with the friends, family, and other members of a child’s community (Gibson and McKay 2001). When looking at the local environment, children come into contact with a broad range of social experiences that can be tapped within the classroom to build a community-based sense of place. Catling (2006, 56) named some of the experiences that UK five-year olds come into contact every day, including

“...experience in and around the home and the local streets, with parents and other carers to the shops, play areas and parks, and visits to friends’ and relatives’ homes nearby and further afield, as well as days out and holidays in the UK and abroad.”

As Kansas third-graders proceed along a community or National Geography Standard Six learning progression, they should be experiencing both cognitive and social constructivist

approaches: one where they are creating links between new and old schemas about perception of a place or region, and another where they are reflecting on how their family, friends, sociocultural backgrounds, and classmates influence how they make sense of the world. Constructivism, thus, coincides with the essence of Geography Standard Six and a community-based sense of place. To understand how culture and experience influence people's perceptions of places and regions, it becomes ever more important to adopt constructivism in the classroom environment.

Constructivism provides the foundation for how learners develop an understanding of their surroundings, as well as how others construct their worldviews. As a result, students can better understand the intrinsic nature of their home, knowledge of the interdependency of living things and the physical environment, foster a fascination of interesting people and places, as well as address issues on the community and global level (Maxim 2006, 156-157; Sunal and Haas 2005). In a dynamic constructivist classroom, Maxim (2006, 270) stated that teachers

“assume the role of ‘tour guide’ on this journey, bringing in as much of the world as they can to school, creating a climate in which children are actively involved in the learning, and escorting the students as they strive to accomplish more difficult tasks or progress toward increasingly complex understandings.”

In this essence, learning progressions and constructivism complement each other. The two concepts are attuned to understanding how students learn and how that knowledge may be built upon as they navigate each grade level. In science education, Black, Wilson, and Yao (2011) and Wilson and Slone (2000) agreed that constructivist approaches must be considered within the cognitive development of the student along a learning progression.

Constructivism has been alluded to in the discourse on learning progressions specifically regarding environmental science. Environmental science, like geography, integrates a broad

variety of topics ranging from physical processes, cultural processes, environmental ethics, and social justice (Gunckel et al. 2012b). There is no one “big idea,” but a network of knowledge to connect in order to understand environmental science. Likewise, a student’s sense of place relies on a network of knowledge structures to be built upon with new information.

Constructivist learning progressions will help satisfy the consideration of multiple pathways along a geo-progression identified by Huynh and Gotwals (2014). The constructivist approach has been applied in numerous contexts within geography education research, particularly regarding cognitive development and spatial thinking (Downs, Liben, and Daggs 1988; Downs and Liben 1990). In a similar manner, Matthews (1984) emphasized a contrast between two forms of geography education that bear a resemblance to learning progressions and constructivism. He distinguished between two schools of thought about a child’s cognitive development: constructivist and linear incrementalist. The former, influenced by the works of Piaget, emphasizes the processes of accommodation and assimilation to aid in the evolution of the child’s awareness of their world. The latter, like learning progressions, suggests that environmental cognition “opens up with experience” through a linear series of successive stages. The two schools of thought, constructivism and learning progressions, work best when combined in order to better understand the multiple paths third grade Kansans might take toward learning about a sense of community.

Culture and Experience: Sociocultural Path Integrations

This research proposes an idea to bridge constructivism and geo-progressions: sociocultural path integrations. The term “path integration” is used by psychologists and neuroscientists when describing how the brain develops its mental maps of the environment.

According to Dudchenko (2010), path integration refers to the complex network of spatial information used to help a person navigate and make sense of their world.

“Path integrations” are just as cultural and social as they are spatial. For example, Tavares *et al.* (2015) confirms that the same parts of the brain used in perceiving space are also used in navigating social situations. The hippocampus represents a primary part of the brain that perceives and conceptualizes space (Dudchenko 2010). It not only manages one’s mental map for travelling to and from the grocery store, but it may also contribute to one’s ability to interact with people in a variety of social contexts. People who are more likely to think geographically may be more likely to become proficient in navigating social space as well as physical space (Tavares *et al.* 2015).

Sociocultural path integrations could provide a more scientifically sound understanding of how students make socio-spatial connections along a learning progression for a spatial sense of community. To further illustrate the fusion of culture and space in a child’s consciousness, Harvey (2001, 221) mused that

“There are mental and cognitive maps (perhaps even whole cartographic systems) embedded in our consciousness that defy easy representation on some Cartesian grid or graticule. The mental maps of children, of men and women, of the mentally ill, of adherents to different cultures and religions, of social classes or of whole populations, evidently vary greatly...How urban life is experienced and practiced, for example, has much to do with how we form and reform mental maps of the city.”

This “forming” and “reforming” of mental maps provides a major reason for why cultural “path integrations” can be used to understand how a student incorporates the cultural landscape of their community into their understanding of their surroundings. Nuthall (1999, 336) argued that

“If knowledge is understood as a recursive network of relationships between information, concepts and ideas that are themselves a network of further relationships, then all learning is interdependent

in the sense that what is learned about one part of a topic affects what is learning about every other part.”

Sociocultural path integrations do not stop at children’s homes. They are brought into the classroom and are influenced by the classroom content (*i.e.*, lesson plans and assignments) and environment created by the teacher’s pedagogical style, time spent on subjects that incorporate geographic thinking, and the extent to which aspects of students’ lives are integrated into learning course concepts.

Culture and Experience: Geographies of Education

There are differences between and within children and their experiences of the world (Catling 2006, 62). In order to understand the nature of sociocultural path integrations and geographic thinking, it is important to take a critical look at the geographies of education, or sociocultural backgrounds of students. Differences in student backgrounds influence how they learn about community and how culture and experience influence people’s perceptions of places and regions. Nuthall (1999, 337) addressed the importance of how socio-cultural processes are integrated into a constructivist framework and found while working in various classroom environments that what students learn is strongly determined by background socio-cultural knowledge and skills, reinforcing the idea that previous achievement is a good indicator of future achievement. According to Catling (2006, 62), children bring a “greater awareness, understanding, and skill potential than previously recognized.”

Holloway *et al.* (2010) identified with the lack of incorporating the social and cultural geographies of students in education research. The authors encouraged educators to see young people not as “objects of education” but as voices and perspectives on the topics brought up within the classroom. Catling (2005, 298) likewise desired for geography education researchers

to give voice to students in order to understand how they make sense of their experience in a changing world. Inquiring into the diversity of student backgrounds could help explain the diverse state of educational spaces within the ebbs and flows of capitalist relations, urbanization, rural geographies, migration, and environmental degradation, which are intrinsically tied to the Kansas communities being studied for this research.

Chen and French (2008) found that culture-based values and behaviors affect how children interpret classroom concepts as well as how they might interact when new information is presented within the classroom. The relationships between sociocultural background and student learning are especially represented in a 1990 study on immigrant students in Garden City, Kansas (Grey 1990). Migrants from Asia and (especially) Latin America have created a minority-majority population in this southwestern Kansas community. Much of this immigration has been rooted in the pull factors of jobs with the successful meatpacking and cattle feedlot industries that sprung up in during the second half of the 20th century. Grey (1990) recognized that the upsurge in immigrants calls for greater attention to education in multi-lingual classrooms, understanding minority student identities and social behavior, and assessing assimilation procedures to assure student success in the US education system. Although immigrant students come from regions rich in culture and history, they tend to drop out of high school early. Cultural context is imperative in developing quality geo-progressions and may be used to empower multicultural students with alternative perspectives on a community-based sense of place.

Chen and French (2008) concede that with the rapidly globalizing world, cultures are becoming more intersected, thus creating new frameworks for understanding the world. They assessed how social conditioning and peer relationships reflect social competence in cultural

contexts. For example, East Asian and Latin American societies tend to value cooperation, collaboration, and individual restraint from personal desires for the betterment of the group, whereas Western culture and children tend to value individuality. This dualism is rather simplified because social behavior tends to vary across and within cultures and communities. Sociocultural path integration offers a link between the cognitive and social constructivist viewpoints in geo-progressions and building a robust sense of community. Constructivist geo-progressions for sense of community must account for the geographies of students involved, as well as their sociocultural path integrations when developing their worldviews. The resulting product could create Phillips' (2014) idea of a renewed "space for curiosity" within the classroom.

Perceptions of Places and Regions: Sense of Place

Constructivism, sociocultural path integration, and research on the geographies of students address how culture and experience influences student learning of perception of places and regions. The concept of sense of place establishes an interrelation among culture, experience, spatial thinking, and place perception. Culture and experience (including classroom training) combine to form a particular "perception" of a place, environment, or region. Perception refers to the act of experiencing the world through the senses (Tuan 1974, 10-12). Perceptions are then evaluated from the perspectives of the cultural, historical, and spatial components of a person's worldview (Lengen and Kistemann 2012; Tuan 1974, 75). Perceptions create emotional ties, attitudes, values, meanings, and symbols, which combine to form a sense of place. Tuan (1974) referred to this condition as "topophilia," or the emotional connection between people and a place or a setting.

For geo-progressions and a spatial sense of community, sense of place becomes an object of study, while constructivism, cultural path integration, and geographies of education supply the approaches toward deepening geographical knowledge of the subject. Sense of place is multidimensional. It consists of geographic, biologic, and historic aspects. Wright (1947) alluded to this multidimensionality by saying that one does not experience the exact same landscape due to change over time. Same latitude and longitude, perhaps. But not the same place in its prior form. Change both in human cognition and environmental change affect the impression of the landscape being witnessed. More memorable physical components of a community contribute to the “imageability” of that place (Lynch 1960, 9). Under Lynch’s (1960) visual idea of “imageability,” an individual’s perception of place can be described as a series of images that are overlapping, interconnected, and operating on a variety of time and space scales. In a way, Kansas third graders are endeavoring to compile their own images in order to make better sense of the community. Developing a sense of place to trigger a place-based imagination and to attach meaning and knowledge to parts of the world is important (Catling 2005, 298-302; Sunal and Haas 2005, 27); Geography Standard Six and the Kansas community standard for third grade reflect this importance.

Sense of Place and the Geographic Imagination

The idea of sense of place was emphasized by human geographers beginning in the 1960s, when humanism and hermeneutics (ways of knowing) were favored over the potentially deterministic aspects of the quantitative revolution and the social components of post-structuralist thought like Marxism and feminism. Humanistic geography strives to understand the nature of the human condition through reflection and understanding, not explanation (Unwin 1992, 136). The movement was heavily grounded in existentialism and phenomenology, which

reject objectivity and hold that people construct different meanings, intentions, and constitutions of knowledge for a place or region (Relph 1976; Unwin 1992, 146-147; see also Starks and Trinidad 2007). Phenomenology, according to Seamon (2000), unifies the two philosophies that the person shapes the world and the world shapes the person. The two are inseparable and dialectic. When directed at a certain object or place in the world, like a community, one formulates a context of meaning derived from experience.

This change in perspective was fostered by such seminal works as Wright's (1947) "Terrae incognitae: The place of the imagination in geography," Lynch's (1960) *Image of the city*, and Tuan's (1974) *Topophilia: A study of environmental perception, attitudes, and values*. Since then, sense of place has gained wide popularity in higher education (Holton 2015a; Holton 2015b), science education (Stevenson 2011; Lim and Barton 2006), children's geographies (Min and Lee 2006, Lim and Barton 2010), neuroscience (Lengen and Kistemann 2012), environmental psychology (Lewicka 2010, Lewicka 2011), and geography education (Avriel-Avni *et al.* 2010; Gillespie 2010).

Sense of place is a natural component of being human (Relph 1976; Lewicka 2011). Place endows the landscape with meaning, filling it with lessons, emotions, memories, and questions. Sense of place is associated with place attachment, in which a particular area contains a certain amount of significance for an individual (Ainsworth and Bell 1970; Lewicka 2010). Within the brain, a person develops a sense of place through the interaction of brain structures within the limbic system (*i.e.*, hypothalamus, hippocampus, and amygdala) and prefrontal cortex (Figure 2.4). These parts of the brain allow for more intimate understandings of place by connecting thoughts, spatial cognition, and emotions (Lengen and Kistemann 2012).

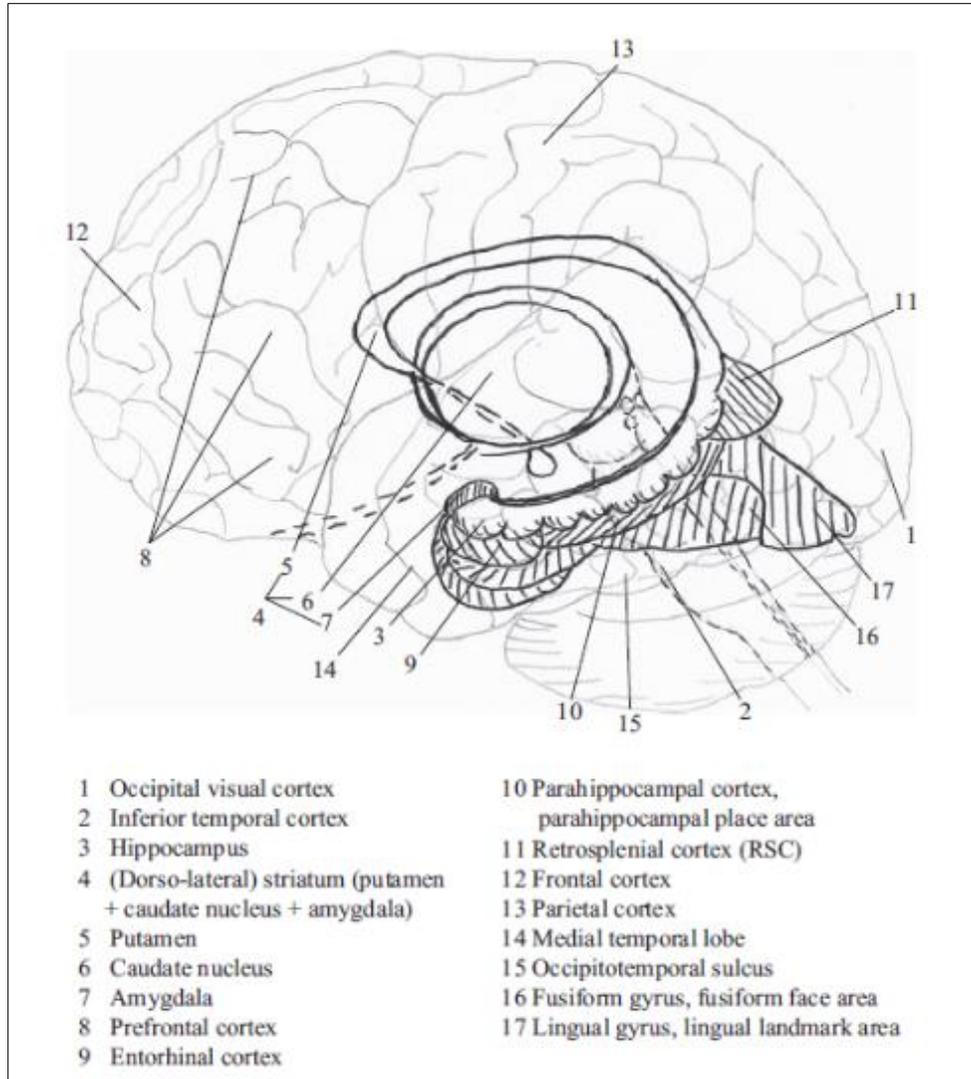


Figure 2.4: Diagram of brain (from Lengen and Kistemann 2012)

Sense of place provides the framework of attitudes, behaviors, and beliefs for how people perceive their world. This connection to place starts at a very early age, according to Catling (2006) and Tuan (1977). The philosopher and physical geographer Immanuel Kant posited that spatial cognition is inherent from birth (reference?). Kant's proposal holds true with current understandings of the brain. Through experiments with rats and other animals, neuroscientists have found that spatial thinking is tied to three types of cells within the hippocampus: The place cell (experiencing a particular location), the direction cell (facing a certain direction relative to

the environment), and the grid cell (understanding the environment in its entirety) (Palmer and Lynch 2010). Kant's sense of *space* mixes with culture and experience to form a child's sense of *place*.

Sense of place may act as a framework, but it is not static. Sense of community could very well be dependent on conditions like if a child has a good or bad day, whether there is disorder in the household, or if the kid has a craving for ice cream (see Hart 1979, 88). Place understanding and appreciation is constantly being created and reinterpreted within the minds of individuals through the accumulation of more experiences (Lengen and Kistemann 2012; Tuan 1977). The child's perception of place become more specific and geographical as she grows, learns, and experiences new things. Hart (1979) wrote that

“As the child explores, the landscape expands, both in extent and in degree of differentiation. Although many individual places may become invested with social meaning, I believe much of a child's landscape is experienced in a highly personal way.”

The study of someone's attachment to a place is dependent on not only the scale of the place, but also the synthesis of social circumstances, population density, access to services, type of landscape, and the strength of local social capital (Lewicka 2011). These variations can lead to an ambiguity in people's attitudes toward the environment (Tuan 1973). Golledge (2002) identified multiple aspects of the environment that one can gain from one place: physical space (*i.e.* the tangible natural world), the built environment, behavioral environment, socio-cultural environment, political environment, cognitive environment. Likewise, Meinig (1979) proposed ten other views from which to understand the landscape: nature, habitat, artifact, system, problem, wealth, ideology, history, place, and aesthetic. Thus, a third grade Kansas child's progression into and through the community level should tap into a “living map” that is constantly being constructed and revised in her mind.

Reasons for Sense of Place and Community Geo-Progressions

Sense of place provides one way to explore community learning progressions for several reasons. First, sense of place reconciles the overly generalized concept of community in the Kansas Standards. In the literature on sense of place, community floats between two major place scales in the sense of place research: neighborhood and city (Lewicka 2010). Tuan (1974, 210) referred to the neighborhood and community as manageable subareas one uses to make sense of the greater human ecology of the city. The neighborhood level has been the most studied place scale; studies of cities have been less frequent (Lewicka 2010). The term “community” takes on the role as a descriptor of aspects of a place (*e.g.*, “community open spaces,” “communal facilities in a neighborhood,” “community size”) rather than the object of study like the neighborhood or city (*i.e.*, Min and Lee 2006, 51; Lewicka 2011, 210). Words like neighborhood and community can also be challenging in terms of what they are supposed to describe or project for the student. According to Lewicka (2010), the meaning of a word like “neighborhood” does not translate well amongst cultures. As a result, the spatial dimensions of their community may look different for each student (and may change over time).

Sense of place also identifies a need for students to develop an ability to reflect on and communicate about how people make sense of the places and regions with which they have come in contact. It is with reflection related to how things might have been in the past that the local history component of the Kansas 3rd grade standards can come into play. Lynch (1960, 46) argued that the images and perceptions of a person’s community may influence the ability to become successful within social environments and to contribute to the overall betterment of a community. One’s image of the city, as Lynch (1960, 126) observed, provides an “ordering of knowledge” which acts as a complex and “ever unfolding document.” It is essential for third

graders to gain a sense of community because it will help them attach what they have learned to a physical place. How a place has developed in time and space provides a way for student to gain an advanced perspective on the local community.

Third, sense of place connects a student's perspective with that of their surroundings, as well as in connection to the diversity of perspectives of others. A deeper sense of place may help bridge an individual's student and non-student identity during the school year (Holton 2015b). As a result, a student's ongoing knowledge of community may be less-likely to be disjointed as they transition from "the outside world" into the cloister of the classroom. Rather, experience-based learning and classroom-based learning could meld together in a complimentary way. By tying in sense of place with education, students could be exposed to aspects of their community of which they may not have been previously aware. For students, their community will contain a patchwork of unknown and unexplored territories (see Wright 1947). Their surroundings can become spaces of deeper meaning and increasing opportunities for exploration both in and out of the classroom.

Mental Maps, Sense of Place, and Studies in Geography Education

Research in geography education has applied the use of mental maps to help understand how students imagine their surroundings (Matthews 1992; Mohan and Mohan 2013; Moore 1973). According to Tuan (1975b), mental maps are one way a person constructs and stores knowledge. Through a mental map, one can explore the imaginary worlds that third grade students have built to help them interpret their world. Mental maps tie events, people, and other features to the landscape. When multiple mental maps are produced over time, the differences might aid in the understanding of whether or not a student gained a heightened sense of sophistication regarding their sense of community. The term "mental map" is used in this study

in order to maintain consistency with Geography Standard Two, part of the “World in Spatial Terms” of the National Geography Standards (Heffron and Downs 2012), as well as the literature regarding geo-progressions (Huynh, Solem, and Bednarz 2014).

Seamon and Gill (2016) identified the use of map drawings in the psychologist Eva-Maria Simms’ (2008) research on children’s lived spaces in the African-American Hill District of Pittsburgh, Pennsylvania. These drawings were triangulated with in-depth interviews to create what Simms termed “narrative mapping.” For this research, I have attempted to use mental maps in a similar manner, where mental maps reflect the child’s spatial sense of community. Mental maps were used to understand how students organize, interpret, and represent their surroundings.

Among the studies of mental maps in geography education, two publications proved essential to the fundamental premise of this research: Matthews (1984) and Gillespie (2010). Matthews (1984) attempted to gain access to the environmental perception of elementary students’ understanding of the neighborhood in which they live. His work applied the use of mental maps to understand how students at varying grade levels visualized their neighborhoods. Through the use of mental sketch maps, the study found that age influences a child’s awareness of places, as well as the manner, style, and composition of their representations of space. The results confirmed that even the youngest participants in the study were able to represent their neighborhood in a variety of ways (see also Mohan and Mohan 2013). Though Matthews (1984) did not explicitly put his work in the context of learning progressions; his findings demonstrate that student imaginations of places and regions become more complex with age. Such an idea confirms Lynch’s (1960, 85) observation that a person’s mental map of a city is constantly in flux and is influenced by a lifetime of interaction and experience.

The work of Gillespie (2010) represents another model study for research connecting sense of place, community, and geo-progressions. Gillespie (2010) built upon Matthews (1984) and Lynch (1960) by employing mental maps and ethnographic methods to study how Amish and non-Amish children differ in terms of their mental maps of the same neighborhood. Her results show, in a visual way, that culture and socialization influence a child's awareness, sense of place, and perception of their surroundings. Specifically, Gillespie (2010) conducted a cross-cultural comparison of the difference between Amish and non-Amish children's sense of the same neighborhood. She found that most Amish mental maps depicted a barn or home as their neighborhood (Figure 2.5). On the other hand, most of the non-Amish mental maps included roads, landmarks, and features other than the area around their home. Gillespie's (2010) findings confirm visually that culture, society, and experience affect children's awareness, sense of place, and perception of their surroundings. The research presented here is an attempt to bridge Matthew's (1984) idea that a child's perception of the environment changes with age and Gillespie's (2010) findings that culture influences how a child visualizes her community.

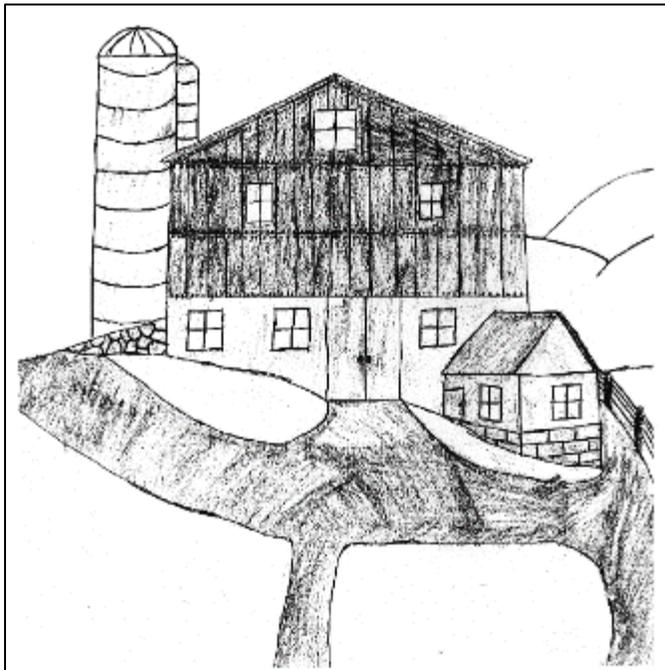


Figure 5. Sketch map by a thirteen-year-old Amish boy.

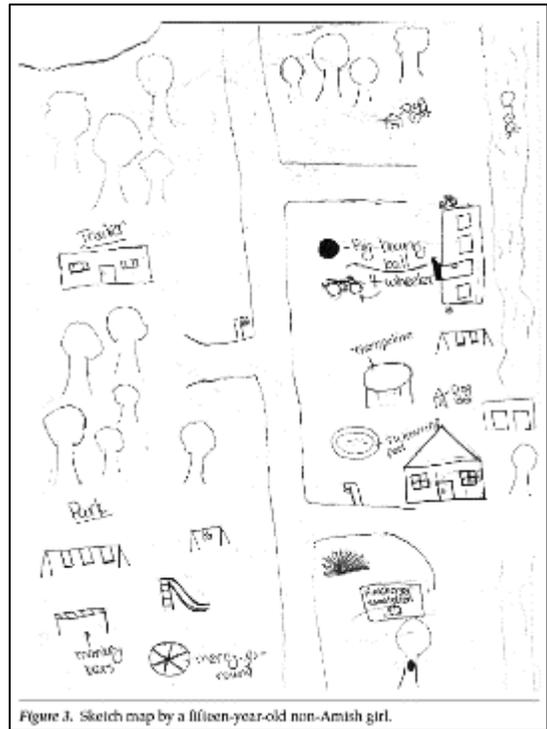


Figure 3. Sketch map by a fifteen-year-old non-Amish girl.

Figure 2.5: Example of an Amish map versus a non-Amish map of a neighborhood (from Gillespie 2010)

One of the major issues with using mental maps is the concern about how to analyze them. Lynch (1960) specifically had participants from the three cities he studied (Boston, Los Angeles, and Jersey City) draw mental sketch maps of their city and proceeded to create composite maps that described significant parts of the area for the participants (Figure 2.6). Lynch (1960) also developed five codes to analyze individual “images” of a city: Paths, edges, districts, nodes, and landmarks. Paths represent channels of movement, such as streets, walkways, transit lines, canals, and railroads. Edges account for the boundaries between two places, like the edges of development, shores, and walls. Districts are regions within the city, conceived of as having a two-dimensional element and having some common identifying character. Nodes are strategic points within the city into which the observer can enter, such as

junctions, crossings, the convergence of paths, and cores of a district. Landmarks are points varying in scale that are external, such as buildings, signs, stores, and mountains.

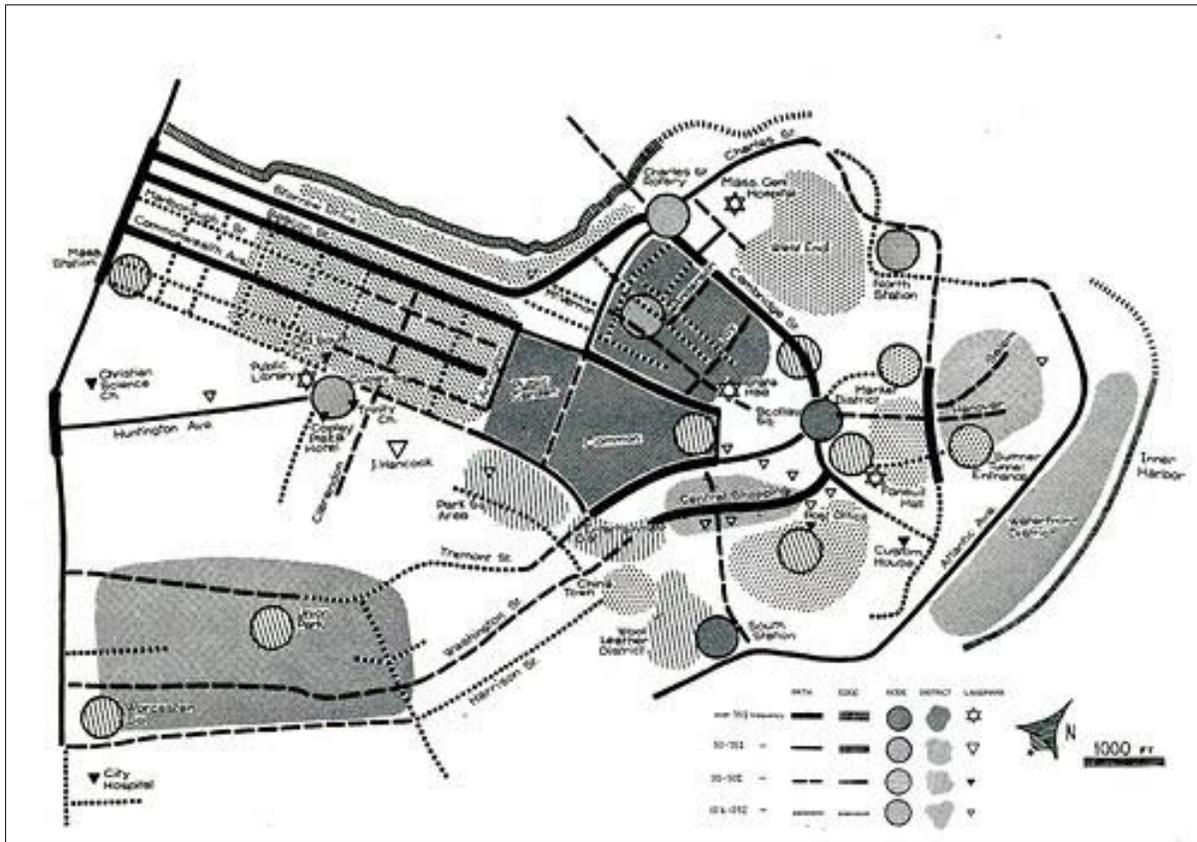


Figure 2.6: Example of a composite mental map created from Lynch (1960).

Matthews (1984, 94) established another style for coding mental maps with six elements of a place: functional, recreational, natural, personal, transportational, and animal. Functional features represent aspects of the built environment, recreation represented play and leisure spaces, natural elements were aspects of the natural environment, transportation represented the mode of transport, personal referred to people in the sketch map, and animal referred to the animals represented in the drawing.

Matthews (1984) also applied multiple qualitative methods of analysis to his study, such as assessing cartographic competence. Stemming from the work of Moore (1973), Matthews

(1984, 95-96) developed a three-level grading scale, with Grade I (Lower form: Pictorial, Higher form: Pictorial-Verbal) being a pictorial representation from the ground level, often displaying the sides of features as though they were laid down (Figure 2.7). Grade II (Lower form: Pictorial-Plan, Higher form: Pictorial-Plan-Verbal) shows some ability to scale, symbolize, and rotate the view from horizontal to a horizontal-aerial combination. Grade III (Lower form: Plan, Higher form: Plan-Verbal) represents the ability to provide a complete aerial and symbolic transformation of space.

The Matthews (1984) levels provide an opportunity to analyze how children visualize their spatial sense of community from a cartographic standpoint. These levels were used in this study to analyze the ways in which Kansas third graders portrayed their communities over time. There is one aspect that separates how this study uses the Matthews levels: whereas Matthews (1984) used them to determine how well students could cartographically represent their neighborhood, this study applied the levels to understand how Kansas third graders chose to express their depiction of a community. In other words, this study identified the levels as nominal categories that were no better or worse from another — just different. For example, a Level I Lower (Pictorial with no labels) and a Level III Higher (Plan with labels) mental map would be treated as equally credible in terms of a student's visual representation of community.

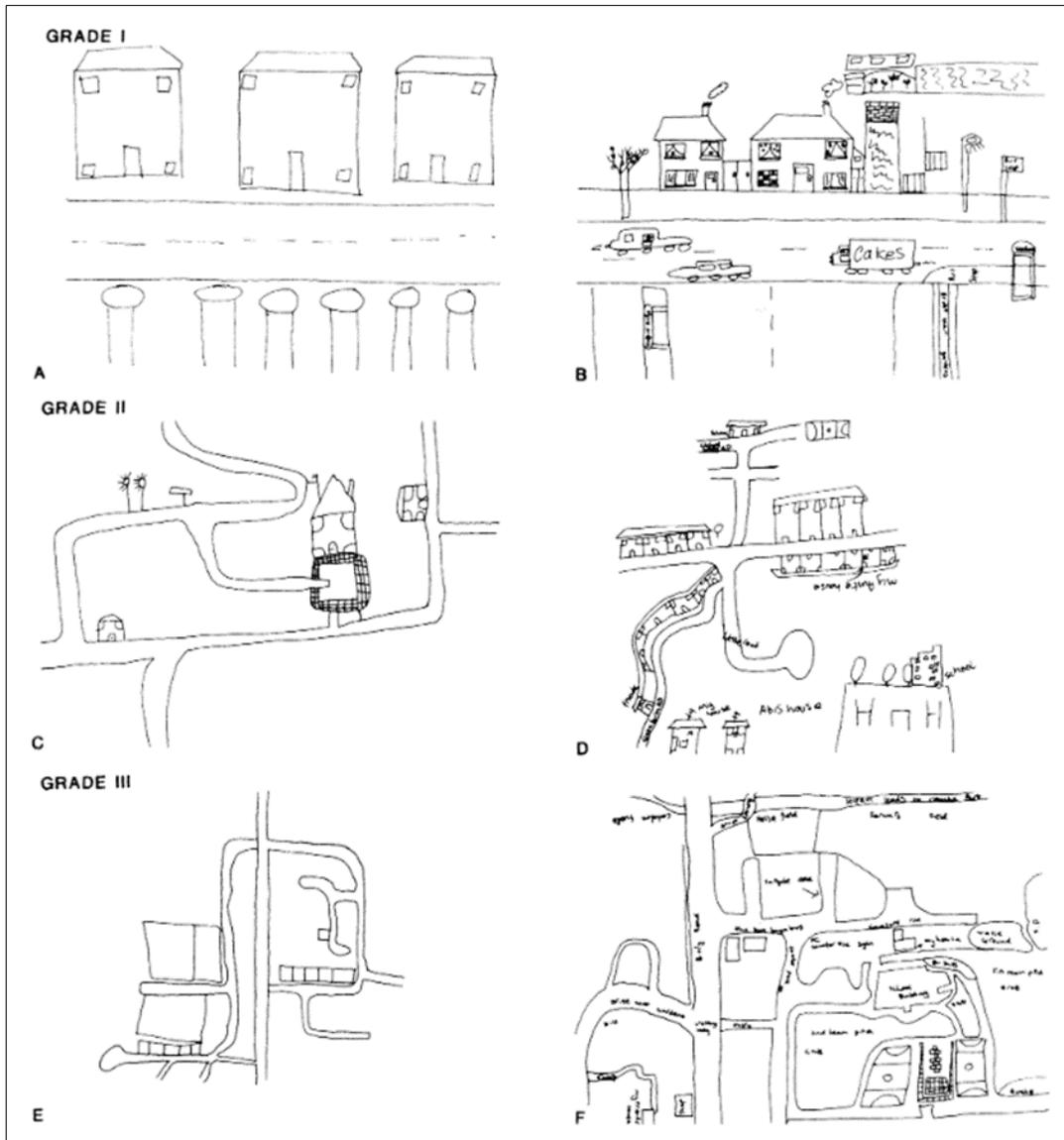


Figure 2.7: Mental map level examples from Matthews' (1984).

Gillespie (2010) used a combination of codes adopted by Lynch (1960) and Matthews (1984). The author drew from Lynch (1960) in the creation of her “Designative Categories,” which included landmarks, paths, edges, and districts. Her study diverges from Lynch by replacing “nodes” with the “social” category, representing humans at work and play (21). Drawing from Matthews (1984), Gillespie (2010) included in her coding six “Appraisive Categories,” including function, recreation, nature, transportation, person, and animal (Table 2.4). During the mental map coding process, Gillespie (2010) used “Designative Categories” to

indicate the number of instances a particular theme arose in a mental map. To gain a deeper understanding of these features, she used the “Appraisive Categories” to identify some of the more interpretive aspects of a mental map drawing. For instance, a mental map might contain five landmarks (Designative Category), but two of those landmarks may represent homes and the other three may symbolize fast food restaurants. Under the “Function” Appraisive Category, the fact that these landmarks consisted of homes and restaurants highlights the various types of features found in the built landscape visualized by a student’s mental map. After coding the mental maps, Gillespie (2010) then applied a statistical and qualitative analysis to the Designative Categories and utilized the Appraisive Categories to delve more into the meaning behind certain features in the mental maps. My research mirrors Gillespie’s (2010) approach to coding mental maps and Matthew’s (1984) cartographic levels to assure academic consistency.

Table 2.4: Designative and Appraisive Categories for mental map coding (Gillespie 2010).

Designative Categories	Appraisive Categories
Landmarks (buildings or point features)	Function (aspects of the built environment)
Paths (any continuous line drawn between two or more points without a break)	Recreation (play and leisure spaces)
Edges (boundaries)	Nature (aspects of the natural environment)
Districts (areas or sections of a city or town displaying a high degree of homogeneity)	Transportation (mode of transport)
Social (humans at work or play)	Person (human figure)
	Animal (animal figure)

Mental maps have received numerous criticisms for the limitations that they put on child respondents. There has been much debate over the validity and appropriateness of sketch maps (Matthews 1984, 86; Mohan and Mohan 2013). Hart (1979, 10) wrote that geographers have been naïve in their supposition that people have “maps” in their heads of different places, though

this opinion seems to be taken more literally than it should have. From Hart's (1979) standpoint, the word "map" implies a static visual representation of the world that does not account for the variability of how the mind makes sense of the world. The term "mental map" serves more as a metaphor, according to Matthews (1984, 98). Environmental perception that creates mental maps is not fixed, and place knowledge is "not to be confused with ever-conscious images of the world in which a person refers when making spatial decisions, as though the brain contains a map (12)." Hart later wrote regarding his research conducted in a New England town:

"Drawings or sketches were unacceptable not only because of the very great variation in motoric and graphic ability with age, but because the pencil or pen brings a degree of commitment to each element drawn which is unsuited to the creative act of constructing a map (92)."

Likewise, Matthews (1992, 99) identified four major issues from the literature involving the use of mental maps in child ecological perception research:

1. There is considerable variation among children's maps not only because of differences in spatial competence but also of manual graphic ability.
2. Mental maps are difficult to handle, score, code, and analyze.
3. Often children's maps lack conventional mapping symbolizations and representation.
4. Children are more likely to filter their environment maps by drawing what is *mappable*, rather than what they actually experience.

Matthews (1992, 100) contested the idea that mental maps are altogether invalid for the above reasons. He made the point that linguists experience similar difficulties when determining the evolution of language. Incrementalists, whose ideas most coincide with the sequential nature of geo-progressions, tend to be less critical of respondent cartographies, arguing that these types of graphic responses do indeed reflect cognitive abilities and visible thinking (88). Matthews

(1984, 90) also argues from the standpoint of Siegel, Kirasic, and Kail (1978) that mental maps allow for “both quantitative and qualitative changes of spatial comprehension to be examined and, it can be inferred, that those features represented should have symbolic significance for the individual.” These perspectives, according to Mohan and Mohan (2013, 10), should serve as a take-home message that a “given curriculum cannot assume that children have mastered any or all of these [mental map] concepts by a given age.”

Conclusion

For a student to display a sense of community in school, measures to account for how brain processes, sociocultural backgrounds, and sense of place intersect to create a student’s worldview must be taken. Students construct realities based on their culture, experience, and spatial cognition abilities to produce sociocultural path integrations that help them make sense of community. As Jackson (1980) stated, “This great world is a mirror where we must see ourselves in order to know ourselves.” A multidimensional learning progression should turn the mirror on the student to reveal how they identify with the landscape.

Learning progressions in geography education offer numerous opportunities for research on how students comprehend and build dynamic geographic concepts. Special attention has been placed on human systems, and specifically the places and regions element, of the National Geography Standards, with the intention of developing a multidimensional learning progression. This research contributes to the possibility of creating a meaningful dialogue for defining a geo-progression for geography standards involving the arts, humanities, and social sciences – clearly a different mindset than a learning progression in science or math. Some exemplary alternative methods highlight multiple pathways along a learning progression, including longitudinal studies (Stevens *et al.* 2014), fostering discourses (Gunckel *et al.* 2012b), force-dynamic reasoning

(Gunckel *et al.* 2012b; Stevens *et al.* 2014), and using mental maps to interpret a student's sense of place (Gillespie *et al.* 2010). In the end, it seems that the community theme and Geography Standard Six intends to help guide students in geography and social studies in understanding, communicating, and developing a deeper sense of place.

Chapter 3 - Methods and Site Selection

How can a spatial sense of community be measured? More importantly, how can changes in sense of community be identified? Sense of place expands and contracts, inhales and exhales. Community as a concept is a fluctuation of senses, stimuli, and perceptions that may or may not remain constant, much less progress in an increasingly “sophisticated” manner. “An authentic attitude to place,” Relph (1976, 64) wrote,

“is thus understood to be a direct and genuine experience of the entire complex of the identity of places—not mediated and distorted through a series of quite arbitrary social and intellectual fashions about how that experience should be, nor following stereotyped conventions.”

Sense of place cannot be measured to some degree of logical positivist accuracy. Through the muddled mess of a child’s everyday life, this exploratory research seeks to identify an understanding of the progression of thought about place in community, if any, as Kansas third graders proceed through the school year.

This research is characterized as early-stage, or exploratory research, as noted by the Institute for Education Services in the *Common guidelines for education research and development* (IES 2013). Early-stage research in education consists of examining

“relationships among important constructs in education and learning to establish logical connections that may form the basis for future interventions or strategies to improve education outcomes” (IES 2013, 9).

The methods used in this exploratory research were selected to tap into the “imagination that children demonstrate in their ‘place-based’ and ‘environmental’ play,” which pulls “from family activities and discussion, travel, stories and television – and can be supported and enhanced in school to extend and deepen their understanding of places and environments” (Catling 2005,

298-299). This study does so on a very rudimentary level and barely scratches the surface of understanding a Kansas third grader's spatial sense of community, but employs qualitative and mixed methods to begin the process of identifying and triangulating how a child's sense of community changes over half of the school year.

Four methods were selected to explore the essential elements of learning progressions for sense of community: longitudinal/comparative case studies of four communities, mental map analysis and coding, focus group interviews with students, and semi-structured interviews with teachers (Figure 3.1). The mental maps were selected to enable students to graphically communicate their perceptions of community; the focus group interviews with students were meant to have students elaborate on their mental map drawings and explain some of the social aspects built into their spatial sense of community; and the teacher interviews were used to triangulate the student responses, as well as provide more in-depth information about class content and student learning.

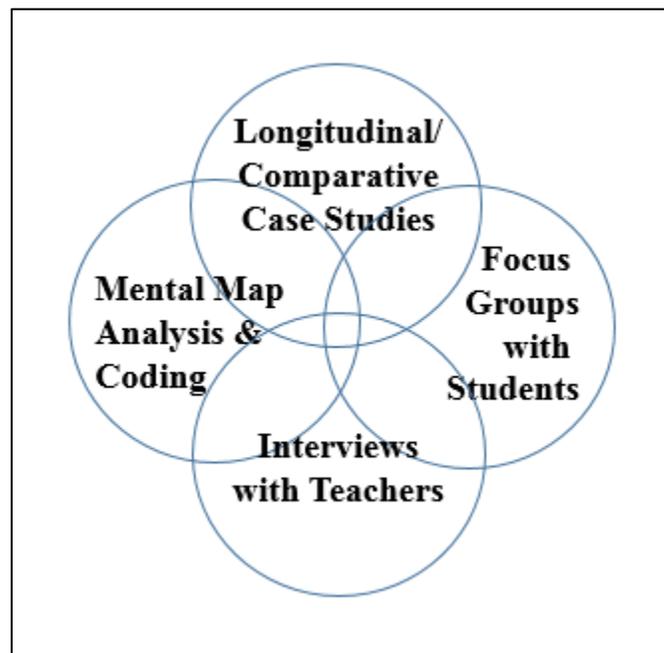


Figure 3.1: The four methods selected for study.

Participants from seven third grade classrooms from four communities (151 students in September 2015; 148 students in January 2016; 130 students common to both rounds) were asked to draw mental maps of their communities, once in September 2015 and a second time in January 2016. Each classroom was located in a demographically, spatially, and environmentally distinct part of Kansas: Garden City, Horton, Manhattan, and Junction City (Figure 3.2). The mental maps, focus groups with students (21 groups interviewed each round, 42 total), and teacher interviews were intended to visualize and verbalize the variability of how children perceive the spatial component of their communities and how this awareness might change as they proceed along a geo-progression. On each occasion, participants were interviewed within focus groups of 5-10 students. During each interview, the participants were asked to define what a community is, explain what they included and did not include on their mental maps, and talk about what they learned during the school year or already knew about community. Five of the six teachers involved in the study were interviewed to determine how student learning is influenced by educational content, use of standards, and influence of culture, experience, and socioeconomic status.

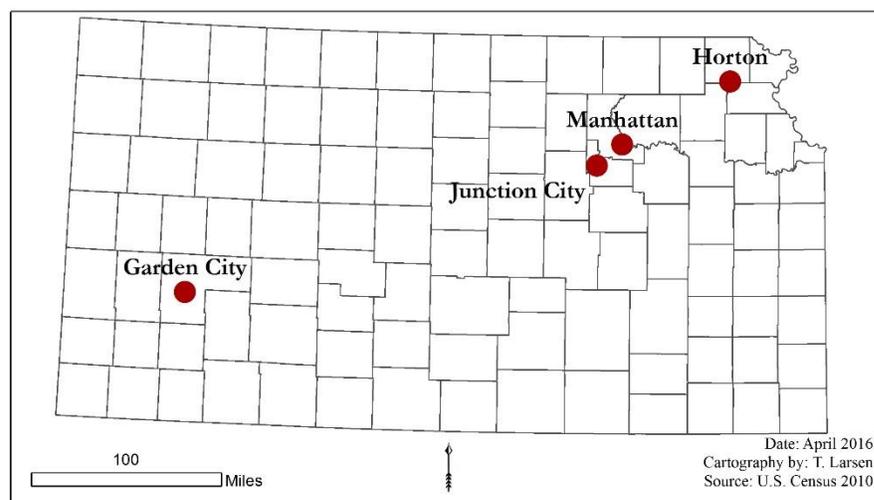


Figure 3.2: Map—Locations of study communities in Kansas.

This chapter is divided into two sections. The first details the school selection process and the sociocultural makeup of each community because these details provide a situational context from which to understand the results of the study. The second section critiques each of the four methods, identifies their strengths and weaknesses, and justifies the reasoning for selecting each method.

School Selection Process

Communities have been compared to a “theater in which social interaction takes place” (Whiting and Edwards 1988, 18). But to gain access to the theater, one must find a way to obtain a ticket. The timeline for this study included gaining permission from Kansas State University to do research involving human subjects through an Institutional Review Board (IRB) application, the process of selecting communities, finding teachers willing to participate, and gaining permission to conduct research during class time. Simply getting approval and access to a classroom within a school district involved a multi-tiered process over the course of one year (Table 3.1).

Table 3.1: Timeline of events for the study.

Spring/ Summer 2015	September 2015	Fall 2015	December 2015	January 2016	Spring 2016
IRB application; Contact teachers and school districts; Gain permission and set date for first round	First round of mental maps and interviews	Analyze data from first round	Set date for second round of study	Second round of mental maps and interviews	Analyze interviews and mental maps

During the spring and summer of 2015, school districts were selected based on their community settings and population demographics. Studies in behavioral ecology and ecological psychology place specific boundaries on the communities that they select to understand the

nature of how children experience place. Barker and White's (1954) acclaimed *The Midwest and its children* was an ecological behavioral study of children in Oskaloosa, Kansas. Barker and White (1954, 17) selected the town for numerous reasons: it was small enough for all people to be included as specific parts of the study, it was geographically and socially segregated but not isolated from American popular culture, it was unified in terms of community and accessible, it possessed no special conditions that would make it atypical, and its citizens were willing to participate.

This study was not as selective as Barker and White (1954), but I did seek to incorporate several communities that may feature a range of perspectives at the third grade level. The goal of the school selection process was to obtain a sample of multiple cases that bore stark contrasts. This criteria coincides with Whiting and Edwards' (1988) *Children of different worlds*, which featured 12 communities spanning the countries of Kenya, Liberia, India, Mexico, Philippines, Okinawa, and the United States. Whiting and Edwards (1988, 18-20) and colleagues dedicated over fifteen years toward how children in these communities were shaped by the social aspects of community in which they lived. This study attempts to feature a variety of community settings within the state of Kansas.

Compared with other aspects of the research setup, the IRB process at Kansas State University was relatively straight forward. During the site selection process, it became clear that personnel in each school district have their own values, customs, and personnel hierarchies related to research decisions. One barrier to acceptance included the supposition of district administrators that class time devoted to research might waste valuable learning time for the students. I was also limited in terms of the connections I had to "gatekeepers" within the school districts that might have helped me gain acceptance. In one school district, a new superintendent

was appointed and refused my research on the premise of not wanting to make any decisions before settling into his position. There was also an inherent suspicion of many school district administrators of outside researchers like myself, regardless of my belonging to a university that is well-known for educational research within the state.

I contacted school districts in Wichita, Kansas City, Topeka, Emporia, Shawnee Mission, Garden City, Horton, Junction City, and Manhattan. School districts with larger populations tended to be more likely to decline involvement in this research. School districts in three of the largest Kansas communities, Wichita, Kansas City, and Topeka, rejected the study proposal. Small towns and mid-size urban areas tended to be more receptive. Local IRB applications were submitted to (and later accepted by) Garden City, Horton, Junction City, and Manhattan because school district administrators indicated interest in the research, and this interest was further supported in some districts by Kansas Geographic Alliance (KGA) members living in the area. Eventually, Emporia and Shawnee Mission indicated interest in the research project and provided forms and materials for their IRB application process. However, the four communities that had already accepted represent varying economic geographies, population demographics, and community characteristics (*i.e.*, urban vs. rural), so it was decided that there was no need to pursue additional work with these school districts. Upon approval, effort was made to contact third grade teachers in the school district willing to have their class(es) participate in the study. Members of the KGA living in Manhattan, Junction City, and Garden City acted as “gatekeepers” helping to connect the researcher with teachers in the first three communities and providing the researcher with added credibility for the IRBs of each school district. Horton was the only school district who granted access for research without the need for a network connection via the KGA. Students for each class were required to have their parents sign

informed consent forms. Once the previous conditions were met, the next step was to set a day and time for the study.

Case Studies Overview

Four longitudinal, comparative studies were used to follow a series of third grade classrooms as they progress through half of the 2015-2016 school year. The case studies included one classroom in Manhattan (one teacher), one classroom in Horton (one teacher), two classrooms in Junction (two teachers), and three classrooms in Garden City (one teacher from August to October 2015, another from October 2015 to May 2016). The original teacher in Garden City was reassigned to teach reading and writing during the middle of the fall 2015 semester. A different teacher picked up where this teacher left off.

In learning more about these communities, the researcher explored the areas in order to obtain a local literacy or sense of place for each area. Walking around a community has multiple benefits, such as familiarizing the researcher with a place; helping them become immersed in the geography of flows, boundaries, and connections within and across landscapes; increasing awareness of how spatial and temporal boundaries change over time; and complimenting additional methods by shaping new questions for the researcher to consider rather than provide answers (Pierce and Lawhon 2015).

The demographics for each community (Table 3.2), number of students within each school district (Table 3.3), and number of third grade students enrolled in each district (Table 3.4) were calculated using data from the U.S. Census 2010, the Kansas State Department of Education, and the Kansas Data Access and Support Center. Careful consideration was given to whether or not to provide the demographics of each classroom in the study. It was decided to not include such information in order to refrain from constructing inaccurate generalizations about

ethnicity and race. It is also important to note that the students, teachers, and school districts participating in the study have been held confidential to protect the identities of those individuals and institutions involved.

Table 3.2: Racial/ethnic identities each city as a whole.

City	Total Pop.	Hispanic or Latino %	Black %	Asian %	American Indian or Alaska Native %	Multi-Ethnic %	White %
Garden City	26,658	48.6	2.8	4.4	0.9	2.9	74.7
Horton	1,776	3.7	0.8	0.5	10.7	4.6	82.5
Junction City	23,353	13.0	22.3	3.9	0.9	7.3	60.7
Manhattan	52,281	5.8	5.5	5.1	0.5	3.5	83.5

Table 3.3: Racial/ethnic identities of total students (K-12) enrolled in each school district, 2015-16.

District (number enrolled)	Hispanic or Latino %	Black %	Asian %	American Indian or Alaska Native %	Multi-Ethnic %	White %
Garden City (7813)	70.4	1.5	4.7	< 0.2	1.8	21.4
Horton (566)	6.9	< 3.5	< 3.5	22.6	< 4.6	65.5
Junction City (7809)	17.3	19.2	4	1	9.4	49.4
Manhattan (6370)	13.1	7.8	4.6	0.6	7.8	66.2

*To protect the identities of students, school districts are required by the Family Educational Rights and Privacy Act (FERPA) to not display numbers less than ten students for each gender (Male or Female) of each race.

Table 3.4: Racial/ethnic identities of third graders enrolled in each school district 2015-16.

School District (number enrolled)	Hispanic or Latino N (%)	Black N (%)	Asian N (%)	American Indian or Alaska Native N (%)	Multi-Ethnic N (%)	White N (%)
Garden City (615)	416 (67.6%)	< 20*	42 (6.8%)	< 20	< 20	132 (21.5%)
Horton (50)	< 20	0	< 20	< 20	< 20	28 (56%)
Junction City (713)	126 (17.7%)	117 (16.4%)	26 (3.6%)	< 20	66 (9.3%)	366 (51.3%)
Manhattan (492)	67 (13.6%)	31 (6.3%)	22 (4.5%)	< 20	41 (8.3%)	324 (65.9%)

*Any statistic with a less than symbol means that there are less than twenty students belonging to that demographic. To protect the identities of students, school districts are required by the Family Educational Rights and Privacy Act (FERPA) to not display numbers less than ten students for each gender (Male or Female) of each race.

Geography of Kansas

The spectrum of Kansas landscapes transition east to west, from lowlands in the east, to the rolling Flint Hills, to Smoky Hills in the central region, and the expansive High Plains of the western portion. Ecosystems transition from oak-hickory/deciduous forest and tallgrass bluestem prairie in the east to sandsage-bluestem in central Kansas to shortgrass grama-buffalograss in western Kansas. The far corner of southeast Kansas borders on the Ozark physiographic region prominent in Missouri and Arkansas.(Kuchler 1972, 1974). Kuchler (1972, 121) found fascination with where the prairie-types mix and intermingle because their geographical locations are not fixed: they shift east and west as dry decades are followed by moister periods.

Like Kansas's physical geography, the state's cultural landscape possesses an ever-changing mosaic of diverse communities that are in constant flux. In northeast Kansas, there is a sizable population of Native Americans living on reservations, including the Sac and Fox, Pottawatomie, and Kickapoo Nations (Figure 3.3). Drive two hours southwest and one will encounter cities influenced by the large presence of military and university employees and students, both foreign and domestic; places like Manhattan and Junction City are influenced by their proximity to Fort Riley and Kansas State University (see Shortridge 2002). These institutions draw a diverse group of people, including Hispanic, Black, and Asian populations (Figures 3.4-3.5). In the opposite corner of Kansas, the southwest has a high proportion of Hispanic people, largely as a result of immigrants arriving there to take advantage of jobs in the

cattle feedlot and meatpacking industries in Garden City, Dodge City, and Liberal (Broadway 1990; Erikson 1988).

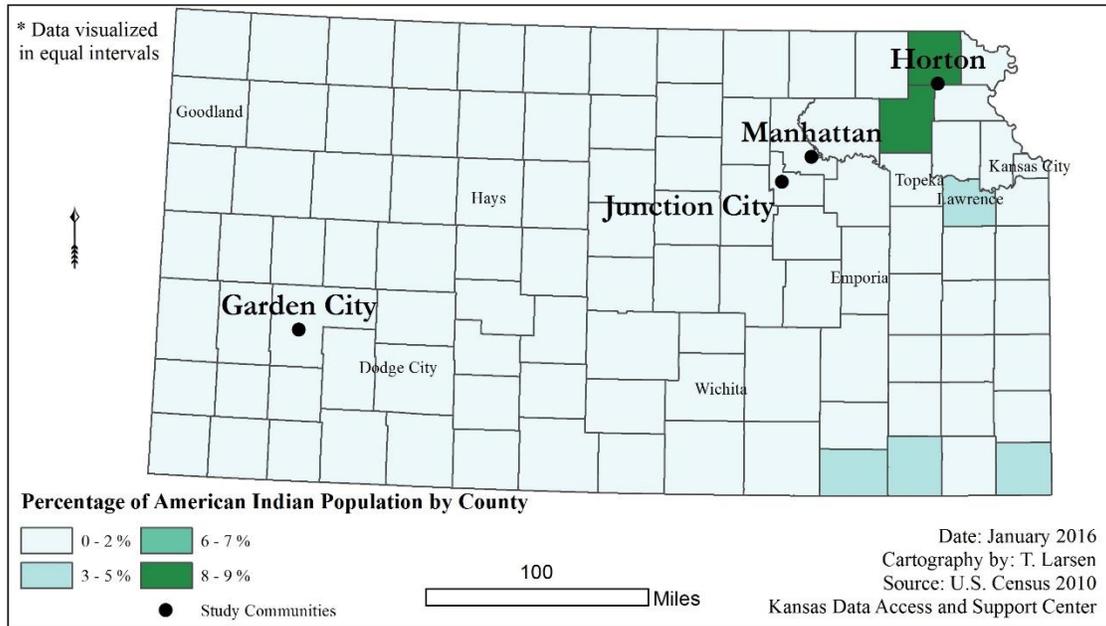


Figure 3.3: Map—American Indian/Alaska Native population by county.

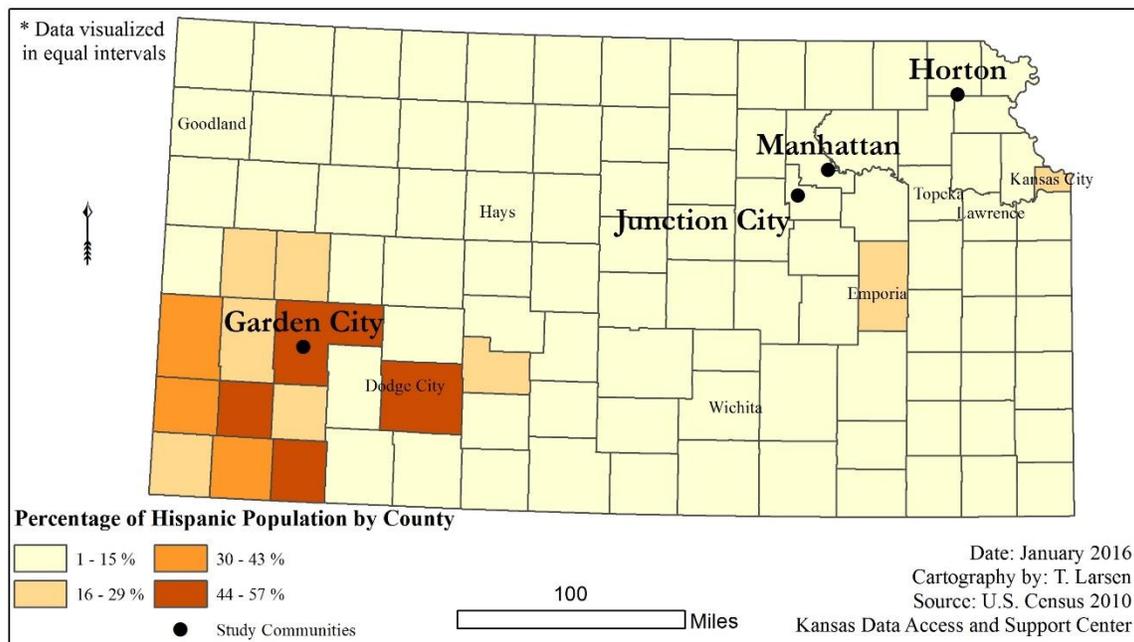


Figure 3.4: Map—Hispanic population by county.

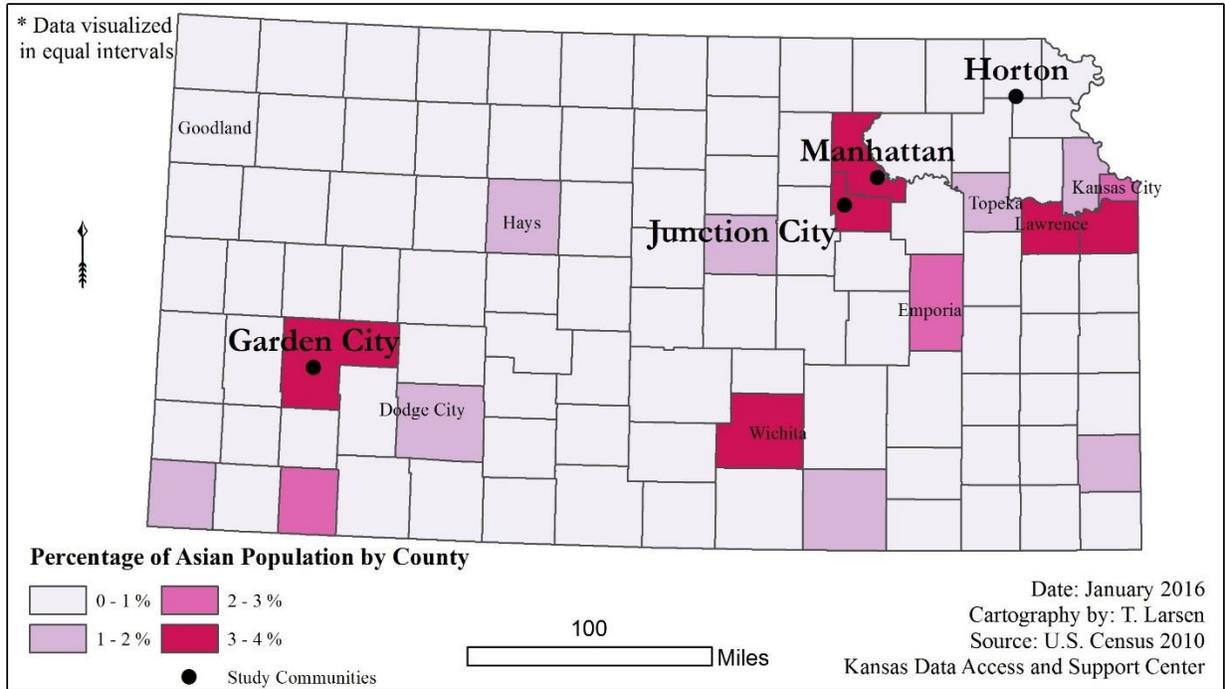


Figure 3.5: Map—Asian population by county.

Horton, Kansas

Horton, located in Brown County, lies within the Kickapoo Reservation in northeastern Kansas. The small town possesses sharp contrasts between Native American and Euro-American social boundaries. Horton is also home to the Golden Eagle Casino, a key component of the economic geography of the Kickapoo tribal area (Figures 3.6-3.7). The town combines, for better or for worse, a typical Euro-American rural town and a major First Nation presence in the region. The Kickapoo Nation water tower outside of Horton represents the Native American identity manifested in the built landscape (Figure 3.8).

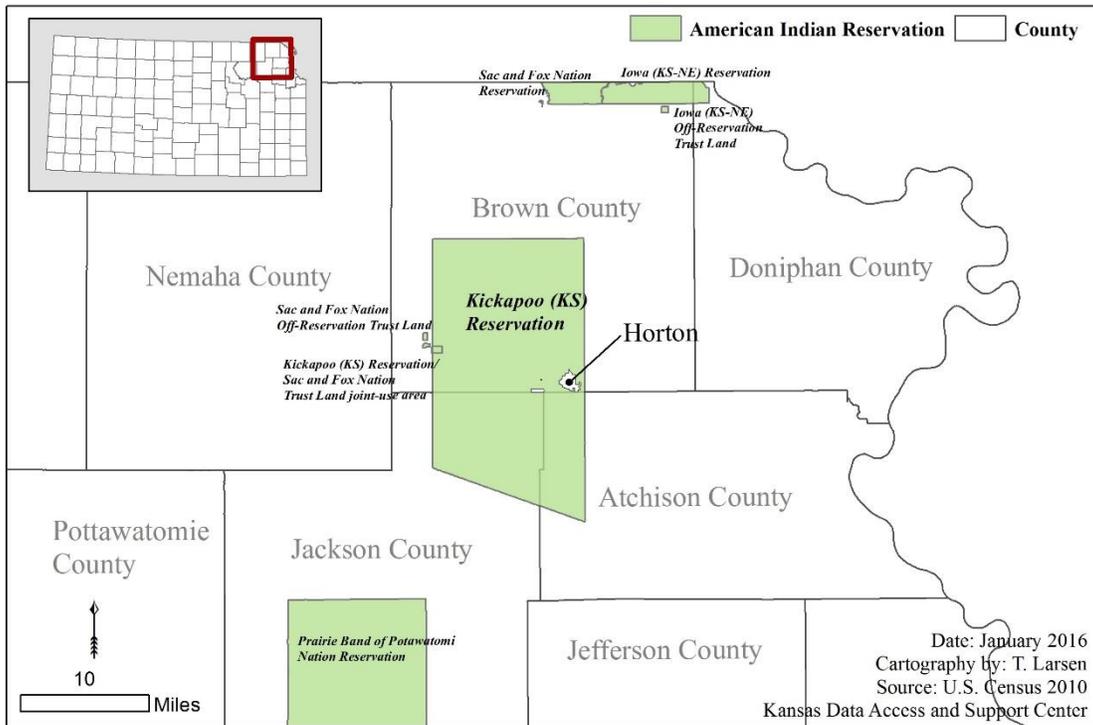


Figure 3.6: Map—Horton, Kansas, and surrounding reservations.



Figure 3.7: Golden Eagle Casino in Horton, Kansas.



Figure 3.8: Kickapoo Nation water tower outside Horton.

Horton represents one of the many rural communities experiencing population loss, to the point that the mayor made a call for outside help in saving the town. Horton, with a small population of 1,776, is now undergoing downtown renewal in which millionaire Marcus Lemonis, host of CNBC’s reality series *The Profit*, has created a downtown redevelopment project, labeling it “Reinvent Horton.” The endeavor has stimulated some major downtown changes, including new curbs, sidewalks, lights, and businesses (Adler 2015; Figure 3.9). Though some new life has been breathed into the town, change has been coming slowly, with most of the downtown buildings still vacant and tourism still flat-lined (Figures 3.9-3.10). On one of the closed-down shops, a sign in the window said “Reinvention in Progress!” (Figure 3.11). This reinvention of the town, as would be later uncovered, had a profound impact on the Horton third graders’ senses of community.



Figure 3.9: Downtown Horton.



Figure 3.10: Abandoned building in downtown Horton.



Figure 3.11: Closed shop in Horton. Two signs are displayed in the window, one saying “Shop Horton First! Your Patronage is Always Appreciated.” The second sign says “REINVENTION IN PROGRESS!”

During the study period, the *Hiawatha World* newspaper published monthly articles detailing the “Reinvent Horton Business of the Week.” Winners included the Lakeside Animal Clinic (Boller 2015a), Delights, LLC Coffeeshop (Boller 2015b), Horton Community Hospital (Rake 2015), Brown Atchison Electric Cooperative Association Inc. (Boller 2015c), and the Werner Guest House (Boller 2016). News features in local media outlets appear to be spinning the positive aspects of the community, highlighting these businesses as symbols for future growth and prosperity. Connie Werner, owner of the Werner Guest House, told reporter Rita Boller “I saw that we could do something to serve the out-of-state customers [of her husband’s Wagon Works business] who needed a place to stay while they were in our area” (Boller 2016). An article written about Delights, LLC, paints this downtown café and gift shop as an environment of hand-made gifts, a beautiful bar made of old doors, antique and repurposed

furniture and décor, and a “heavenly” coffee smell. Maxine Rice, one of the co-owners of Delights, alluded to the “excitement” felt by the surrounding community about the introduction of this coffee shop (Boller 2015b).

One article featuring the Horton Community Hospital communicated to readers the accessibility of this rural town to health and social services. This sentiment is further testified by James Noble, CEO of Horton Community Hospital, when he told reporter Darlene Rake, “Small towns are the backbone of our country, and I am a big supporter of local communities” (Rake 2015). The goal of the *Hiawatha World* pieces was not to feature the successes of Reinvent Horton, but rather to document the reinvention that has become the identity of the town. All of these examples of changing identity tie directly into many of the responses of Horton third graders about their local community.

Demographically, Horton possesses the highest number of Native American citizens of the four communities under consideration in this study, totaling to 10.7 percent of the population in 2010. The white population continues to remain dominant in the town at 82.5 percent. American Indians make up 22.6 percent of the school district population, but amount to less than 20 students altogether at the third grade level. Whites make up 65.5 percent at the K-12 level and 56 percent at the third grade level. Other minorities make up significantly smaller portions of the population and school enrollments.

Overall, Horton represents a small town that is trying to reinvent itself. Multiculturalism is evident in the mix of white and Native American groups. The sense of community within the town appears evident in news media articles. Though the number of third grade Native Americans seems low at the third grade level, the American Indian presence is evident in the community, nevertheless.

Garden City, Kansas

Located in the High Plains of southwestern Kansas, Garden City is anomalous for its minority-majority population of primarily Latino and Southeast Asian residents (Figure 3.12). The city represents a number of growing regional centers like Amarillo, Texas; Grand Island, Nebraska; and Dodge City, Kansas, that are multi-lingual and multicultural (Erikson 1988, 27; Figure 3.13). According to the U.S. Census 2010, 48.6 percent of Garden City residents are Hispanic or Latino, and almost 42 percent of Garden City residents speak a language other than English in the household. A large Indochinese refugee population, consisting of Vietnamese, Cambodians, and Laotians, began to settle the town in trailer parks, especially during the 1980s (Broadway 1987). Latinos, primarily from Mexico and Central America, migrated to Garden City and settled in trailer parks, converted motels, and rental units in “Little Mexico” as a result of the city’s cattle feedlot and meat packing industries (Broadway 1990, Campa 1990).

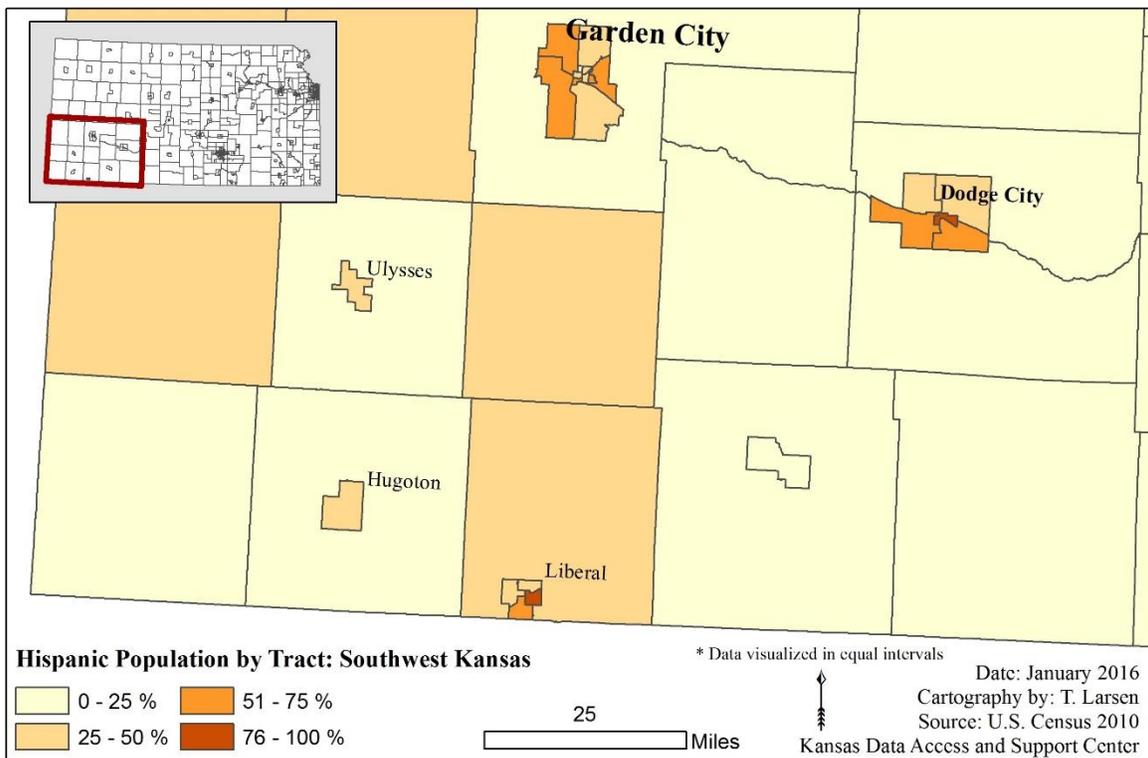


Figure 3.12: Map—Hispanic population in southwest Kansas, by Census tract.



Figure 3.13: Feedlot in Garden City, KS with the slogan, “Eat Beef. Keep Slim.”

Garden City has been labeled a “rural boomtown” by anthropologists and geographers who conduct research in the area (Stull and Broadway 2001, Broadway and Stull 2006). In the 1980s, the Latin American and Southeast Asian population doubled due to the opening of two major meatpacking plants: one by IBP in 1980 and another by Val-Agri (later ConAgra) in 1983. The ConAgra plant burned down on Christmas night 2000 (292). The influence of the meatpacking industry has continued especially with the large Tyson plant (formerly Iowa Beef Packers), which is a major pull factor for immigrants (Lowe 2013) (Figure 3.14).



Figure 3.14: Tyson meatpacking plant outside Garden City.

The region around Garden City continues to serve one of the world's largest meatpacking areas (Stull and Broadway 2001, 270). Though the city's population growth has tapered off since the 1980s, it continues to deal with issues related to school overcrowding, housing shortages, and unequal health and social services access (Stull and Broadway 2001). These concerns have led scholars to investigate how students of various ages, languages, and ethnicities develop competence in the K-12 education system (Grey 1990, Martinez and Bolton 2007).

The Latino presence is evident in Garden City. Many of the community's Mexican residents immigrated after friends, relatives, and acquaintances informed them of the job opportunities in the region (Campa 1990, 350). Campa (1990, 351-358) recognized that there was a sense of isolation and threat between Latino immigrants and the native Mexican American community, in addition to the mainstream Euro-American residents in the town. As a result, the inter- and intra-minority dynamics often lead to social boundaries dividing various ethnic groups. Ethnic social boundaries are evident with the presence of Latino bars and clubs, which local residents say have segregated Hispanics from the rest of the mainstream bars, restaurants, and clubs.

Garden City's sizeable Southeast Asian – especially Vietnamese – population is also worth noting as a component of the cultural landscape. The Vietnamese population has been a strong minority presence in Garden City since the 1980s. The Vietnamese word for “to be at home” is “*o nha*,” which literally means to be surrounded by one's kin. This is the traditional cultural way in which Vietnamese immigrants tend to view their community (Erickson 1988, 32). Erickson (33) commented that

“on the porch near the door is a clear indicator of Asian ethnicity: Summer sandals and tennis shoes of the occupants are piled in a box. If it is just after a shift-change, rubber boots may be left outside

before they are cleaned and brought inside, being too expensive to risk being left out for the evening.”

By “shift-change,” Erickson was referring to the heads of the household arriving at home after working at one of the feedlots or packing plants in and around Garden City. The Vietnamese population has given rise to Vietnamese restaurants as a part of Garden City’s economic and cultural geography.

At the K-12 level, student enrollment featured 70.4 percent Hispanic students during the 2015-16 school year. In the third grade alone, 67.6 percent of students were Hispanic. White students made up 21.4 percent at the K-12 level and 21.5 percent at the third grade level, followed by Asian students making up 4.7 percent in K-12 and 6.8 percent in third grade. Further, the Garden City school district had been experiencing recent increases in the number of refugees from African countries like Somalia and Ethiopia (see Lowe 2013). Garden City has a history of having immigrants and refugees from Latin America and Southeast Asia, and are now in the process of including refugees from Africa, as well. For a city with a history of school overcrowding, problems with student assimilation in the education system, and overall student competence in the classroom, Garden City becomes an interesting case study in and of itself when looking at how students of different cultural and ethnic identities develop a sense of community over time.

Manhattan, Kansas

Manhattan (pop. 52,281) embodies a mid-sized city that is larger in population compared to Garden City and Horton. Gumprecht (2003, 53-54) categorized it as an American college town because the community possesses the qualities that such places tend to encapsulate: youthful and comparatively diverse populations that are transient in nature; highly educated

workforces; relative absence of heavy industry; city life revolving around a university campus; and the presence of a ‘student ghetto,’ fraternity row, and a college-oriented shopping district. The city has a high number of Caucasians (around 83.5 percent in 2010), with Hispanics, Blacks/African-Americans, and Asians comprising around 5 percent of the population. However, the city retains a transient population of international scholars, students, and military personnel due to its proximity to Kansas State University and Fort Riley (Figure 3.15). Major districts within the city include the Aggieville restaurant and shopping area (Figure 3.16), the university campus (Figures 3.17 and 3.18), and the historic downtown shopping area and the adjacent mall (Figure 3.19).

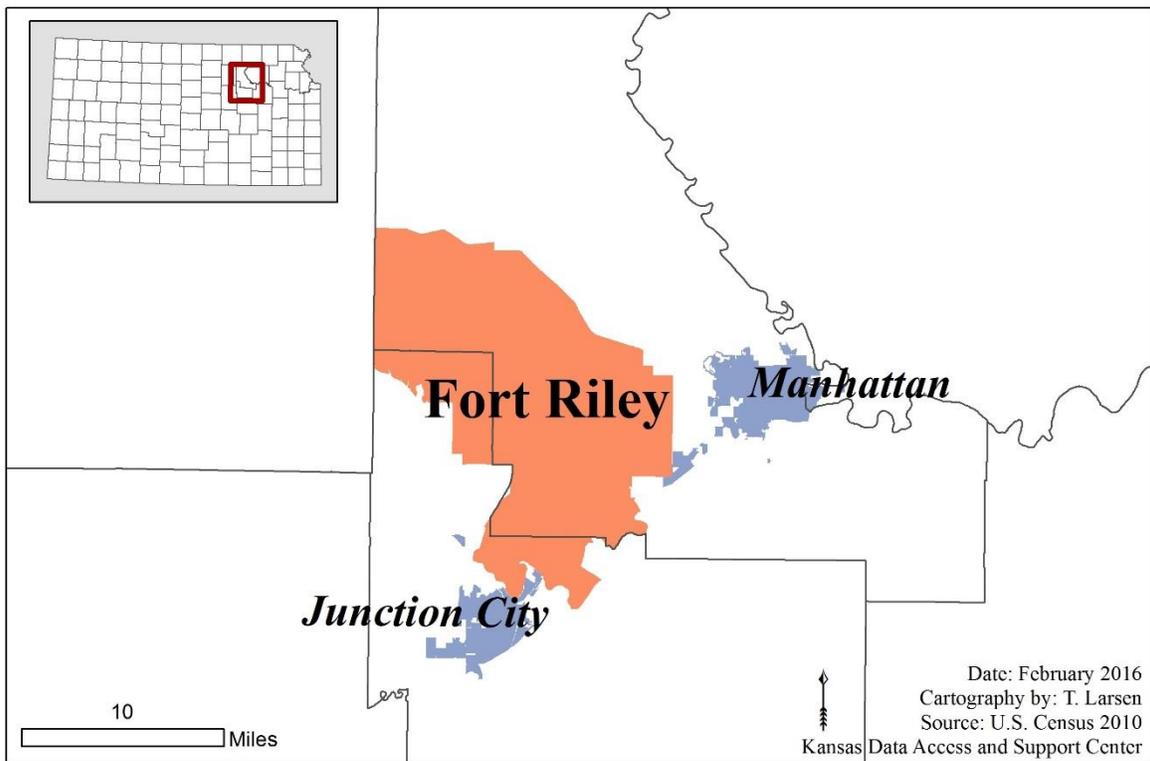


Figure 3.15: Map—Fort Riley in proximity to Manhattan and Junction City.



Figure 3.16: Aggieville district in Manhattan.



Figure 3.17: Anderson Hall on the Kansas State University campus (Photo credit: Dr. Lisa Harrington)



Figure 3.18: Kansas State University Student Union in Manhattan.



Figure 3.19: Historic downtown Manhattan.

Of the four communities in the study, Manhattan represents more of a college town that supports, for the most part, the university, whereas places like Garden City have a community college and support the feedlot and meatpacking industries and Horton with its Native

population, casino, and developing rural economy. The K-12 enrollment of the school district is more diverse than the community statistics. It includes 66.2 percent White, 13.1 percent Hispanic, 7.8 percent Black/African American, and 4.6 percent Asian. At the third grade level, 65.9 percent are white, 13.6 percent Hispanic, 6.3 percent are black/African-American, and 4.5 percent Asian.

Junction City, Kansas

Junction City is a military town. Although Junction City is a mere half-hour drive from Manhattan, it possesses a markedly different community makeup. The community's proximity and support for the Fort Riley military base (less than one mile away) makes it a primary supplier of off-base housing for members of the United States Army (Shortridge 2002; Figure 3.15) and civilian employees of the base. An article in VFW Magazine quoted the owner of the Junction City *Daily Union*: "Junction City is really here because of Fort Riley...Fort Riley is a major industry for that community" (Lanigan 2008, 40). The city, with a population of 23,353 in 2010, was a major support area for accommodating the return of the Big Red One, the First Infantry Division, that was stationed in Germany from 1996 to 2006 (Lanigan 2008, 42). The military nature of the population has influenced much of Junction City's infrastructural and memorial landscapes (Figure 3.20 and 3.21).



Figure 3.20: Heritage Park in downtown Junction City.



Figure 3.21: First Infantry Division memorial in Junction City, dedicated to soldiers who fought in Desert Storm.

Junction City has the greatest relative percentage of African-American citizens of the cities in comparison, with a total of 22.3 percent in 2010. Hispanics make up 13 percent and retain a prominent minority influence on the population (Figure 3.22). Whites make up 60.7 percent of the population. K-12 schools, and third grade in particular, have enrolled about 16-19 percent black students, around 17-18 percent Hispanic students, and about 4 percent Asian, with the white population being around 49-51 percent. Compared to the other three communities, Junction City possesses perhaps the most ethnically diverse population from which to build a sense of community.



Figure 3.22: Iglesia de Dios Pentecostal Church in Junction City, KS.

Community Summary

Altogether, these four communities cover a spectrum of possibilities for geo-progressions of a spatial sense of community. Horton is a rural town in the process of reinventing itself. Garden City is an immigrant and refugee hotspot in southwestern Kansas with a prosperous

cattle feedlot and meatpacking industry. Manhattan represents the typical Midwestern college town. Junction City embodies a military town at its core. Each one of these communities possesses third grade students who may have a different life experience and cultural take compared with those in another community or even among their own peers.

Methods

Overview of Study Framework

This study took a longitudinal approach to address learning progressions. The cultural theme of community was selected because it represents the primary frame of reference for the third grade *Kansas Standards for History, Government, and Social Studies*. A repeat visit to the same classes approximately four months apart was undertaken in order to trace the development of student reasoning and comprehension along a learning progression. Students were interviewed in focus groups at two different times during the 2015-2016 school year: September 2015 and January 2016. Each round of interviews lasted one hour. The classroom activity consisted of a short introduction, a whole-group mental mapping session, and a break-out session with part of the class in a focus session and the other part of the class participating in a geographic learning activity. Groups traded places after each focus group interviews were conducted.

During the first round, I introduced myself and explained why I was there, and passed out pencils and 8.5-by-11-inch sheets of blank white paper to each student. The idea of the mental map was introduced and students spent five minutes drawing a practice mental map of their classroom. The practice mental mapping exercise was used only in September. The practice exercise was omitted in January due to time constraints and the near-sighted assumption that the students would be able to remember how to draw a mental map. During both rounds (September

and January), mental maps were defined orally as “a drawing of how you see your world.” After the brief introduction, the class was posed the following question: “Imagine what your community looks like. Now draw a mental map of your community.” Students were provided with five minutes to complete the activity for two reasons: time allocated for the study was limited and a pilot mental mapping session conducted with students from Topeka in summer 2015 suggested that most students typically can finish their drawings within a five-minute time range. Most of the students in the actual study were able to complete their mental maps in under five minutes.

After making their maps, each class was broken up into three groups. One group would go with the researcher to be interviewed in a focus group format, and the other two groups would exchange once each group was interviewed. The interview areas were either the hallway or an adjacent classroom. While the interviews were being conducted, the other two groups were participating in a geographic activity. In September 2015, the activity involved students throwing around an inflatable globe and identifying the type of features that their right thumbs landed upon after catching the globe. In January 2016, students performed an activity called “Tear the Continents,” where they tore shapes of the continents out of green paper, later assembling and pasting them onto a larger blue sheet of paper.

During the focus group interviews, the students were asked to bring their mental maps with them into the interviews so that they would be able to reference the maps when needed. During the process of this study, an effort was made to not define the term community, even if the students did not know what the word meant. The goal at this point was to assess students’ knowledge at the start of the school year; the return trip in January would assess if the students gained a more intimate knowledge of the community as the school year progressed.

Method I: Longitudinal, Comparative Case Studies

A longitudinal case study was used to see how third graders from four Kansas communities viewed their community from September 2015 to January 2016. According to Baxter (2010, 81), case study research involves the “study of a single instance or small number of instances of a phenomenon in order to explore in-depth nuances of the phenomenon and the contextual influences on and explanations of that phenomenon.” As Baxter explained, case studies are limited in their abilities to be transferable and generalizable in other contexts. While this may be true, multiple methods of triangulation (*i.e.*, interviews, focus groups, and mental maps) to satisfy the requirements for rigor and external validity in qualitative and mixed research methods (Merriam 1995), as well as multiple case studies, were used in this research. A longitudinal case study framework was chosen over a cross-sectional study because little research in geo-progressions has traced the development of the same minds over the course of a school year in order to focus on the journey and not just snapshots of student comprehension across multiple grade levels (Huynh and Gotwals 2014).

Similar longitudinal studies dealing with children’s sense of place have employed a much more ethnographic and longer-term approach than the present research. Hart (1979, 37) spent two years entrenched in a New England town to discover its children’s phenomenal landscape, or how children personalize their surrounding and imbue them with meaning (5). Barker and Wright (1955, 458) completed a thorough study of children’s psychological ecology in a Kansas town from 1951-1952, where a field station was set up to record, describe, and analyze the various behaviors of children interacting with the town’s physical and social environment.

This study occupies a small time frame of less than five months to examine spatial sense of community among third graders of four Kansas communities. While a much more in-depth

study would have been preferred, there simply was not enough time, funding, and resources to conduct such an in-depth investigation. The judgement was made to select September through January in order to finish the Master's degree in a reasonable time frame.

Method II: Mental Maps/Sketch Maps

Mental maps represent the “conceptual image of the spatial arrangement of something” (Gersmehl 2014, 324). In the National Geography Standards, mental maps are an individual's internalized representation of the environment and a way to organize spatial information (Heffron and Downs 2012). Mental map drawings, also referred to as sketch maps or cognitive maps, have represented one of the more traditional forms of representing a child's perception of the environment (Matthews 1992, 88).

In each community, classes were asked the following question: “Imagine what your community looks like. Now draw a mental map of your community.” This question deviates from similar prompts made by Gillespie (2010) and Matthews (1984), which explicitly did not bring up the word mental map in order for the students to come up with an image of their neighborhoods as they would visualize them. Gillespie (2010, 20) used the following prompt: “Pretend I am visiting you in your neighborhood. Draw what I would see.” Matthews (1984, 90-91) provided a much more specific and in-depth prompt:

“Imagine that you were taking me with you on your journey from your home to this school. Please would you draw me a map of the way we would go, showing me things that we would pass on the way. Name any of these features that come to mind; and, . . . Imagine I was staying at your home and you were going to show me around the area around your home. Please would you draw me a map of the area around your home to show me some of the things I might see nearby. Name any of these features that come to mind.”

I began this study fully knowledgeable of the limitations of having children draw a mental map on an 8.5-by-11-inch sheet of paper. Sketch maps were selected over aerial photographs and three-dimensional models identified by Hart (1979) and Matthews (1992) for several reasons. First, sketch maps were easily replicable in classrooms across four communities. Each student, no matter whether they were from Horton or Garden City, was given the same parameters and materials from which to construct mental maps of their community. This measure allows for the comparative analysis of students across classrooms, communities, and time. Second, sketch maps allowed students to express, even at a rudimentary level, those things that stood out for them about their community. This includes landscape features of value to them, such as a church, shopping center, or zoo. Things not mapped or deemed *unmappable* by the students were brought up in the focus group interviews. Third, sketch maps are suited for the 1-1.5-hour time frame of which the investigator was allotted for each classroom. School district administrators in the more urban areas of Kansas who were contacted for this study stressed the importance of not taking up too much of the teachers' time. As a result, the study's intervention time was limited to a class period to conduct not only the mental map session, but also the focus group interviews.

This research also operates on several assumptions about mental maps. It agrees with the points made by Hart (1979) and Matthews (1992), that children do not possess static representations of their environment that can then be traced onto a piece of paper and labeled a map. Therefore, the sketch maps obtained from third grade classrooms cannot and should not be misconceived as to represent students' *complete* knowledge of community. Rather, they serve as snapshots that can be pieced together to form Lynch's (1960) idea of the image of the city, or in this case, the community. I also recognize that the brain can be unruly as it tries to piece

together and make sense of the chaotic world. As a result, sketch maps represent an abstraction of how the real world appears to students. Things will inevitably be left out, drawn out of proportion, scribbled over, and erased. Further, a student could draw a completely different map in the following five minutes or one day after the first map was drawn.

In sum, sketch maps provide an introductory instrument to discovering the nature of geoprogressions with spatial aspects of community. This research also addresses, in part, National Geography Standard Six: how culture and experience influence people's perceptions of places and regions. More trust with the school districts and teachers may provide more opportunities to explore other methods of capturing a child's sense of place and environmental perceptions.

Method III: Focus Group Interview

During each focus group interview, the students and the researcher congregated in a room or hallway separate from the teacher's classroom. The students brought their mental maps with them each time in order for them to have a reference from which to describe aspects of their community. Each focus group interview lasted between 10 and 15 minutes and was recorded using a digital recorder and a smart phone recorder application, in the event that one device shorted out or malfunctioned.

The focus group interviews consisted of four questions, followed by the occasional probing question to get a student to branch and expand upon their answers. In the first round (September), students were asked the following questions:

- What is a community?
- What things did you put on your map that you think are really important?
- What things do you know about your community that you forgot to put on your map?

- Did you put symbols like lines or boxes to show buildings, roads, etc.? If so, what?

First to understand students' idea of "community," multiple answers were taken and considered chronologically to assess the ways in which students built their ideas from what others might have said previously. The second addressed what children found important in their community, significant enough to draw on their mental maps, in order to try to interpret a child's sense of place within the community. This question also helped students vocalize and describe what they had put on their maps in order to limit researcher interpretations that might deviate from what the student actually intended to represent. The third question addressed what the child might have left out, forgotten, or had trouble representing on the mental map. Hart (1979, 96) included a similar question when he had children build models of their town by asking "do you need anything else to add to the model that you don't have now" and "would you make any changes to your model if you had the chance to do it again?" The third question was intended to promote a more exhaustive comprehension of the students' sense of community. The intent of the fourth question was to evaluate whether the student had an awareness of using symbols on mental maps in order to represent different phenomena. Altogether, these four questions represented a brief, yet sufficient, attempt to understand sense of community in short focus group sessions of Kansas third graders.

During the January interviews, students were asked similar questions which focused on how their perception of community might have changed over time. They included these four queries:

- What is a community? Has your answer changed since we last talked?
- What things did you put on your map that you think are really important?

- What things did you put on your map this time that you did not put on your map the last time?
- Have your social studies lessons helped you learn more about your community? Why?

The first question of the January 2016 round mirrored that of the September 2015 round, addressing whether students' definitions of community had changed over time, and whether or not they were aware of the change. Additionally, question two tried to understand how the students verbally interpreted their own mental maps. Question three was intended to see if the students could recall any differences or similarities between the maps they made in September and the maps they had just made. Question four involved the students reflecting on what they may or may not have learned about their community during the school year.

Multiple scholars have identified issues in interviewing children. Hart (1979, 13) argued that interviews puts children on the spot and breaks down their "unity of experience." Scourfield *et al.* (2006, 30) advocated for a lengthier period of time of participant observation to have the children get used to the researcher's presence. They pointed out that "interviews with children, in particular, can place heavy demands on children to conform to the social expectations of the adult;" they may even go far enough as to deceive the researcher (Scourfield *et al.* 2006, 29) causing social desirability bias. However, the questions were written to be general enough for students to limit social desirability bias, in which the students may try to tailor their answers to what they think the researcher would prefer to expect (Fisher 1993). Regardless, the potential for social desirability bias in third grader responses provides one concern that requires attention when analyzing the focus group interviews (Scourfield *et al.* 2006; Fisher 1993).

The goal of the focus group was, in the words of Cameron (2010, 155), to facilitate how students engage in “knowledge production” by interacting with each other and building upon each other’s questions. Dividing each classroom into three focus groups also afforded an opportunity for the third graders “to explore different points of view and to formulate and reconsider their own ideas and understandings” (154). The focus group interviews were then coded and analyzed according to content in order to organize the data into key themes that prevailed throughout the study (see Cope 2010, 281).

Method IV: Teacher Interviews

Teachers for each classroom were asked to participate in a semi-structured interview asking questions about their knowledge of the Kansas Social Studies Standards and the National Geography Standards, which types of resources and methods they use to incorporate community into their lesson plans, and how a children’s sociocultural circumstances may influence learning about community. The objective of the teacher interviews was to triangulate the responses of the students with the perspectives of the teachers. This method of combining multiple sources helped to ensure that the study contained the necessary rigor for qualitative and mixed-methods research (Bradshaw and Stratford 2010, 77). Teacher interviews also helped fill in the potential gap in knowledge that the student focus groups might have had about sense of community in the Kansas classroom (see Dunn 2010, 102).

Summary

A longitudinal, comparative study of third grade children was conducted in four Kansas communities, one being a college town, another a military town, an immigrant town, and a rural town in the process of reinvention. Mental map drawings, focus group interviews with students,

and teacher interviews were triangulated to understand how Kansas third graders developed their sense of community over the period from September 2015 to January 2016. Though the study has limitations, this exploratory research effort provides a foundation for future research in the years to come regarding sense of community, Geography Standard Six, and geo-progressions. In the words of Hart (1979, 6),

“It must be noted that many aspects of the experience of place cannot be discovered by geographical or psychological methods nor in fact by any formal procedure. We must recall it ourselves or rediscover it through empathy with children. In this way we may be able to better understand how particular places are contacted, enter consciousness, and are experienced.”

Chapter 4 - Here and Now, There and Now, Where and How?

Findings and Analysis

Children build their image of community in many ways. They build it over time, deconstruct it, add and subtract things from it, and try to pick up the pieces and create something new. A community-based sense of place geo-progression relies upon the learning in everyday experience and is built upon within the classroom or other formal social structures (*e.g.*, church). Without content steeped in place, a student's knowledge remains placeless within the very community they inhabit. The results provided in this study indicate that this "big idea" of community is being taught to varying extents in third grade social studies. Many of the instances in which community is being taught includes when teachers are able to integrate it into tested subjects like reading or writing.

Out of the six teachers in the study, five teachers were interviewed in January 2016, which resulted in about two hours of recording followed by eight hours of transcription. In September 2015, 151 students took part in the study, while 148 students were involved in the January 2016 round. A total of 169 students participated in the study overall, while 130 students took part in both rounds of mental mapping and focus group interviews. There were 21 student focus group interviews during each round, resulting in 42 focus groups total for the entire study. These focus group interviews amounted to around ten hours of recording and about 40 hours of transcription. Of the 299 mental maps coded and analyzed, 260 mental maps were selected for paired-data analysis because they represented the 130 students involved in both rounds.

The research revealed four primary findings in exploring geo-progressions for community and Geography Standard Six among Kansas third graders:

- 1) definitions of community remained relatively stable during the study period;

- 2) there is little evidence of increasingly sophisticated progress in students' understanding of community, according to the results from analysis of the mental maps;
- 3) culture and experience account for subtle factors in students' sense of community; and
- 4) the classroom environment and content play key roles, particularly regarding time devoted to student reflection on community awareness and resources that tap into students' existing knowledge of community.

Discussion of the analysis also will delve into teacher and student perceptions of how community is being taught and learned along with the barriers to effective, constructivist education on the community learning progression. This chapter will conclude with an analysis of the types of resources brought up by teachers and students that address the idea of community. The most significant finding is that students bring with them a wealth of culture, experience, and senses of place that are not being tapped in the classroom due to time, teacher expectations, and social studies' marginalization in the curriculum.

Definition of Community

The definition of community can be simple or multidimensional when peered at through a geographic lens. This geographic lens, according to the National Assessment of Educational Progress (NAEP), can include three realms of geography: space and place, environment and society, and spatial dynamics and connections (GAO 2014). Similarly, the geography section of the Kansas Standards adds more specific aspects of geography into a spatial sense of community, such as the concept of mapping, political characteristics, physical characteristics, natural resources, human characteristics, ecosystem, climate, culture, customs, and

human/environmental interaction (Kansas State Board of Education 2014, 33). Of these dimensions, three bear particular importance to this study: 1) spatial dynamics and connections; 2) environment and society, or human-environment interaction; and 3) human characteristics, culture, and customs. The spatial dynamics and connections aspect reflects a student's ability to think, map, and communicate about community topics across space. The environment and society component addresses how community is connected to nature and physical systems, and how people interact with the environment. The human characteristics dimension addresses ideas of cultural patterns across space and time, as well as the moral values and attitudes that people gain in the context of community. These frames can range from the elementary to the complex, and one frame can be emphasized in some instances over another. During the study period, many students in third grade seemed to have an elementary understanding of spatial aspects of community, but little comprehension of how a community-based sense of place connects to their classroom learning or experience outside the school perimeter.

To begin, there was variation in the definition of community among Kansas third graders. Similarly diverse responses arose in January 2016, when compared to September 2015 (Table 4.1). Many of the responses in the focus groups were repetitive and seemed to branch off from responses mentioned by other students. The majority of responses took on the tone of a question, with extended pauses between words and a rise in the voice at the end of each thought. On numerous occasions, it sounded as though the students were trying to guess what the researcher would have wanted them to say. "I don't know" and "pass" were also common responses that appeared throughout the interviews. The students' difficulty in trying to understand community became apparent during each mental map exercise. During both rounds of mental mapping, the prompt of "Think about what your community looks like; now draw a map of your community,"

was met with multiple hands being raised followed by the question, “What is a community?” It was a question that the students struggled to define throughout the school year.

Table 4.1: Illustrative responses for the question “What is a community?”

Student	Round	Response
Garden City	1	“...where people work and they help people.” “...where people live and work and play.”
Horton	1	“Neighborhood.” “A town.” “A place where you live and you like to play around.”
Junction City	1	“My community is my house.” “A community is where you live somewhere and you live by a lot of people, pick up trash and help the community.” “A community is your state and the United States.”
Manhattan	1	“Where you work together. A school is a community. The state is a community.” “Where people help each other like police officers and nurses and people around you and people who work hard, or something like that. It’s a community and where people help each other.”
Garden City	2	“A place where you live.” “It’s a place where you can have friends and family.” “It’s a state, a city, or a country. It’s a little community.” “A group of people working together to make something better.”
Horton	2	“There’s lots of houses and city hall and trees and stores and some schools and some sidewalks and cars.” “A town where—it can be big or small—but it’s a town where a lot of people or a little bit of people live, grow, and play.”
Junction City	2	“A community is where you go to school and you live and you go places.” “A community is where people—like they have stores and stuff and they have their homes and some people are friends and not friends and stuff.” “A community is where a lot of people live and they recycle and they live in a house.”
Manhattan	2	“Where people live, play, and where people help people and hang out and have fun with each other, and usually it has restaurants and police officers, fire fighters, stuff like that.” “...place that is kind of like your surroundings.”

In analyzing the content of the focus group question, “what is a community?”, numerous themes arose. On the whole, the responses denoted the idea that a community is a place where people live, work, and play together. To visualize the content of the interviews, this study utilized word clouds to demonstrate the relative prevalence of primary codes in focus groups

Table 4.2: Total frequencies of key words in the focus group interviews with students.

Focus Group Key Words	September 2015 Word Frequencies	January 2016 Word Frequencies
Place/Places	33	50
People	58	40
Live/Lives/Lived	88	56
Work/Works/Worked	20	15
Play/Plays/Played	5	14
City/Cities	17	9
Go/Going	16	11
School/Schools	11	12

In Round 2, similar themes were brought up, particularly people, live, work, place, go, and school (Figure 4.2). The term ‘place’ provided the primary spatial dimension from which the students talked about community. Out of the 21 focus groups in January 2016, ‘place’ was mentioned 50 times, compared to being referenced 33 times in September 2015 (Table 4.2). In September and January, some of the most prominent key terms clearly connect to the definition of community provided by a *Social Studies: Communities*, a textbook commonly cited by students and teachers during the interview portions of this study (Houghton Mifflin 2008). Community is defined as a “place where people live, work, and play together” (6). The term “live” was the most prevalent code mentioned, coming up 88 times in September and 56 times in January (Table 4.2). “Play” was the least represented word from the textbook definition of community during both rounds of interviews, being mentioned only five times in September and 14 times in January. In both rounds of focus group interviews, the majority of the prevailing terms in the word clouds link directly to this definition.



Figure 4.2: Word Cloud, Round 2 Total focus group interviews, January 2016: What is a community?

When “community,” “place,” “people,” “live,” “work,” and “play” were omitted from the word cloud processor, other terms became noticeable: “house,” “school,” “city,” “friends,” “cars,” “neighborhood,” “stores,” and “restaurants,” among others (Figures 4.3-4.4). This content analysis reflects the variability in students’ conceptions of community. Among these responses, students were employing spatial forms of thinking in order to explain social and cultural aspects of a community. Some students were able to think regionally about the concept of community, with a Junction City student saying that a community can be a state or the United States. The concept of region represents one mode of spatial thinking identified in the literature (Gersmehl and Gersmehl 2007; Jo and Bednarz 2009). In January 2016, a Garden City student said that a community is “a state, a city, or a country,” while a Horton student talked about how a community is “a town where – it can be big or small – but it’s a town where a lot of people or a little bit of people live, grow, and play.” These responses deal explicitly with the spatial concept of scale and how that relates to the concept of community. Scale represents a complex concept

This short conversation indicates why a student would talk about the environment when asked about community. The tactile experience of bushes brushing over one's head becomes an apparent component of how one navigates the physical landscape, especially when one cannot see. Other students connected the physical landscape with what one teacher described as "civic responsibility." Therefore, the concept of community was often associated with recycling, not littering, and picking up trash.

The cultural and human dimensions of community were especially prevalent in student discourse. Terms like house, play, and help show some prominence within the word clouds of the focus group discussions of community. A Manhattan student in January 2016 said that a community is "where people live, play, and where people help people and hang out and have fun with each other, and usually it has restaurants and police officers, fire fighters, stuff like that." This definition of community packs a multitude of aspects of the human landscape, including businesses, law enforcement, and people participating in activities like work and recreation. Participants also talked about relationships within the community, such as this student from Junction City in January 2016: "A community is where people – like they have stores and stuff and they have their homes and some people are friends and not friends and stuff." The idea of people participating in activities and the fact that "some people are friends and not friends" suggest that the cultural landscape of community is dynamic and not necessarily utopian.

Accordingly, the primary codes of emphasis for community were variable, but remained similar within the focus groups during this longitudinal study: "A community is a place where people live, work, and play together." This definition comes verbatim from one of the only textbooks referenced by participants, entitled *Social Studies: Communities* (Houghton Mifflin 2008, 6). Further down the page, the book has the student think about the school as a

community, where teachers, students, and the principal help each other to learn. Numerous student responses in each of the focus interviews at least hinted at this conceptualization. Later on, the book goes on to describe “kinds of communities” like urban, suburban, and rural. It also talks about major cities like New York (20) as well as describes different types of landforms.

Geography is awkwardly mentioned in this landform section:

“When you think about landforms and erosion, you are thinking about geography. Geography is the study of people, places, and the earth” (26).

Students were presented with geographic ideas in the twenty pages leading up to this section! However, geography here is specifically set in the context of “landforms” and “erosion,” not geography as the synthesis of numerous dimensions of a place or region, including its cultural-societal, physical, and spatial environs. Consequentially, the nature of geography and its capabilities appear to be limited by the textbook’s definition.

Some students talked about how communities change over time. One Horton student remarked that the teacher “taught about how some communities get bigger and some get smaller and how there’s big ones and there’s ones with houses put together, like they’re real close together.” Others talked about different types of communities. In the same Horton focus group, another student remarked how the teacher “taught us about the different communities like rural, suburbs, industrial – and what’s the other [whispers to another student] – and residential.”

When asked whether their definition of community had changed over the school year, members of 13 out of 21 focus groups either did not have answer, did not respond, or could not remember. Of those focus groups with “yes” responses, many of the respondents did not appear to understand the nature of the question. One student responded with the following words:

“Last time I thought community was like your neighbors and your neighborhood, but this time I think that a community is where people go to help with their jobs and all the stuff around them.”

The student seemed more concerned with searching for the “correct” idea of what a community was, rather than framing their response as one way to talk about community. The student separated neighbors and neighborhood from people helping through their job, rather than recognizing that the two concepts are integrated and complimentary. On the other hand, the student could have had an expanded view rather than a different mindset. Without assuming that students were able to provide a complete oral summary of their ideas, there were times when it was made apparent that the instructor was talking over some students’ heads. Other students responded by talking about changes that happened in their community, such as the addition of a new coffeeshop, Walmart, Mexican restaurant, and construction projects, and the like.

Regarding scale, student responses ranged from one’s house to community as one’s city, state, and the world. For instance, a Garden City student said that a community “is a state, a city, or a country,” while a Junction City student said “my community is my house.” Neither answer is wrong. Instead, they do indicate that students may have been able to realize that there are numerous ways to describe a spatial sense of community. In comparison to Perry’s (1970) stages of intellectual and cognitive development, these responses suggest the ability of the third grade subjects to obtain a multiplicity/subjective knowledge of community, but not necessarily the ability to distinguish relative knowledge from subjective knowledge or to integrate and reflect upon knowledge learned from previous experiences and interactions. Although there was diversity among responses as to what a community represents, the variety of responses reflected less of a greater understanding of the concept and more a rehashing or snowballing off prior

student responses or a listing of places within their community, such as McDonald's, Walmart, or Wendy's.

Mental Map Results: Is There a Difference?

The second set of analyzed data involved the maps drawn by the students. This assessment examines whether there was a difference in the students' understanding of community: is there one? The answer is that some change is indicated, but that difference varies and in most cases not necessarily in an increasingly sophisticated manner. The mental maps in both rounds provide clues for this finding. Looking at differences, the mental maps varied significantly among students in terms of scale, style, and features included in the communal landscape. Students began the year with different competencies and conceptions of community based on previous education, drawing ability, culture, and experience, among a myriad of other influences. Responses from the students in January illustrate similar variability.

Figure 4.5 shows the mental maps of students from the same class during Round 1 of interviews. In September 2015, one Garden City student drew a picture of his home as his community, complete with a dining table, T.V., couch, family members and kitchen. In the same class, another student drew a business district and residential area with boundaries separating the two areas of the community. As illustrated by these mental maps, spatial conceptions of community as portrayed in the mental mapping exercise varied significantly from one student to another. While one child may see their community within the confines of a household, another child may expand their horizon to include Walmart, Applebee's, Home Depot, and a car wash.

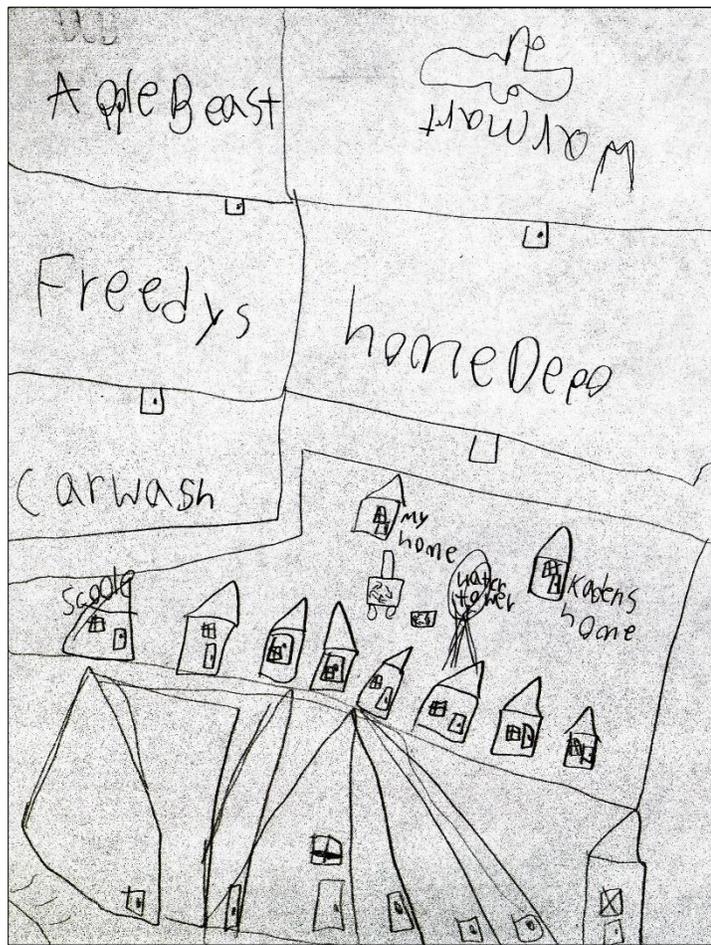
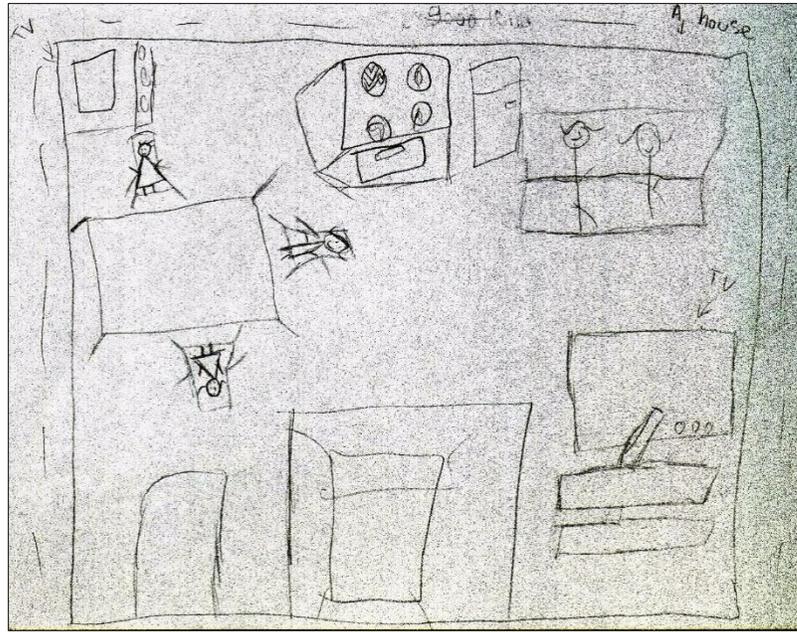


Figure 4.5: Top: Garden City Student I (Household). Bottom: Garden City Student II (Business and Residential). September 2015.

Spatial conceptions of community varied among students in the same classrooms. In a January 2016, a Garden City student drew a mental map of the community on a global scale, outlining the general shapes of the continents and finishing off the piece with a compass rose. In that same classroom, a different student drew a play area, football field, McDonalds, Walmart, and a Mexican restaurant. In this student's work, the vertical perspective, or plan view, is conflated with building-side views. Similar to definitions of community, the students seemed to have an unclear idea of the spatial concept of community during both rounds (Figure 4.6).

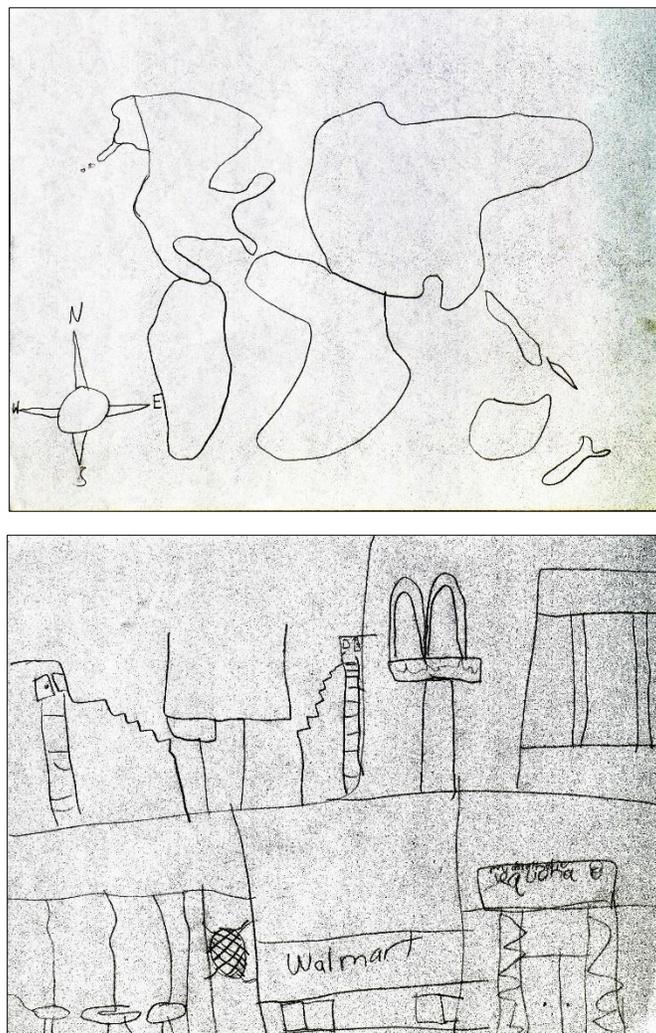


Figure 4.6: Top: Garden City Student I (World). Bottom: Garden City Student II (Recreation and Business). January 2016.

Student mental maps varied over time. A total of 130 students participated in both the September 2015 and January 2016 rounds. Overall, the mental maps showed a change from September to January in both the Matthews (1984) levels of cartographic visualization as well as the number of elements in the Designative Categories outlined in Gillespie (2010). The Matthews (1984) levels of maps (described in Chapter 2) from both rounds indicated this phenomenon (Table 4.3). Of the 130 students who participated in both rounds, the majority (32 percent in September; 29 percent in January) depicted Level II-Higher maps of their communities, which is a plan-pictorial map with labels. Level I-Higher (Pictorial with labels) and Level I-Lower (No labels) maps held a great prominence in both rounds, as well (Level I-Lower: 16 percent and 27 percent; Level I-Higher: 28 percent and 26 percent, respectively). Rarely did students depict Level III (Plan-view) maps of their communities.

Table 4.3: Percentages of mental maps categorized according to Matthews 1984 levels of mapping ability and chi-square analysis of individual observations.

Matthews Levels	September 2015	January 2016
Level I-Lower: 1	16%	27%
Level I-Higher: 2	28%	26%
Level II-Lower: 3	12%	11%
Level II-Higher: 4	32%	29%
Level III-Lower: 5	2%	2%
Level III-Higher: 6	9%	5%
Chi-square (based on # observations; 5 degrees of freedom) = 10.250		
P (two-tailed)= 0.0684		

From a longitudinal standpoint, the majority of students either drew mental maps using the same Matthews level or lower in the second (January) round (Figure 4.7). A chi-square analysis of the results indicated a small P-value and a statistically significant difference between

September and January. Of the 130 participants in both rounds, 40 percent (52 total) drew a lower level map in January 2016 compared to September 2015. For example, one student drew a Level II-Higher map (Plan-pictorial with labels) of their community in September 2015 (Figure 4.8). The sketch was neatly drawn from a plan-pictorial perspective, complete with landmarks such as the school, Walmart, an area for other stores, residential housing, and trees to depict nature. The streets were even represented with abstract symbology. During the January 2016 round, however, that same student drew a Level I-Lower map (Pictorial with no labels), a ground-level perspective of a residential area with trees and grass. The student did not include labels or show the diversity of the previous picture. At least for this student, it seems clear that instructional setting or internal day-to-day variations can impact the character of the mental map produced.



Figure 4.7: Percentage of students according to differences in Matthews 1984 mental map levels, September 2015 to January 2016.

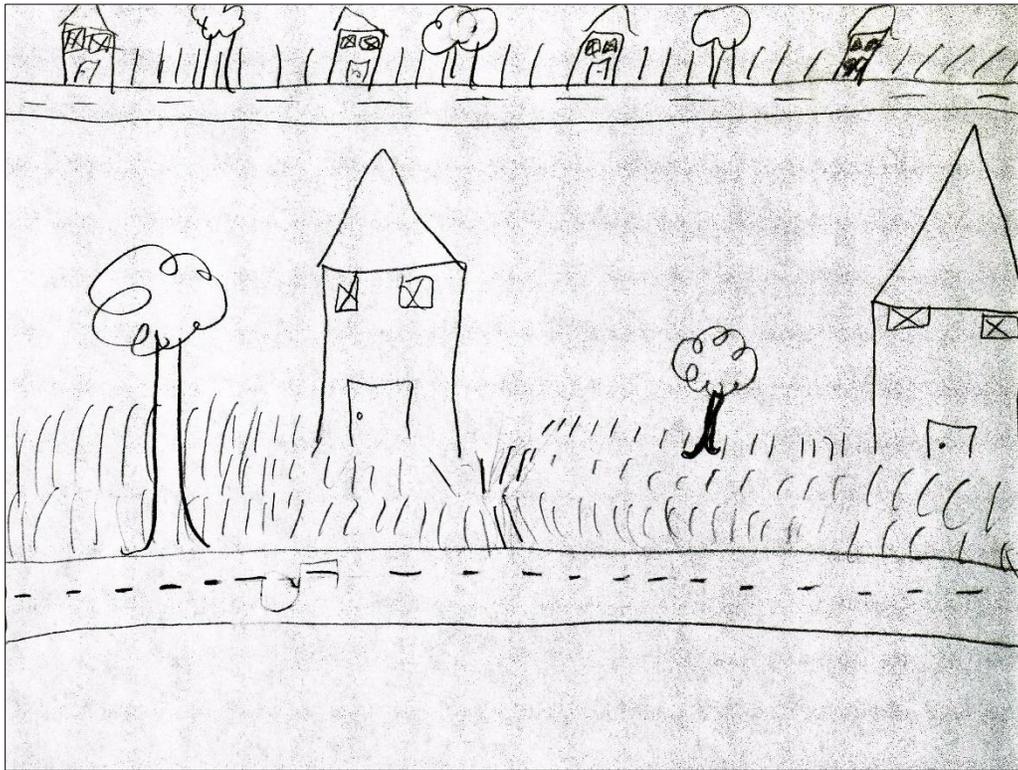
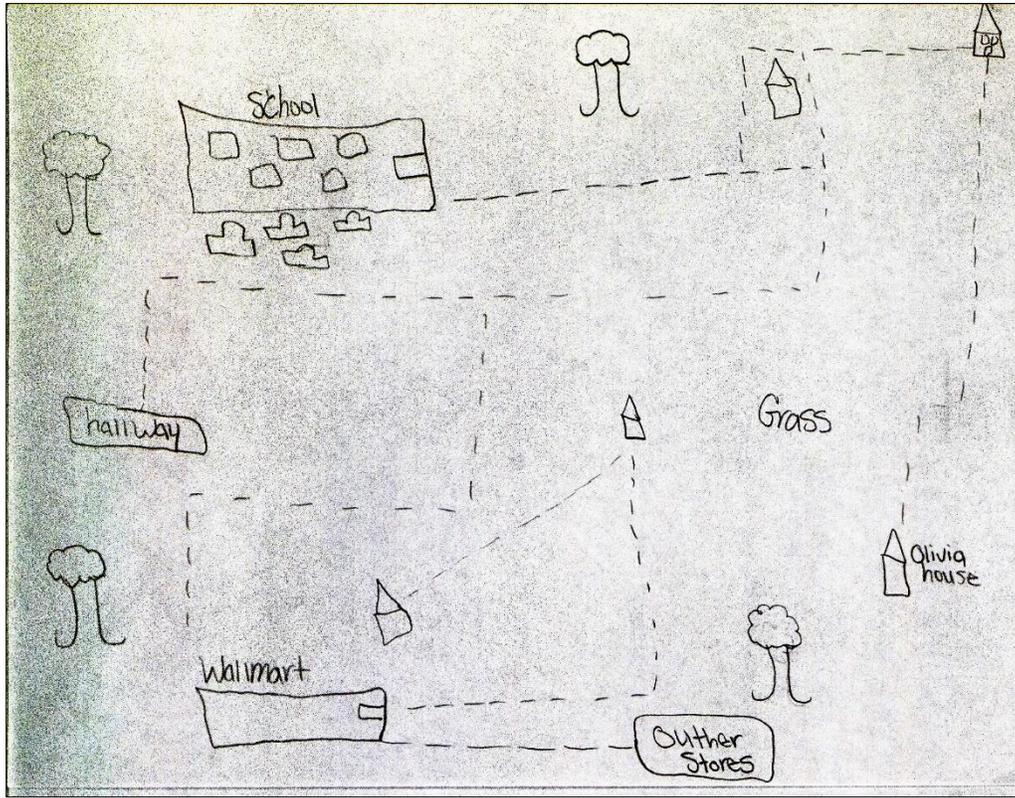


Figure 4.8: Student mental maps that demonstrate change from Level II-Higher in September 2015 (top) to Level I-Lower in January 2016 (bottom).

The percentage of students who did not change the Matthews level of their mental maps was similar to the students with second maps at a lower level, or approximately 38 percent (49 total). One example is the Manhattan student who drew two Level III-Higher mental maps (Plan with labels) of the community, primarily depicting aerial views of roads and landmarks with labels such as the library, bridge, and the school in Round 1, and drawing housing, a zipline, and a trailer area in Round 2 (Figure 4.9). Both maps show a similar style and perspective, though indicating different aspects of the community.

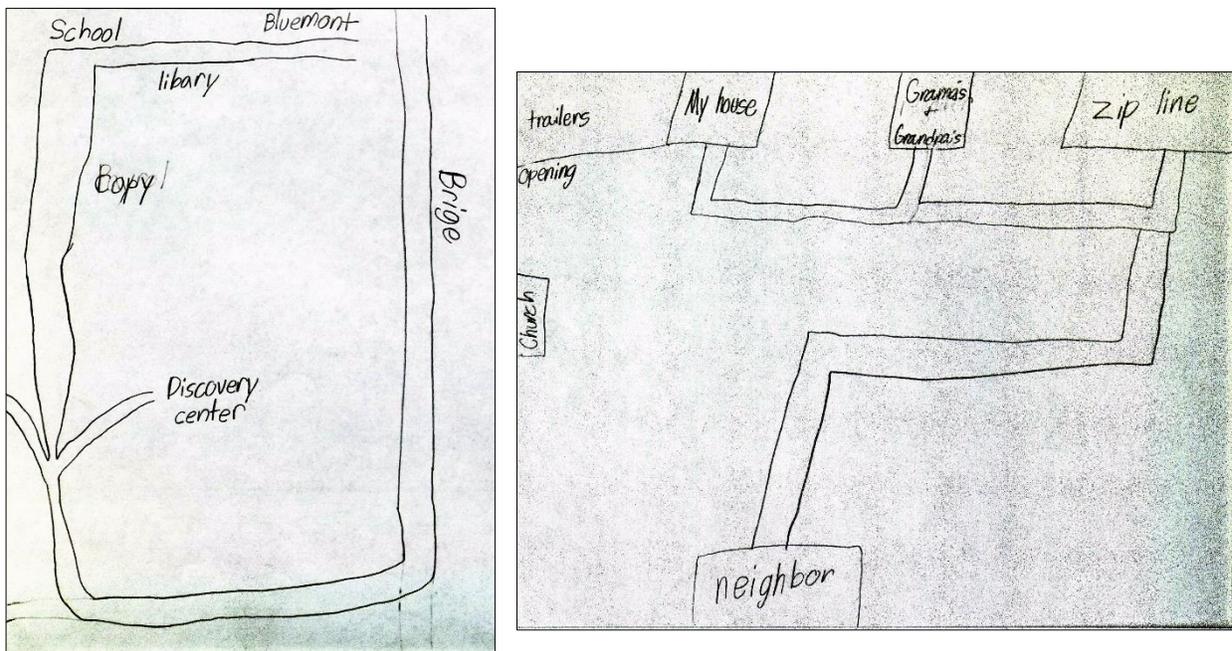


Figure 4.9: Mental maps that displayed no change in student spatial thinking from Level III-Higher in September 2015 (left) to Level III-Higher in January 2016 (right).

In contrast, 22 percent of students (29 total) drew a mental map at a higher level in Matthews' taxonomy in January 2016 than in September 2015 (Table 4.2). For example, one student sketched a Level I-Higher mental map (Pictorial with labels), which depicted a track and field, houses, trees, and a recreation area (Figure 4.10). In January 2016, the same student

instead depicted the downtown area, complete with a boot shop, toy shop, doll shop, a pizzeria, and other stores.

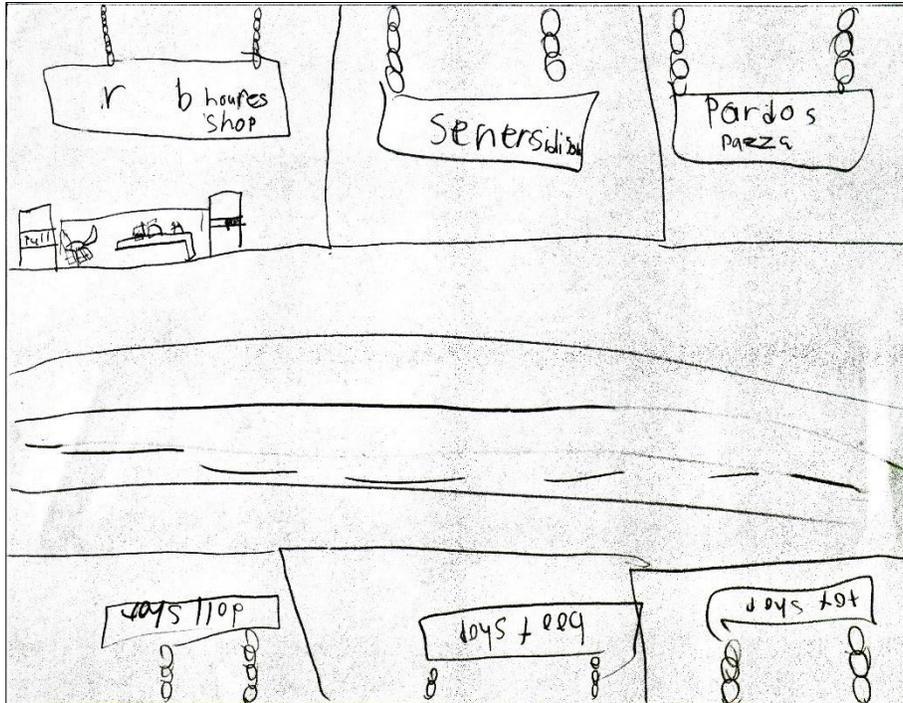
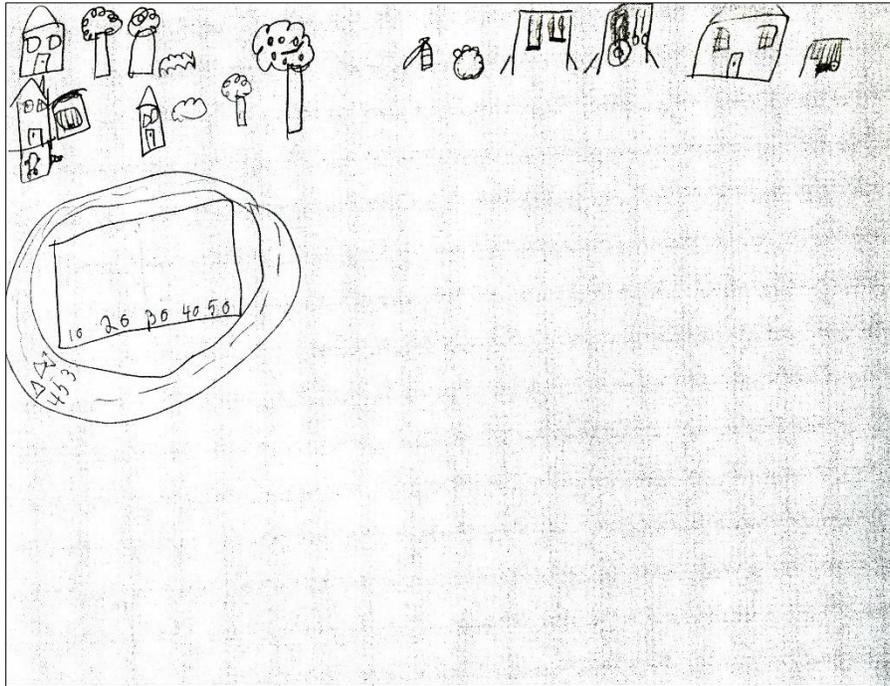


Figure 4.10: Student mental maps documenting a change from Level I-Higher in September 2015 (top) to Level II-Higher in January 2016 (bottom).

Along with the temporal differences in Matthews levels, the number of instances for Designative Categories also differed over time during the study period (Figure 4.11; Table 4.4). Of the Designative Categories coded, landmarks were the elements of primary emphasis, making up 53 percent of the codes in September 2015 and 50 percent in January 2016. Paths or streets comprised the second most significant designative element, with use by 16 percent of students in Round 1, jumping to 21 percent in January. Edges, districts, and social elements were the least used elements in the mental maps. The numbers suggest that students have the ability to draw the basic aspects of a community, such as streets, sidewalks, and landmarks. However, time and paper-size constraints could have affected participants' abilities to depict multiple districts other than simply residential or business areas, which were the most common districts included in the mental maps. When students used social elements, they primarily depicted human figures either outside (*i.e.*, walking the dog or waiting at the bus stop) or within a house looking out of the window.

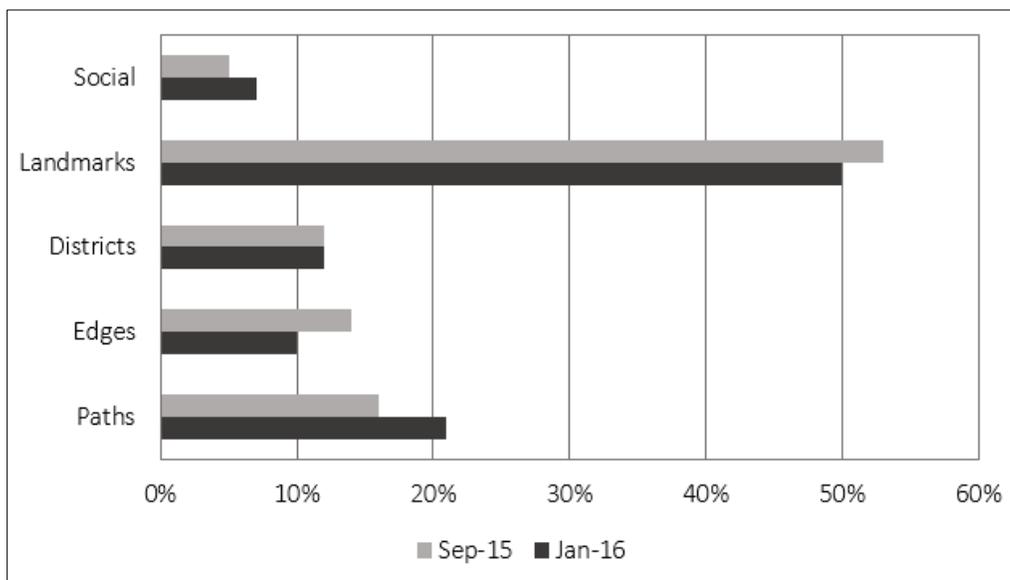


Figure 4.11: Relative designative map elements in both rounds of mental mapping sessions.

Table 4.4: Designative map elements in both rounds of mental mapping sessions.

	September 2015	January 2016
Paths	16%	21%
Edges	14%	10%
Districts	12%	12%
Landmarks	53%	50%
Social	5%	7%
Total Elements	2314	1739
Chi-square (based on percentage observations within 4 degrees of freedom) = 3.542; P (two-tailed)= 0.4715		

Of the 130 participants in both rounds of the study, the number of instances that any of the geographic codes showed up was much lower in January 2016 (n= 1739) than in September 2015 (n= 2314). The chi-square test showed that there was too large a discrepancy for a statistically significant relationship between mental map code instances in both rounds. Most students either depicted no difference in the number of instances for designative codes or fewer instances in the number of codes (Table 4.5; Figure 4.12). Though landmarks remained the most prominent code in both rounds of the mental maps, they were used less frequently by 58 percent of the students in the January 2016 round. Of those landmarks, houses occurred less in 40 percent of the participants' mental maps. There was a prominent proportion (44 percent) of the 130 students that used more paths in their mental maps in January 2016. Additionally, the majority of students showed few or no differences in the number of instances for edges, districts, and social codes.

Table 4.5: Differences in designative map elements for both mental mapping sessions.

	Paths	Edges	Districts	Landmarks	Houses	Social
Fewer Instances	24%	36%	29%	58%	40%	22%
No Difference	32%	45%	55%	10%	28%	58%
More Instances	44%	19%	16%	32%	32%	20%

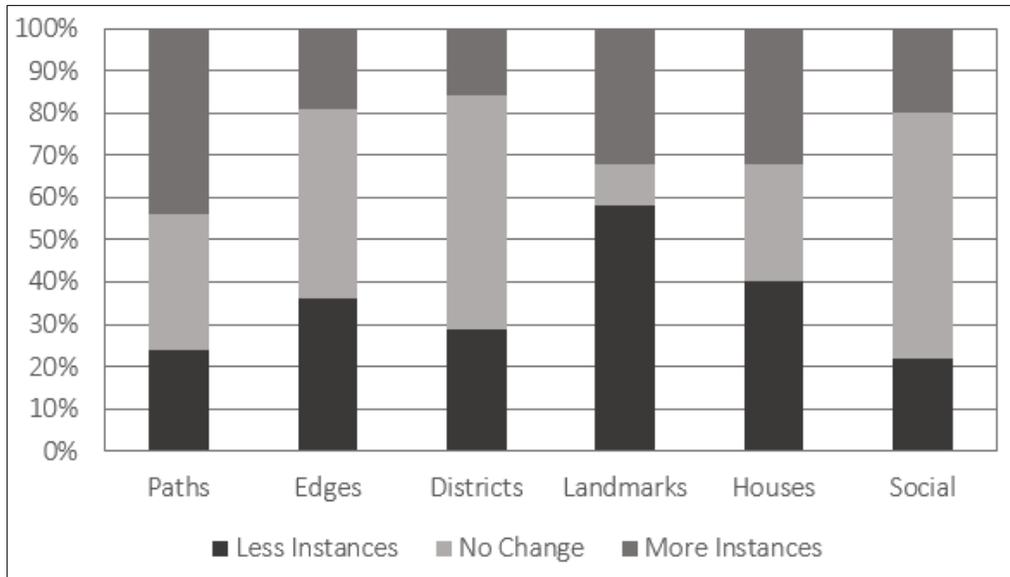


Figure 4.12: Comparison of designative map elements for both mental mapping sessions.

Analysis of the Matthews levels and the designative codes indicated that students included fewer elements and drew lower levels of mental maps in January 2016. This might suggest that the students did not gain a better understanding of their community over time, or they weren't able to visualize their spatial sense of community as well during the January round.

However, there are issues of comparability for one to consider when looking at these data. There was a change in procedure that could have influenced these results. At the beginning of each round, students were provided with an oral definition of a mental map and were given 5 minutes each time to draw their mental map, but they were not provided a practice round at the beginning of the January 2016 mental mapping session. Before they began their community maps in September 2015, students were asked to do a practice round in which they drew a mental map of their classroom. This change in procedure could have had an impact on the number of instances for designative codes and Matthews levels.

Student Culture, Experience, and Sense of Place

Student culture, experience, and sense of place all played a subtle factor in the mental maps and the focus group interviews. Aspects of community go beyond the classroom and the Designative Categories for the mental maps. This more interpretive phase of analysis is where the Appraisive Categories come into play. Several instances occurred in which culture and experience were evident in the students' responses and mental maps. These instances can cue into how a student's background might be tapped into for a community geo-progression.

Recent refugees and immigrant participants tended to situate community either around the household or in their country of origin. On one extreme, a Somali refugee and a student from Vietnam, now both Garden City students, drew the inside of their houses as their community. On another occasion, a Junction City immigrant from Puerto Rico drew two mental maps focused around the household (Figure 4.13). Spanish labels were displayed on both of that student's drawings: "Mi comunidad" (my community) and "Mariposa" (butterfly). An interesting observation of this student's progression through third grade was the experience of his assimilation process. While the mental maps did not differ as much, the nature of the focus group interviews changed significantly. In the first round, the student was not confident enough in their English, so I conversed in Spanish. By January 2016, however, the student insisted on speaking English. During the second focus group interview, this Puerto Rican student talked about community as a "home that everybody likes it there" and later, "in a community you can make friends." These vibrant conceptions of community relationships appear to be stark contrasts from the quiet student at the beginning of the school year. The student's overall change in demeanor, statements, and increased confidence with speaking out demonstrated that this

student's perception of community had changed in a positive way from September 2015 to January 2016.

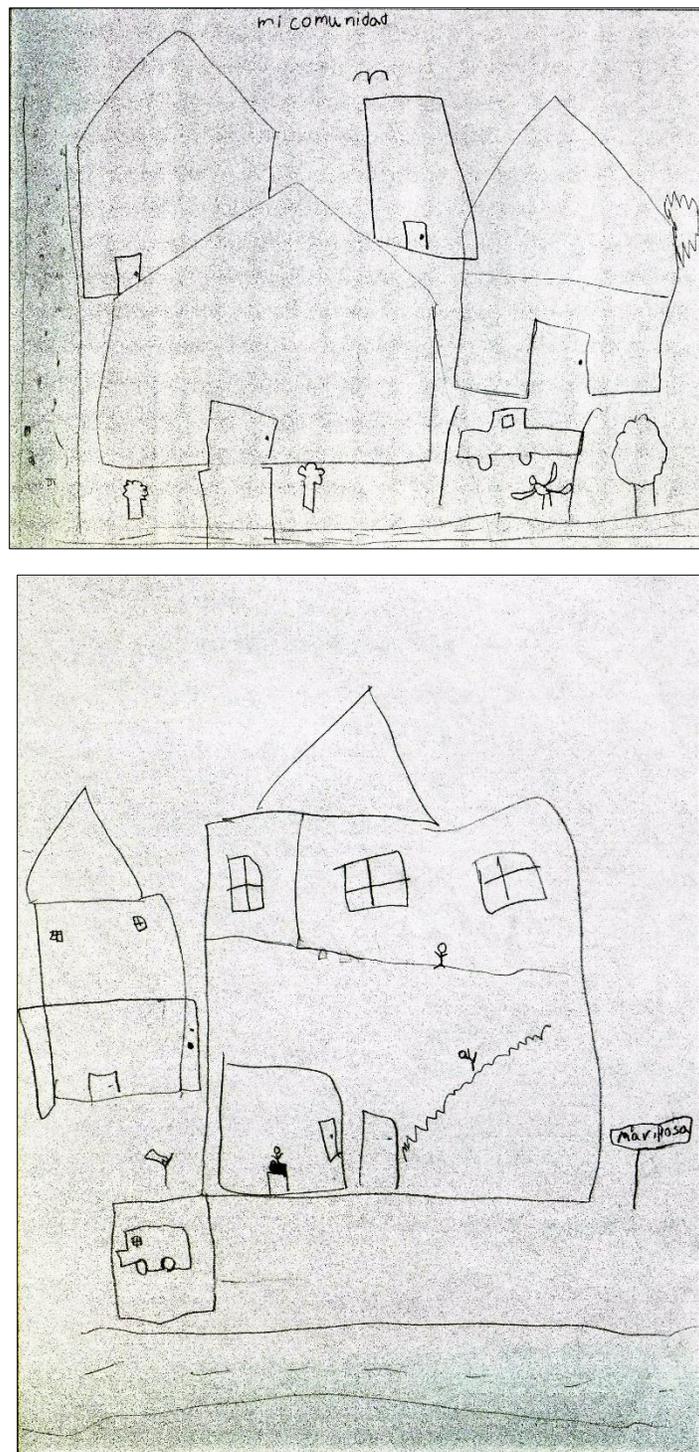


Figure 4.13: Round 1 (September) (top) and Round 2 (January) (bottom) mental maps from a Puerto Rican immigrant.

Further, a Manhattan student from Libya drew two mental maps of his community back in North Africa (Figure 4.14). During the focus group interview in September, this student talked enthusiastically about the weather and climate in Libya while conversing about home:

Libyan Student: "...I live in the desert with my grandma and my dogs and my cat. The dogs stay in the barn. My cats stay outside. They go around the place. And sometimes they do bad stuff, I put them in the chicken pen with the chickens out because the chickens go crazy."

Researcher: "Were you born in Manhattan?"

Libyan Student: "No, I was born in the desert."

Researcher: "The desert?"

Libyan Student: "Yeah, with my mom."

Researcher: "And do you know what country?"

Libyan Student: "Yeah, it's across the ocean. Two planes. It takes forever and I don't like it."

Researcher: "So are you from [Africa]?"

Libyan Student: "Yes."

Researcher: "Do you know exactly which country?"

Libyan Student: "Not really, no."

Researcher: "You don't know which country?"

Libyan Student: "I think it's called Libya."

Researcher: "Libya! Yeah."

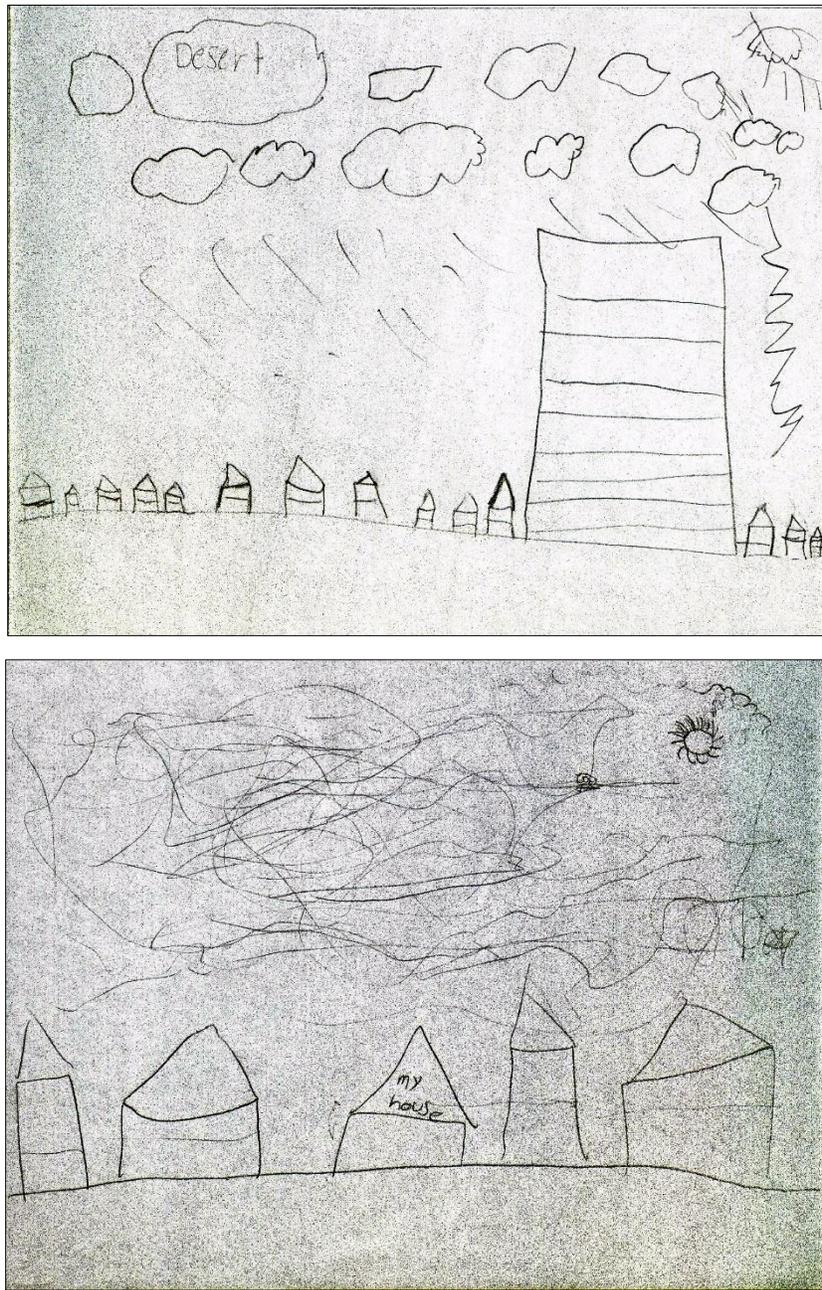


Figure 4.14: Round 1 (top) and Round 2 (bottom) mental maps from a Libyan immigrant.

During the first round, this student simply referred to his community as “the desert,” which is depicted as a label within a cloud on his September 2015 map. In January, he spoke about the weather that he had heard there being in their country of origin. He stated,

“Since the last few days, I heard from my Mom and my grandpa that Libya’s world has gotten bigger. Like the world is filled of sand, like in the windows are filled of sand, so we have special devices to clear off sand off the windows.”

The Libyan student’s mental maps and focus group responses suggest that he still has a cultural attachment and sense of place to the country from which he came. Group discussion about this topic led to the dialogue between the Libyan student and an immigrant from the Philippines.

Filipino Student: “The first time I came to America—that was probably when I was six or seven. No. I was five when I came to America.”

Researcher: “Where are you from?”

Filipino Student: “From the Philippines.”

Libyan Student: “When I came here, I was like five years old. Yes – or four.”

Filipino Student: “I was like, ‘What? What is this place?’ and I was like ‘I don’t like it here. Can we go back?’”

Libyan Student: “When I first looked at it, I was like ‘This place does not look good.’ It did not look pretty.”

This exchange between two students in the same class show two children from different parts of the world who have similar attitudes toward a particular place — Manhattan, KS. Likewise, the interactions with the Puerto Rican student indicated that perceptions of community change as the person becomes more familiar with new surroundings.

Experience of the community was another major theme that came up in the focus group interviews and mental maps. A Manhattan child drew the Aggieville bar district during the September 2015 session, complete with Cold Stone ice cream store, a sports bar, take-out food retailers Mr. Goodcents and Subway, and a hair salon (Figure 4.15). In the focus group interviews, another student alluded to the fact that this student lived near Aggieville and spent a significant amount of time there.

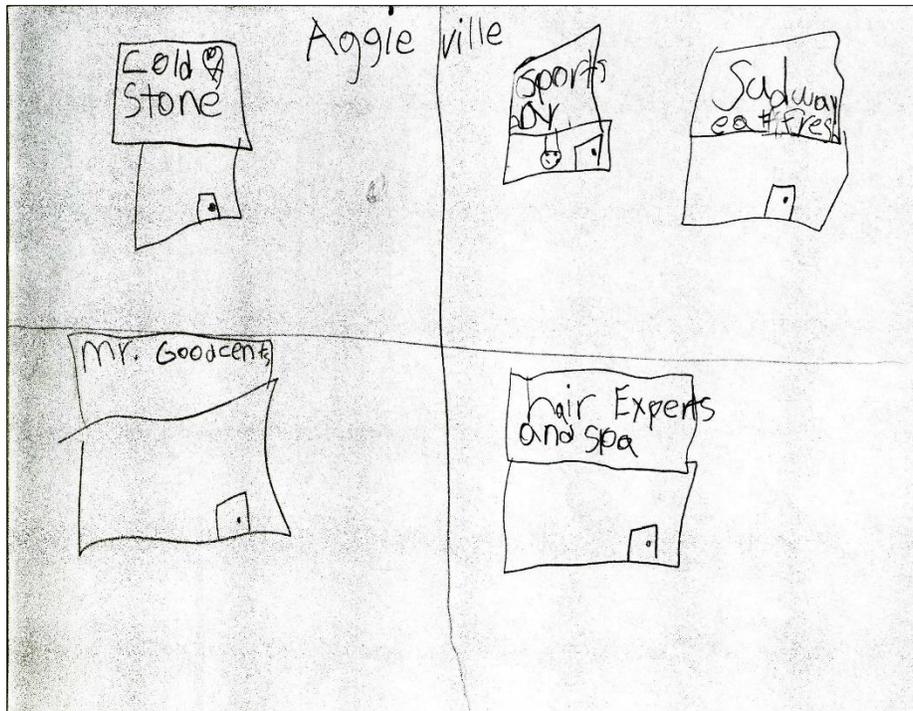


Figure 4.15: Student's mental map of Aggieville, Manhattan, September 2015.

In Horton, the Reinventing Horton project came up often on the mental maps and in the group interviews. I was asked on several occasions if I had visited the new coffeeshop in the downtown area, along with other places like Bordeaux's Pizza or the new Mexican restaurant in town. One student drew a mental map of the Horton downtown area, including the coffeeshop and the Mexican restaurant, along with other businesses like OK Corral, Thriftway, and Dollar General (Figure 4.16). The presence of these businesses on the mental maps suggest that the Reinvent Horton project has had an impact on students' experiences and their senses of place. According to the teacher in Horton, the new changes to the downtown area have been incorporated into classroom content. As a result of class discussion, students are up-to-date on the happenings within their rural town. Consequently, it seems as though students in smaller towns like Horton may be inclined to gain a deeper localized concept of a community-based sense of place.



Figure 4.16: Student’s mental map of downtown Horton, January 2016.

In another situation, a Junction City student illustrated the connection to the military and Fort Riley by drawing one of the war memorials from the Towne Plaza next to the downtown area (Figure 4.17). Trees surround the memorial, which depicts two soldiers and the First Infantry Division symbol on the top-center of the landmark. Such a drawing of community exemplifies a cultural sense of place and military connection that was brought up in the focus group interviews and the mental maps of Junction City.

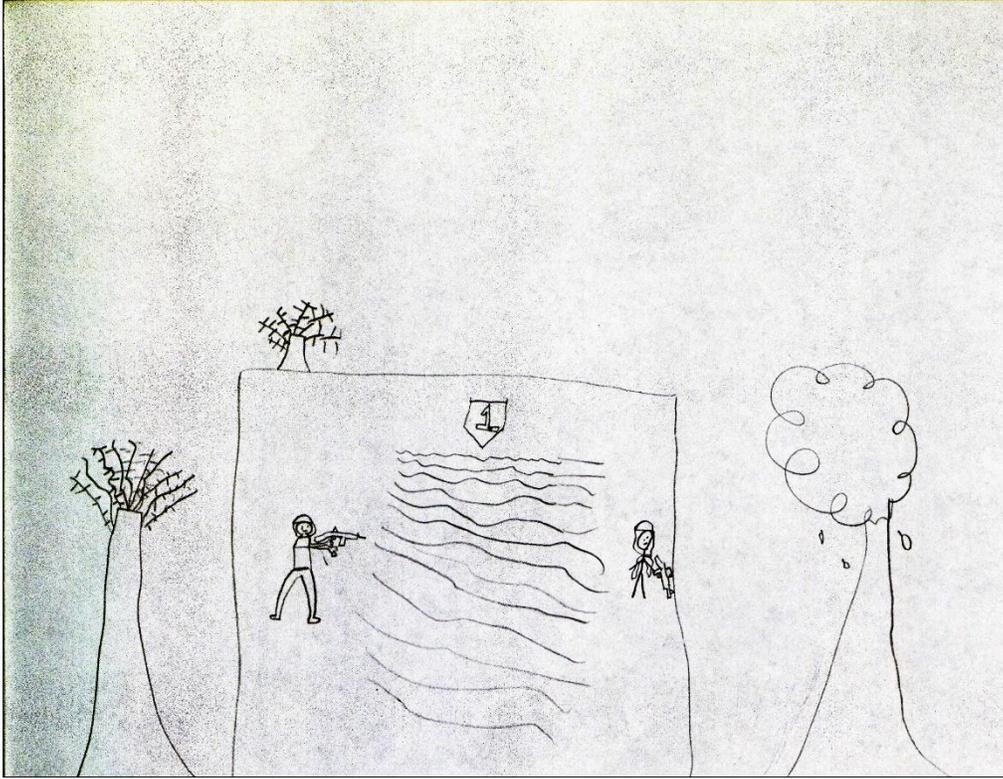


Figure 4.17: Student's mental map of military memorial, September 2015.

Change in Procedure vs. Change in Learning: Classroom Resources and Barriers to Teaching about Community

Regardless of the comparability issues with the mental maps from September and January, the focus group interviews with students and the semi-structured interviews with teachers suggest that the students did not necessarily learn very much about community over the study period. Four teaching-related barriers to students learning more about community include: 1) level of teacher knowledge of the community standard, 2) time constraints and teacher expectations to teach tested subjects rather than social studies, 3) the perceived absence of social studies within the third grade Kansas classroom, and 4) lack of knowledge of the National Geography Standards.

There was a spectrum of awareness among the teachers of the third grade community standard for the *Kansas Standards for History, Government, and Social Studies*. One teacher claimed to look at the state standards before each year to see if their lesson plans are in alignment. Two other teachers commented that they knew about the community theme for the standards, but relied more on experience regarding what content works and what does not in the classroom. One teacher reported that

“I don’t look at them real close. When we have our meetings, I glance through them, that sort of thing. So honestly I just kind of – overhear is what I’ve learned [sic] and what I just keep teaching them and throwing in, you know, so...”

This teacher later said that she has focused more on “experience than relying on the standards and hoping [she is] covering everything that’s in there.” On the other end of the spectrum, one teacher admitted that she did not know about the community standard, remarking that “the standards are so vague... there’s seriously like six and they’re the same for third and fourth grade.” Later in the interview, she remarked, “Honestly, at the beginning of the year I looked at what they were and... that was it.” Based on conversations with the five teachers, it is clear that there is large variation in awareness of the standards.

Another barrier to the teachers spending more class time on community is the time constraints and the expectations placed on the teachers to emphasize tested subjects rather than topics like community, geography, and social studies as a whole. One teacher reflected, “I just think of all these things I can – I should be teaching them [what] they don’t know and [what] they need to know. But I just don’t have time.” This teacher later stated, “And they keep getting rid of our time, so it just makes it that much harder.” Social studies is often marginalized in the Kansas third grade classroom due to expectations of teachers to have their students learn tested areas, such as math, reading and writing. To illustrate, one teacher commented that “partly um,

social studies isn't a tested area, so it gets put on the back burner." This teacher remarked that if students' reading scores need improvement, then more reading is added to the curriculum.

Among the teachers, there were multiple reactions to these expectations: social studies is not taught; it is integrated into other subjects; or teachers collaborate with other teachers in developing multidisciplinary lesson plans for science, social studies, reading, and writing.

However it is handled, topics like social studies and geography are perceived to be difficult to incorporate into lessons.

As a third problem or barrier, and as a result of the limitations placed on teachers, there is the very real perception that, as a matter of social acceptance, teaching social studies remains largely absent in the third grade, and that geographic concepts are largely absent from social studies. One teacher helped coordinate a poll within the local school district that measured how much time was spent on social studies per week. The average was twenty minutes, two times per week for ten minutes. In general, the younger the grade level, the less social studies is taught. For one teacher's classroom, phonics and writing tended to dominate the social studies time, even though social studies is written into the schedule. Geography comprises a small fraction of the already small amount of time allotted to social studies; as one teacher began describing the situation,

"Honestly, a lot of the curriculum that we've looked at is – I would say there's minimal amounts of geography. It's mostly, um, I don't want to say current events, but it's, it's like political. It's that sort of thing, it's um not so much history but [trails off]..."

The lack of geography and social studies lessons in the classroom also shows up in the focus group interviews with the students. As mentioned previously, when asked in January 2016 about how their perceptions of community changed over the year, members of 13 of 21 focus groups said that they didn't know, couldn't remember, or provided no response. They often

talked about changes actually happening within their community rather than what they were learning in class, such as the opening of a new store. Despite my insistence that there was no “right or wrong answer,” the students often framed their responses based on perceptions of whether or not their past and current understandings of community were the correct ones, rather than recognizing that they are building a multidimensional understanding of place. To illustrate, one student said that

“Last time I thought community was like your neighbors and your neighborhood, but this time I think that a community is where people go to help with their jobs and all the stuff around them.”

Both parts of this student’s response were valid representations of community. But this right or wrong view of learning polarizes the students’ thoughts rather than allowing broader or more holistic concepts to further develop. Results were affected by limitations of the students’ memory, but they also identify the placelessness of the social studies community curriculum within the classroom. As mentioned previously, many of the students’ understandings did not seem to venture beyond page six of Houghton Mifflin’s (2008, 6) textbook *Social Studies: Communities*. Several students in one focus group could list “site words” provided by the book, like the definition of community, suburban, rural, and urban areas. But there was little discourse about what these dimensions of community mean or how they can be integrated into a larger whole. In the same focus group, one student admitted, “We haven’t been doing social studies.” A second student finished the previous student’s thoughts: “– In a long time.” In another class, a student also admitted that they hadn’t learned about community “Because we haven’t been doing social studies.” Another student interjected that “Um yes, sometimes we have [been doing social studies] but I already knew the stuff.” A third student added that “It’s like what we did since second grade.” In another focus group, participants confirmed the previous viewpoints:

Researcher: Has what you learned in ----- class helped you learn more about your community?

Student I: “They don’t really teach that.”

Researcher: “They don’t really teach it?”

Student II: “They teach ABC.”

(Participants began speaking all at once, so the researcher quieted everyone before the next respondent’s answer)

Student III: “Like vocabulary words. Like ones that have the same -er and -ir words.”

Finally, none of the teachers were aware of the National Geography Standards, including Geography Standard Six (how culture and experience influence people’s perceptions of places and regions). When conversing about the teachers’ awareness of this resource, the interview took on a different tone, with the researcher sharing information about the different types of standards and why Geography Standard Six was important to the research. The apparent lack of knowledge about the National Geography Standards creates the fourth barrier to teachers being able to situate community within a student’s sense of place and perception of the environment.

Though the amount of social studies being taught varies among classes, these responses provide an indication of how teachers and students perceive social studies education at the third grade level in Kansas. Overall, there are multiple barriers for adding another step on a community geo-progression ladder at the third grade level. As a result, the change in procedure for the mental maps between September and January becomes less significant of a factor because students were not learning about community, as it was. It may have been that the change in procedure (no practice map at the beginning of the second session) had a greater impact on mental map content than the change in students’ understandings of community.

Classroom content had a profound influence on student responses regarding what they learned about community. YouTube, Google Earth, and Reading A-Z were primary internet

resources on which teachers relied for classroom content. One teacher talked about how she incorporated historic photos to get students thinking about how their community has changed over time. Below outlines part of this dialogue:

Student I: “[The teacher] showed us pictures of when it was – before we were here.”

Researcher: “No way. What was it like?”

Student I: “But it was a black and white picture.”

Student II: “Yeah [*cuts Student I off*]. It’s like houses made out of dirt and grass. That’s... mostly what we saw. I’ve been to a house made out of dirt and grass. It’s pretty cool.”

In the interview, the teacher remarked that later in the spring the class would incorporate more historic photos of the town into class lessons. This approach to teaching about community makes sense given the parenthetical use of “local history” along with the specification of community as the Kansas third grade standard. Use of historic resources seemed to stand out in the students’ minds as a way for them to understand the nature of how their community changes. Two teachers from a different community mentioned how they tailor some of their lesson plans to major events happening within the town. “In the spring,” the teacher said, “the district always has third grade Ag Day, since we live in such a rural community, to teach the third graders all about agriculture.”

Many of the textual resources mentioned by students and teachers were primarily geared toward literacy rather than focusing on social studies (Table 4.6). Some of the resources had an inherent moral component to them. For example, a book that was fresh in the minds of January 2016 students was *Judy Moody Saves the World!*, by Megan McDonald. The storyline of this book dealt with issues of environmental degradation and sustainability. According to student responses, the book taught about the importance of recycling, to not litter, and, as one student

stated, to “think about other people and not just yourself.” Other books mentioned by the students delved into the variety of cultures and worldviews and the implications for ways of living and cultural practices. *Hindu Holiday* and *Christmas Around the World* presented cultural customs of celebration within different communities across cultures.

Table 4.6: Examples of published resources cited by teachers and students.

Resource	Author or publisher
<i>City Homes (Homes Around the World)</i>	Nicola Barber 2007
<i>Deep Down and Other Extreme Places to Live</i>	Scott Foresman 2015
<i>Social Studies: Communities</i>	Houghton Mifflin 2008
<i>Journeys: Practice Book Grade 3</i>	Houghton Mifflin 2009
<i>Christmas Around the World</i>	Mary D. Lankford 1998
<i>Judy Moody Saves the World!</i>	Megan McDonald 2010
<i>Roxaboxen</i>	Alice McLerran 2004
<i>Hindu Holiday</i>	Marla Patel 2005
<i>Scholastic News Magazine</i>	Scholastic

There were also resources that dealt explicitly with physical community characteristics. In *City Homes (Homes Around the World)*, according to a Junction City student, the class “saw a lot of things like houses, when they were together and stuff, apartments, and stores and things, and schools.” Another student remarked that the book taught them about “how people build their houses in other places.” This book addresses the different aspects of how a city is built and managed. Similarly, *Roxaboxen* by Alice McLerran was cited by a teacher as a book on how communities change over time, saying, that the book “kind of adds in little bits and pieces as the kids are playing and so it kind of fits in with how people develop their communities.” *Deep Down and Other Extreme Places to Live* addressed communities in particularly harsh environments, like the desert and the arctic climates. One of the teachers remarked that this book

sparks a comparative discussion among students about how people in these communities live and get their food. In the student focus groups, one of the students provided an enthusiastic synopsis of the book:

“In *Deep Down and Extreme Places*[sic], some of the places snows and then the places like the Grand Canyon are deep. Rocks fall, stuff like that. There’s waterfalls. There’s villages at the end. They survive stuff like that. And there’s one that’s the hottest place on earth. And we learned how it’s hot. It’s hot from the sun, when it blows it’s hot, when it blows wind it’s hot. And in the ground, when the plates rub together, and the lava just rises up. It doesn’t just go real high. It just touches the top of the thing and it just warms up on the floor and they use camels. They use salt to sell it. And there’s also another place with snow. It’s like a lot of snow.”

Although sounding scrambled, descriptions like these prove that students are capable of developing informed conceptions about various characteristics that may contribute to how a community survives and thrives. Referring to Perry’s (1970) scheme for intellectual and ethical development, this student appears to have grasped a multiplicity/subjective knowledge of how communities differ according to the interaction between nature and society. In another example, the students talked about the things they learned about volcanoes in *Scholastic News*; as one student put it: “how volcanoes affect our world by hurting a lot of people and the smoke can kill them and there’s really bad gas that comes from there.” This student’s response coincides with Perry’s (1970) relativism/procedural knowledge phase because he was able to combine empathy with objective analysis to determine why volcanoes are a systematic threat to various communities around the world.

There is a need for lesson plans that allow teachers to integrate these kinds of examples in order to help students build a better, more expansive understanding of community. The only social studies-specific resources mentioned by students and teachers were the *Social Studies: Communities* and *Journeys: Practice Book*. For the most part, these resources were mentioned

only in passing by the students and teachers, but not emphasized. One teacher remarked that their school's social studies resources were old and in need of updating, particularly the *Social Studies: Communities* book. The majority of the resources participants found relevant were located within the reading and writing aspects of the curriculum.

Though these resources contain good material that is relevant to building an understanding of community, their availability varies, as these books are interspersed among classes and cities. There is little cohesion among these resources, except for the facts that they somehow relate to the community theme and that they are intended to help students read rather than necessarily help them learn about community. Too much reliance on resources centered on communities elsewhere (*i.e.*, New York and Atlanta in *Social Studies: Communities*; India in *Hindu Holiday*) could displace the students' perspectives of their local community, if they are not reflecting on how these texts can help them better understand the cultural landscapes of their own community. Also, books that center on different kinds of communities and how communities develop (*i.e.*, *City Homes: Homes Around the World*) can be effective if they can contribute examples toward a discussion or activity designed to address how the students' local community changed through history. Otherwise, students have knowledge of different cultural customs and communities but no constructivist foundation from which to ground what they are learning or provide context.

Discussion: Animated in September, Jaded in January

This research possesses multiple limitations. First, it would have been beneficial to have a longer time than one hour to conduct a mental map session and interview each student individually. If allotted more time, I would have engaged the students in alternate tasks of mental mapping in addition drawing a picture of their community. For example, I would have

replicated Matthew's (1984) study which had participants draw sketch maps of their journeys from home to school. Variations of the mental mapping exercise like drawing route maps could yield more insights on how students understand and visualize their spatial sense of community. However, each round of the study had to be conducted in the one-hour time slot when the class was all in the same room. As a result, students had a relatively short time to make mental maps and be interviewed. Second, the time frame of September 2015 through January 2016 marks only half of the school year. Therefore, a learning progression for community in this research can only account for what the students learned during part of the year.

Also, student temperaments and seasonal changes can have an enormous effect on how the students view their community. In winter, children are less likely to explore the various parts of their town due to possible inclement weather. Children are more likely to be allowed by their parents to stay outside longer and have a farther range of play during the warmer months with longer daylight hours. Responses are also subject to variation according to whether the children are hungry, feeling hot or cold, or tired (Hart 1979, 85). Seasonal changes, combined with student temperaments, could have had an influence on the diversity in style of the mental maps from September to January, as well as the types of features included on the drawings.

In spite of the limitations, this research demonstrates several key points about geo-progressions for sense of community. The first point is that students have the ability to think about the dynamic complexities of community and are able to connect their own culture and experience with their understanding of community. With that said, teachers experience difficulties in incorporating social studies content without either sidelining the subject or integrating it into other tested topics like reading and writing comprehension. Despite procedural issues, this research found that many students did not necessarily gain, nor were they able to

communicate, an increasingly sophisticated conception of community over time. Responses tended to be diverse, especially when students appeared to be either guessing answers or basing answers off of what their peers said and drew. More work needs to be done regarding procedures on how to collect sketch map and verbal data that trace students' understandings of community over time to insure consistency and rigor. Finally, a critical eye must be placed on the resources used in the classroom and how they do or do not contribute to the expansion and deepening of a student's understanding of community. Learning progressions about community and sense of place should be couched in the "here and now," not just the "there and now," or the historical "there and then." Creating a learning environment that integrates a diverse series of resources that connect with the students' own culture, experience, and sense of place within their own communities is needed.

Chapter 5 - What's the Matter with Kansas Third Graders?

Elegy for a Prairie Town

Since you moved away,
the tame edges

of our home town
have grown wild.

Every year, we prop
framework
of what remains—
yet bedrooms and barns,

even schoolrooms
soften from decay—

compost for prairie
reclaiming its place

- H.C. Palmer (2008)

1116 hours.

That's how long a school legally needs to be open and teaching students, according to the Kansas State Department of Education. At six hours per day, that equals about 186 school days spread over roughly 37 weeks of the year.

20 minutes.

That's how long, on average per week, that social studies is taught in one teacher's school district. Over time, this proportion of class time is equivalent to about one percent of the 1116-hour school year.

42 minutes.

That's how long dentists suggest people brush their teeth during the week (three minutes per brush, twice a day).

These numbers suggest the possibility of misplaced priorities with the state of social studies and learning about community within the Kansas third grade classroom. Teachers are pressured to train students for tested subjects like reading and math, and are expected to integrate social studies into the curriculum if possible or when it is convenient (Heafner and Fitchett 2012). The numbers at the beginning of this chapter echo what is wrong, not necessarily with Kansas, but with the American education system as a whole.

Examining the results of this exploratory research, I attempt to make some logical connections to construct a basis for future interventions and strategies to improve education outcomes for geo-progressions and a community-based sense of place (IES 2009). The final chapter of this thesis will summarize and integrate the insights found in the literature and the study's findings and analysis. Then there will be discussion about what a community geo-progression might look like for a Kansas third grader. This chapter will conclude by connecting these findings with the greater systemic issues happening within U.S. education and discuss avenues for future research.

A review of the literature suggests the importance of viewing learning progressions as multidimensional and constructivist, where students take diverging and crisscrossing paths to mastering a subject and teachers became the gatekeepers to unlocking new worlds of understanding (Gibson and McKay 2001; Maxim 2006; Nuthall 1999). Existing educational structures, however, provide little room for teachers to do this with any level of competence. Students are taught to read and write, but their senses of place and understandings about community remain abstract ideas and filler words to frame the *Kansas Standards for History, Government, and Social Studies*. Students are lucky to comprehend the dimension of existence that they are already experiencing – buildings, parks, fast food restaurants, church groups,

friends' houses, playgrounds, and ice cream shops. Simply an ability to identify with and effectively communicate these aspects of community seems like a feat in itself.

This study attempted to trace the journey of learning for the Kansas third grader. Students from an immigrant town, a military town, a college town, and a rural town in the midst of reinvention drew mental maps and talked about their community on two occasions, once during September 2015 and another in January 2016. The findings indicate that culture and experience play an underlying role in the students' learning about community. Definitions of community vary across the board in terms of scale and aspects included, yet these responses changed very little in syntax and sophistication from September to January. There was little generalizable evidence of increasing sophistication toward understanding community over time. Finally, the classroom environment and content utilized are integral to student learning, particularly regarding the amount of time devoted to reflecting on community awareness and tapping into students' prior knowledge and experiences.

This tracing of the journey through mental maps proved to be a difficult method to measure a community-based sense of place geo-progression over time. From a learning progression perspective, I have learned that the journey of learning about geography, specifically a spatial sense of community, cannot be measured solely from visiting a classroom a couple of times throughout the school year and asking kids to sketch everything they know about their community on a sheet of copy paper using a lead pencil. Regarding the mental map coding, the Matthews (1984) levels of cartographic visualization as well as the Designative and Appraisive Categories helped to understand how students express a spatial sense of community; but these methods and metrics proved inconsistent when attempting to measure any difference in learning progressions over time. Mental map analysis provides one way to approach characterizing

student perceptions of community, this quantitative method must be triangulated with other qualitative data in order to have any contextual validity.

The focus groups and interviews with teachers and students helped better contextualize ideas that students could not reproduce through making sketch maps. The resources and class content cited by participants did connect to understanding community in some way. However, these resources were termed as “outdated,” or meant for other subjects like reading and writing, not social studies or geography. Additionally, there were barriers to learning about community, such as available classroom time, expectations that teachers have to prepare students for standardized testing, and teacher awareness and use of the Geographic Standards. Some of the teachers from this study identified an inherent flaw within the current education: standardized test take precedence over social studies and geography.

What Geo-progressions Look Like for Geography Standard Six and a Community-Based Sense of Place

This exploratory research marks the first installment of a series of studies that will attempt to develop and refine a geo-progression for the community theme and Geography Standard Six. One of the questions that this research sought to answer is what a community geo-progression might look like at the state and national levels for K-3.

At the state level, the *Kansas Standards for History, Government, and Social Studies* bases its grade level progression on the so-called “Expanding Horizons” model, which originated in the late-1800s. This model has been criticized by education researchers (Fore and Biermann 1998; Wade 2002) for being too unidimensional, unpopular, vague, and outdated. Yet, the model’s inherent geographic perspective of scale has compelled some geographers to consider how the National Geography Standards could be incorporated into its framework and the

frameworks of other learning models (Hume and Boehm 2001; Rutherford and Boehm 2004). The Expanding Horizons model continues to be applied in the standards used in numerous other states (Alabama Department of Education 2006, Arkansas Department of Education 2014, Idaho Department of Education 2015, Massachusetts Department of Education 2003, Mississippi State Board of Education 2010, Nebraska State Board of Education 2012, New York State Education Department 2014, South Dakota Department of Education 2015, Utah State Board of Education 2010).

The Kansas Standards, in particular, do not adequately communicate the nature of a student's development of a sense of place and how that awareness results in an understanding of the dynamics and complexities of a community. Despite vague references with no definition or grounding in social science or geographic research, these time and place awareness concepts provide a starting point from which to look at a geo-progressions for place and region. If the community horizon is to be utilized in third grade, then the scale of place should be more localized to minimize confusion among students. In such a case, students should be able to effectively communicate the different components of a *local* community, how a local community functions, and how a local community changes over time. Students should also be able to discuss places in their community that are meaningful to them. In addition, the student can be challenged to reflect on how their intimate understanding grows as the student learns more and experiences more about the local community.

Through this research, I tried, in part, to examine geo-progressions for National Geography Standard Six (Heffron and Downs 2012). The current state of these standards depicts waypoints for fourth grade, eighth grade, and twelfth grade (Table 5.1). Grades K-3 are left out, making it difficult for primary and elementary grades to incorporate the National Geography

Standards into their curriculum. The waypoints for the lowest level, fourth grade, indicate that the student should be able to recognize “differing views of community” and that “place becomes more familiar the more it is experienced” (Heffron and Downs 2012).

Table 5.1: Waypoints of learning for National Geography Standard Six (right) and a proposed set of waypoints for the K-3 grade levels (left) (Heffron and Downs 2012).

Kindergarten/ 1 st Grade	2 nd Grade	3 rd Grade	4 th Grade	8 th Grade	12 th Grade
Introduce idea of place, region/area, or community.	Understand the different components that make up a community, place, or region.	How to read the landscape: How to integrate multiple components through mental maps/images of place.	Differing views of community	Perceptions of places and regions through direct (i.e. travel) and indirect experience (i.e. media, books, family)	How race, ethnicity, age, social class, etc. affect perceptions of places and regions
Suggested Waypoints		Reflect on one's own sense of place within their community	Place becomes more familiar the more it is experienced	How views of places and regions change as a result of media reports or interactions with other people	Consequences of globalization and inequality on perceptions of places and regions

In considering the “Expanding Horizons” model of community for grades K-3, and the waypoints for the fourth grade, I propose some ideas as potential landmarks for grades K-3 (Table 5.1). These suggestions incorporate schemas or scaffolds as used in constructivism, as well as Perry’s (1970) scheme of intellectual and ethical development (Gibson and McKay 2001; Maxim 2006; Nuthall 1999). In kindergarten and first grade, students could be introduced to the concepts of a place, region/area, and community, which could provide the foundational, or dualistic, knowledge that embodies the beginning of Perry’s (1970) phases of development. This introduction might provide the framework for elementary students to consider more sophisticated topics in the later grades.

Second grade could have students explore the different components of place, region, and community. Drawing from the multiplicity/subjective level of Perry's scheme, students could learn about the various aspects of a spatial sense of community, including the topic's connection to Lynch's (1960) five designative categories: landmarks, paths (streets and sidewalks), nodes (areas of social concentration), edges (boundaries), and districts (*i.e.*, industrial, business, residential). Additionally, students may learn about the different types of communities, such as rural, urban areas, and suburbs. By building upon their previous scaffolds of places, regions, and community, students are engaging in constructivist learning practices, as well (Gibson and McKay 2001; Maxim 2006; Nuthall 1999).

In third grade, elementary students could then embark on learning a *new language*—reading the landscape and understanding how perceptions are created and shared through mental maps and images of place. Such ways of thinking combine both subjective and objective thinking outlined by Perry's (1970) phase where learners reason using both subjective and objective procedures. Geographers like Lewis (1979) and Meinig (1979) have created structures for beginning to read a landscape. Lewis (1979) used seven axioms for describing landscape, including landscape as clue to the type of people who come from there, culture's inherent connection to landscape, cultural significance found in common everyday items, history, locational/spatial context, connection between the cultural and physical landscape, and underlying messages found in objects within the landscape. Meinig (1979) offered another way to frame landscape interpretation, which entails ten different lenses for viewing the same landscape: landscape as nature, habitat, artifact, system, problem, wealth, ideology, history, place, and aesthetic. With some simplification of these different lenses for reading the landscape, third graders could build upon their knowledge from a constructivist standpoint by

reflecting on how they develop their own sense of place within their communities. This type of knowledge-gain also harkens back to the final phase of Perry's (1970) scheme, in which learners are able to construct deeper knowledge structures based on experiences and everyday interactions.

Though each of the proposed standards are experienced by students at all levels, these suggested waypoints seem like essential steps from which K-3 students could enhance their idea of how people develop perceptions of places and regions. More research is needed to understand the nature of K-3 geo-progressions for Geography Standard Six in order to refine and improve upon these suggested waypoints.

Issues in Statewide and National Standards for Social Studies and Geography

The question was posed in the headline of this chapter: "What's the matter with Kansas third graders?" The answer is nothing. Is it the teachers' faults? No. The parents? No. The school district? No. The issue of time dedicated to social studies and geography reflects problems that are occurring all across the U.S.

In November 2015, the Iowa Department of Education reported that elementary teachers within the state said that they taught social studies students for an average of just under two hours per week and a median of 90 minutes per week (Iowa Department of Education 2015, 9). The report later pointed out that this time accounted for just 5.7 percent of the teachers' instructional week. A survey of 707 elementary teachers asked about the extent to which the teachers' social studies classes were aligned with the Iowa Core in the Social Studies Standards. Of the responses, 12 percent of teachers said that they need significant realignment, 20.7 percent need some realignment, 33.7 percent are somewhat aligned, 9.2 percent are in complete alignment and 24.5 percent either didn't know or weren't sure (15). The report also mentioned

the desire of teachers to have more support, professional development, and resources for teaching social studies in Iowa classrooms. Respondents also called for improved standards, including more “clear cut standards for each grade and specify what should be taught at each level” and that the standards “are very abstract right now” (23).

Similarly, McEachron (2010) noted that the Virginia grades 1-3 spent an average of 90 minutes per week on social studies during the period of 1987 to 2009. The study also noted that “time allocated to social studies is greater as the grade level goes up” to about 3 hours per week for the later grade levels (220-221). Maryland reported in 2015 that 41.1 percent of 1937 elementary teachers in Maryland taught social studies between 60 and 90 minutes per week and 18.3 percent less than 60 minutes per week, while only 35.6 percent said they spent more than 90 hours per week on social studies (Maryland State Department of Education 2015, 2). These results echo the sentiments felt by Kansas teachers and their third grade students and borne out by this research. Essentially, the same things that are happening in Kansas are happening elsewhere.

At the national level, this impacts geographic thinking and the development of a population that is ready to take on the challenges of the future. An October 2015 study sponsored by Missouri Senator Roy Blunt via the Government Accountability Office announced that eighth graders nationwide are beginning high school with little or no training in geographic thinking (Figure 5.1). The GAO cited survey statistics from the National Assessment of Educational Progress (NAEP), which in 2014 reported that 48 percent of eighth grade participants demonstrated a basic understanding of geographic concepts, 25 percent were below basic, 24 percent were proficient, and 3 percent were advanced (GAO 2014, 9). Geographic concepts included space and place, environment and society, and spatial dynamics and

connections. Both the Kansas Standards concept of community and National Geography Standard Six address each of these realms of geographic thinking by tying in place perception, particularly a community-based sense of place, with spatial reasoning (*i.e.*, mental mapping, scale), connecting how humans affect and are affected by the environment (*i.e.*, pollution, climate adaptation, hazards, and vulnerability), and reinforcing the fact there is a myriad of worldviews and perspectives from which to draw insights.

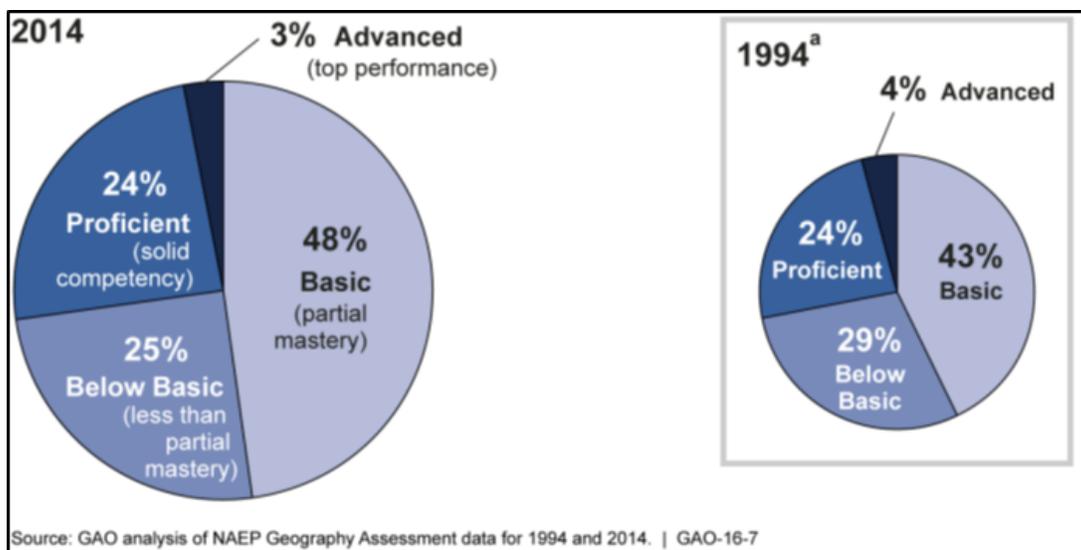


Figure 5.1: Report of NAEP-sponsored survey of eighth grader proficiency in geography (from GAW 2014).

Barriers identified in the Kansas student focus groups and teacher interviews correlated with the sentiments expressed by respondents in the GAO report, including the fact that key education stakeholders do not understand the relevance of geography, educators are not well-prepared to adequately teach geography, good geographic teaching materials and resources are limited and often difficult to come by, and there is little external support from parents and curriculum committees for geography (17). Additionally, geography as a subject is not made a requirement in most states' middle and high school curricula (Figure 5.2). For the case of

efficiently rather than deeply. Students could stand, therefore, to use the classroom as an opportunity to challenge their neural pathways to think deeply, critically, and creatively about the cultural and physical landscapes around them. In reflection, geography is, of course, a natural path to doing so.

Last Child on the Prairie

In an age when some of today's leading scholars are seeking to find better ways to unify and synthesize various types of knowledge (see Wilson 1998), it is difficult to understand why holistic subjects like geography have not been popularized or more formally instituted in K-12 education. Numerous scholarly publications critiquing the nature of learning progressions identify the need to gain a better knowledge of how students comprehend complex, integrative subjects (Black, Wilson and Yao; Furtak, Morrison, and Kroog 2014; Hammer and Sikorski 2015; Solem and Lambert 2014). Holistic thinking is not simply integrating topics in social studies or geography into other subjects, such as reading or writing. Holistic thinking in geography requires synthesis, as Gober's (2000) Association of American Geographers Presidential Address indicated – to identify the connections among culture, politics, economics, physical, biological, chemical, and geological systems that interact with one another. A first step to holistic thinking, I would argue, is for the child to develop a strong sense of, or love for place, especially of their local cultural and physical environs (see Tuan 1974). Children need to be aware that every time they go outside and explore their neighborhood or explore the countless environmental and cultural systems at play, they are in the process of place making, or developing an intimate connection to place.

The current state of geography education makes it all the more important for researchers to “get their boots dirty.” Geography educators in every state should start staging interventions

that instigate geographic thinking and exploration among students and perhaps their parents. For example, teachers could take students for 20-minute walks near their school while engaging them in imagining how the area has changed over time, what elements of the community landscape are and are not represented, and how to map or describe the various features embedded within the nearby landscape. Some groups have resorted to unconventional ways of doing so, including the Geography Collective and the guerrilla geographers in the UK, as well as the critical education scholars advocating for unconventional, place-based pedagogies (Larsen and Tabor 2016).

Geography educators studying geo-progressions also need to conduct more ethnographic work in the classroom where they spend extended time observing and working with students. This concept harkens back to when Roger Barker and Roger Hart conducted their environment-behavior and ethnographic work on children in Kansas and New England towns (Barker 1954; Hart 1979). More research should be geared toward geo-progressions, perception of places and regions, and in Hart's (1979) words, the child's "phenomenal landscape." Such investigations would help to better explain the ways in which children behave in the classroom, how they learn and comprehend course concepts, and the ebbs and flows of their community-based senses of place during the school year.

In conclusion, there are three avenues of future research for geo-progressions and the spatial sense of community for Kansas third graders. The first avenue is to continue building upon the research presented in this thesis. A future study might expand on this research by accounting for procedural issues during the mental mapping sessions and investigating more deeply into the nature of how students develop a community-based sense of place. Further, the researcher could then engage the students in a variety of mapping tasks to bolster the understanding of how students sketch out a spatial sense of community over time. This spatial

aspect of the research could further investigate the interconnections between geo-progressions and the National Geography Standards by addressing the question of whether or not students need to comprehend “the world in spatial terms” before they even embark on learning about “places and regions” (Heffron and Downs 2012). Such a project may be analyzed and used to supplement, and potentially revise, the current findings and analysis. This research could also be replicated across state and international boundaries to understand how children develop their perceptions of places and regions.

Second, new lessons emphasizing tools, resources, and skills could be developed to foster the community concept and Geography Standard Six in the classes. Adoption of these tools, resources, and skills should be enabled within teacher pre-service and in-service workshops promoted by educational advocacy organizations like the National Geographic Network of Alliances for Geographic Education, the National Council for Geographic Education, and the Children and Nature Network. Finally, there should be a review and synthesis of the psychosocial and neurological skills involved in the human-environment experience, similar to what Gersmehl and Gersmehl (2006) did for the eight modes of spatial thinking.

Dr. Stephen L. Stover, Kansas State Professor Emeritus of Geography, wrote with meticulous detail in his memoir, *Home Sweet Homes: A Selection*, of the many communities which he called his “home sweet homes.” These homes ranged from a small farm in McPherson, Kansas, to the places where he was stationed in the military to New Zealand and across the ocean back to Manhattan, Kansas (Stover 2012), where he currently resides. As a well-trained historical geographer, Stover described in particular his interest in teaching geography and described fondly his teaching the geography of Kansas (164). In light of geographers like

Stover, it becomes increasingly important to learn how children in Kansas understand their “home sweet homes” and how this conception of home and community changes over time.

This research was pursued in the hope of helping to ensure that there will be no “last child” on the Kansas prairie who alone holds a knowledge – an awareness cherished by geographers – of the places in which they live, grow, and learn. Further, reflecting upon the words in the “Elegy for a Prairie Town” poem by H.C. Palmer (2008): it is ever-more vital to develop and improve upon geo-progressions addressing a community-based sense of place so that — using Palmer’s poem as an analogy — houses, barns, and schoolhouses of towns, big and small, gain significance for the children living there. By strengthening a community-based sense of place, students may gain a more meaningful awareness and understanding of how they and their peers perceive local landscapes, or “home sweet homes” (Stover 2012).

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Appendix A - Research Script September 2015

0-2 minutes

(Teacher introduces researcher)

Hello, my name is Mr. Larsen. I study geography at Kansas State University. I am interested in how third graders like you see your community. Today, we are going to make mental maps. A mental map is a drawing of how we see the world. Then, we will break up into 3 groups. One group will talk with me. The other groups will play a game with [the teacher].

First, I am giving you a piece of paper. For the next 3 minutes, draw a map of this classroom.

(3 minutes go by)

What did you include in your map?

(2 or 3 responses)

10-15 minutes

Okay, now I'm giving you a new sheet of paper. We've already made one map. Now imagine what your community looks like (wait a couple seconds). Now, draw a mental map of your community. You have five minutes.

(Wait for 5 minutes)

Time is up. Please put your first name and your last initial on the back of your mental map. We will now break up into groups. The first group comes with me.

20-30 minutes

The second and third groups get to play a game. Stand in a circle and toss this globe around. Whatever your right thumb lands on, you have to say whether it is a continent or an ocean (extra credit if you can name that continent or ocean).

(Focus group number 1)

30-40 minutes

The second group, please come with me. The first and third groups: we are going to add a little more to the game. Now, you have to name whether it is a continent or an ocean. Then you have to tell us if your thumb is north or south of the equator.

(Focus group number 2)

40-50 minutes

The third group, please come with me. The first and second groups: I am going to change the rules. If your right thumb lands on a continent, answer what the community would be like for the people who live there.

(Focus group number 3)

We have completed the study for today. But I'm going to be back in January, and we are going to do this again. I'm interested in how your drawings and answers may change over the year. Thank you very much.

Appendix B - Research Script January 2016

0-2 minutes

(Teacher introduces the researcher)

Hello, my name is Mr. Larsen. Do you remember who I am? I study geography at Kansas State University. I am interested in how third graders like you see your community. Today, we are going to make mental maps like we did in September. A mental map is a drawing of how we see the world. Then, we will break up into 3 groups. One group will talk with me. The other groups will do an activity called “Tear the Continents” with [the teacher].

5 to 10 minutes

On your table, you will see a sheet of paper. Here is what I want you to do:

Imagine what your community looks like (wait a couple seconds). Now, draw a mental map of your community. You have five minutes.

(Wait for 5 minutes)

Time is up. Please put your first name and your last initial on the back of your mental map. We will now break up into groups. The first group comes with me.

20-30 minutes

The second and third groups get to play “Tear the Continents.”

(Focus group number 1)

30-40 minutes

The second group, please come with me. First group, you now get to create your own world map of the continents. What is the difference between a globe and a map? Good.

1. Now you have two sheets of paper: One blue and one green. The blue sheet is your ocean. The green sheet is for your continents.

2. You will take one of these world maps, look at the shape of each continent, trace the shape of the continent on the green paper, and tear the shape of the continent to fit your own world map.
3. Glue each continent on the blue paper where they belong.
4. Then label each continent.

(Focus group number 2)

40-50 minutes

The third group, please come with me. Second group, please continue making your map of the continents.

(Focus group number 3)

We have completed the study for today. I'm interested in how your drawings and answers have changed over the year. Thank you very much.

Appendix C - Focus Group Interview Questions September 2015

Focus Group Interview:

Community:

Date: September 2015

What is a community?

Are there things that you know about but didn't include on your map?

What things did you put on your map that you think are really important?

Did you put any symbols like lines or boxes on the map to show roads, buildings, rivers, and lakes?

Appendix D - Focus Group Interview Questions January 2015

Focus Group Interview:

Community:

Date: January 2016

What is a community? Has your answer changed since we last talked?

Are there things that you included on your map that you did not put on your map at the beginning of the school year?

What things did you put on your map that you think are really important?

Have your social studies lessons helped you learn more about your community? What are some examples?

Appendix E - Teacher Semi-Structured Interviews

Interviewer: Thomas B. Larsen

Participant Name (Confidential):

Date of Interview:

Teacher Interview Questions

Preliminary Questions

1. How long have you been a teacher?
2. How long have you taught at this school?
3. How long have you taught social studies at the third grade level?

Community

1. Were you aware of the community theme of the Kansas Standards for third grade before this study?
2. Do you incorporate community into your teaching this year? What ways?

Use of Content

1. What types of resources do you like to use for your lesson plans?
2. How much do you rely on the Kansas Standards?
3. How much do you rely on the National Geography Standards?

Student Sociocultural Backgrounds

4. In your experience, do culture and ethnicity influence how students learn concepts in your class? If yes, how do culture and ethnicity influence your students' abilities to learn? If no, please explain your reasoning.
5. In your experience, do social circumstances (*i.e.* socioeconomic status) influence how students learn concepts in your class? If yes, how do social circumstances influence your students' abilities to learn? If no, please explain your reasoning.