

**NPTT PROGRAM
EDCI 552 PORTFOLIO
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1. Beginning to Teach

February 13, 2005

For Lesson One, my task was to reflect on my personal views about the relationships between the seven areas listed, that is:

- My own underlying philosophical convictions
- My views on what the community & teaching profession expect of me
- My beliefs on the nature of young human beings
- The effects of cultural background on capabilities of students
- My feeling on the nature of subject matter (math) that I teach
- My thoughts on the craft of teaching
- What I believe is the purpose of public schools in American society

My approach will be to use a technique called IPO (Input/Process/Output). This will insure I will consider each area as "Input" with my beliefs listed. Next, I will conduct a "Process" on the relationships between the seven areas that will give me an "Output" about myself as a high school math teacher. My thoughts & beliefs concerning the following the seven areas listed above are as follows.

My own underlying philosophical convictions include the belief that, given a healthy environment, students have intrinsic motivation to learn. To achieve this healthy environment, teachers should treat students with respect and care. A teacher will also need to teach students *how to* learn, so that mastery of knowledge & skills can be acquired. Further, I believe that both male and female students should be treated equally in the learning process.

The community and teaching profession will expect many things of me. For example, as it says in our assigned reading, the community in general wants teachers to be an excellent role model for students to look up to. Parents want their teachers to love and care about their children and to be serious professionals who are focused on learning and are good at teaching their subject (math for me). Parents also want to know that their children's teachers are in unison with what they teach at home. And most parents also have a basic desire to know & trust the teachers. Finally, the teaching profession expects me to put forth my best effort in applying pedagogy principles to my math classes in order to bring forth a positive learning environment for my students to learn and succeed.

I have generally positive beliefs on the nature of young human beings. There is a transformation for high school students from children to young adults when they graduate. Part of this process is a strong desire to learn and explore their horizons in order to figure out what the world is all about. At the same time, they are trying to fit into the social/cultural environment they are in.

Cultural background can have a strong effect on the capabilities of students, both positive and negative. A positive, encouraging background that instills the importance of

education will promote a student to perform his/her best. On the other hand, a negative, discouraging background can prevent the student from pursuing education.

I believe that mathematics is one of the three core subjects, reading and writing being the other two, which students need to master to the best of their ability to succeed in life. There needs to be a strong foundation in mathematics that must be mastered for students to function in the world today. A strong mathematics background is a key requirement in pursuing careers in science, engineering and technology.

When it comes to the craft of teaching, there is a constant evolving, learning process for the teacher to go through. A person becomes a better teacher with experience as he or she learns to blend the skills needed to best reach the students in learning. I also think that teachers need to combine their teaching & social skills in order to provide the best opportunity for students to succeed in learning.

The article we read stated that one of the purposes of public schools in American society involves the concept of equipping children to use cultural tools skillfully. This highlights my own belief in learning how to use such tools to perform functions. I also think it is critical that schools provide a broad based education for students in order to prepare for adult life. Further, schools must invoke students on a self-discovery of who they are, so as to find their own unique talents which can be applied to a fulfilling life and career.

The process of “molding” my beliefs in the seven areas produces an interaction of relationships between each of them. I will be reviewing these relationships on an ongoing basis to improve the output of results. A few examples listed below show the interactions.

My philosophical convictions have impact on all my interactions with the other six areas. My belief that students have intrinsic motivation to learn directly effects how I will teach math courses. For example, promoting students to learn challenging math skills is based on my belief that students want to learn. If I did not believe this, I might be a teacher who simply spoon feeds answers to students without much care as to whether they actually learned the skill or not.

My belief that young human beings want to learn will also help me handle when the negative effects of a student’s cultural background seems to be hindering the student’s desire to learn. This convinces me to not give up on them, but try to give them encouragement to believe in themselves and push harder to learn despite the handicap.

The expectations of a teacher from the community and teaching profession will have a strong impact on my craft of teaching mathematics. An example would be the fact that the community will expect me to be a positive role model, which (I believe) must be reflected by me in how I conduct myself in the classroom. Caring about my students also shows my efforts to be a positive role model. Students know how a teacher feels about them by their actions toward the students.

The “Output” that results from reflecting on my beliefs and thoughts on the seven “Input” areas drives the interaction “Process” that comes from “molding” the relationship of each area towards one another. This “output” is what will define me as a math teacher in high school. Conducting this IPO technique on myself has produced the following for me.

Having a strong desire and will to help students learn mathematics motivates me to become the best math teacher I can be. My basic belief that students do want to learn is fundamental to my efforts to set an environment conducive to learning. Giving respect and caring for students will allow them to push themselves to understand the math skills being taught. Setting high standards for students to strive for will produce math skills thoroughly understood and ingrained in student minds. Setting rules & enforcing them will produce a classroom that functions effectively in helping students to learn math skills and promoting proper social interaction skills.

I believe this technique must be applied many times between now and when I begin teaching next fall, to fine-tune the output that will be known as Jim McCue, Montana high school math teacher. This will give me a solid foundation to begin my teaching career.

2. Montessori

February 13, 2005

For Lesson Two, my task is to understand and describe the socialization process that children undergo in a Montessori pre-school and the nature of “works” that children learn from in her program. But first, I would like to state what an amazing woman Marie Montessori was with her drive and determination to better humankind. Such a broad educational background allowed her to create a system model that grasps and explain human learning along with how to implement these practices. I find it amazing that she discovered all this from just watching a child play with wooden cylinder blocks and realizing what was happening with the child’s intense concentration.

The socialization process that children undergo in Marie Montessori’s pre-school is quite different from conventional schools. First, let’s look at the environment that children learned in. She believed that the dignity of the child must be emphasized to promote learning. Next, peace, order and kindness must be promoted in the classroom. She also believed motivation is an intrinsic and natural process for children to follow on their own.

The classroom process consisted of no grades, no rewards, no punishment, or no competition in the classroom. The focus was purely on learning the works that were given to children. Children become “normalized” to the Montessori environment over time by becoming hooked on the repetitive nature that builds skills in children. The teacher’s role was to facilitate the learning process by introducing the next works for the children to learn and observe their progress. Finally, Montessori believed bad behavior is a sign of a student’s needs not being met—which will disappear when they concentrate on work that produces self-confidence and acceptance through the discovery of one’s self and capability.

My vision of how this socialization works without actually viewing it might go as follows:

Young children arrive at the school and are attracted to the works assignment they were working on yesterday. The children would be very happy, eager to learn and get along with each other. The teacher would monitor the children’s progress on each works and assist children when it is needed. When the child has learned the current works assignment, the teacher would introduce the next one in the sequence and demonstrate how to perform the task with the child completely absorbed in learning this new skill, repeating it until he/she has mastered it. Also, praise from the teacher upon the child’s success would be a key component.

The second task concerns the nature of Montessori’s works, which is the foundation from which children learn. Works are based on four areas, which were broken down into building blocks that were put into a prescribed sequence for children to follow. Each works built on the previous works so that children could learn more and more complex tasks. The four areas developed by Montessori were in Practical Life,

Sensorial Development, Cultural/Artistic and Academic, which consisted of language, reading, writing, mathematics, geography, and science.

The works technique implemented consisted of four steps that every works followed. The first step was for the child to watch the teacher perform the specific works. After the teacher performed the works enough times that he/she thought the child was ready, the child was given an opportunity to try the works on his or her own. The third step was simply the teacher giving assistance to the child when required. Finally, the fourth step consisted of the child rehearsing the works until it was mastered, and the child was ready to go on to the next more progressive works in the planned sequence for that specific area.

Upon thinking about how this four-step process might apply to mathematics, I remember many classes where the math teacher followed this works technique. The teacher would introduce a new math skill via discussion and demonstrating how to work the math problem on the blackboard, while students watched and learned. Next, homework was assigned which repeated this specific problem-solving technique with students attempting the new type of problems. The next day, step three would follow with the teacher going over the homework and providing assistance and demonstration to students who were having problems understanding the new math technique. Finally, more problems were assigned to give more chances for students to rehearse the new math skill until it was mastered. This sequence would be repeated for the next math lesson, which worked off the assumption that the previous lessons were understood by the student and could be used a basis to explain the new math technique.

In conclusion, Montessori's socialization process allowed children to learn as naturally as possible with a very positive environment, along with a well-developed works structure for the child to follow that allowed them to learn more and more complex knowledge and skills. As a prospective math teacher, I find the four step works techniques have been applied to my learning of mathematics and probably will be a cornerstone of how I will teach math.

3. Human Growth Charts/Erikson

February 21, 2005

For Lesson Three, my two tasks are broken down as follows:

- 1st, Gather information about the patterns of human physical growth and answer three specific questions.
- 2nd, Understand what the charts and theories have to say about both stages of physical development and stages of social, psychological and moral development.
- For task #1, three questions were proposed to help me understand the growth charts. Listed below are my responses.

Question 1: On average, what is a baby's weight at birth?

Answer 1: For boys, the range is from 5½ lbs to 9½ lbs with an average of 8 lbs. (For girls, the range is from 5½ lbs to 9 lbs with an average of 7½ lbs.)

Question 2: What is the normal range for weight and height as a baby grows to full adult?

Answer 2: I will use the 50th percentile as normal and provide a table each for boys and girls.

Boys:

Age:	0	1	2	5	10	15	20
Weight (lbs)	8	23	28	40	70	122	153
Height (inches)	19.5	29.5	34.25	43	54.5	67	69.75

Girls:

Age:	0	1	2	5	10	15	20
Weight (lbs)	7.5	21.25	26.5	40	70	115	129
Height (inches)	19.75	29	34	42.5	54.5	63.75	64

Question 3: When do major developmental milestones happen from newborn, to infant, to childhood, to adolescent, to early adulthood, to middle adulthood, to elder adulthood?

Answer 3: Our early field experience manual lists the following ages for each group to have major developments to occur. The table below summarizes the milestones:

Stage:	Newborn	Infant	Toddler	Pre-schooler	Child	Adolescent	Early Adult	Middle Adult	Elder Adult
Ages: (years)	0-few weeks	0-1	1-4	4-5	5-10	13-18	18-30	30-55	55+
Milestone achieved	Trust	Trust with capacity for mistrust	Autonomy, but minimize shame/doubt	Learn initiative without much guilt	Capacity For industry	Ego identify	degree of intimacy	Balance of Generativity & stagnation	Ego Integrity

For task #2, In order to understand the physical, social, psychological and moral development. I have assembled a graph to represent the physical growth development along with Erickson’s eight stages overlapped to give a visual presentation. This chart is located in Lesson #4’s ADB, filename: Lesson4_Physical_Psychological_Chart_McCue.ppt

A few points to consider from the chart are listed below:

The physical growth curves are based on data obtained from the 50th percentile for boys, ages 0-20 years old.

Education scale is based from our Early Field Experience Manual.

Erickson’s Eight Stages are based on our second reading assignment.

My intent for the graph is to show that the physical and psychological development occur together in order to better understand the relationship between the two.

A few observations about the physical and psychological growth development discussed in our reference materials follow:

For Stage 5, for which high school students should be resolving the crisis of Identity vs. role-confusion, I found the field manual statement that “high school students are best served in the process of identity formation when they have strong role models to

draw upon” had a profound impact on me as becoming a high school teacher. First, it brought to light that I have an obligation to be a strong role model for students in my classes. Second, I can help students in finding themselves and their role in society besides being just a math teacher. It is interesting to note that Erickson considers peer groups and role models as the most significant relations for young adults in high school. I believe that when students have a strong role model to look up to, it will have a positive effect on their psychological growth and development.

For being a high school teacher, realizing that students should have completed stage 4—crisis of industry vs. inferiority—is critical to the success of high school. Also, students completing stage 5 by graduation in order to begin stage 6 during their college years is extremely important. The role high school teachers have in this psychological growth and development can be described as the “Swing Man.” Helping students complete stage 4 no later than junior high school is vital. High school teachers must help students “swing” from stage 4 to stage 6 by completing stage 5 during grades 9 to 12. This entails identifying and assisting students who must quickly finish stage 4 and the industry vs. inferiority crisis so stage 5 can be completed during high school and not drag into the college years. This would delay stage 6 growth from occurring, with the intimacy vs. isolation crisis, and must be resolved.

The sequence of psychological stages of growth must occur in proper order to best help students develop themselves and lead fulfilling, happy, productive lives. The high school teacher plays a pivotal role in the process by being a strong role model for students to look up to. The influence that a teacher has on their students must not be underestimated. A positive, caring output from the teacher drives a more positive growth development for the students. Perhaps the most difficult part for teachers is learning to recognize when students are behind in their psychological growth and how to encourage them along the process.

The first step for high school teachers then is to learn and understand the eight stages of Erickson’s epigenetic principle with emphasis on stages four and five. Next, applying the knowledge in gaining experience with helping students move along during the high school years will improve the teacher’s ability to assist students in concluding stage five with their identify found and roles resolved.

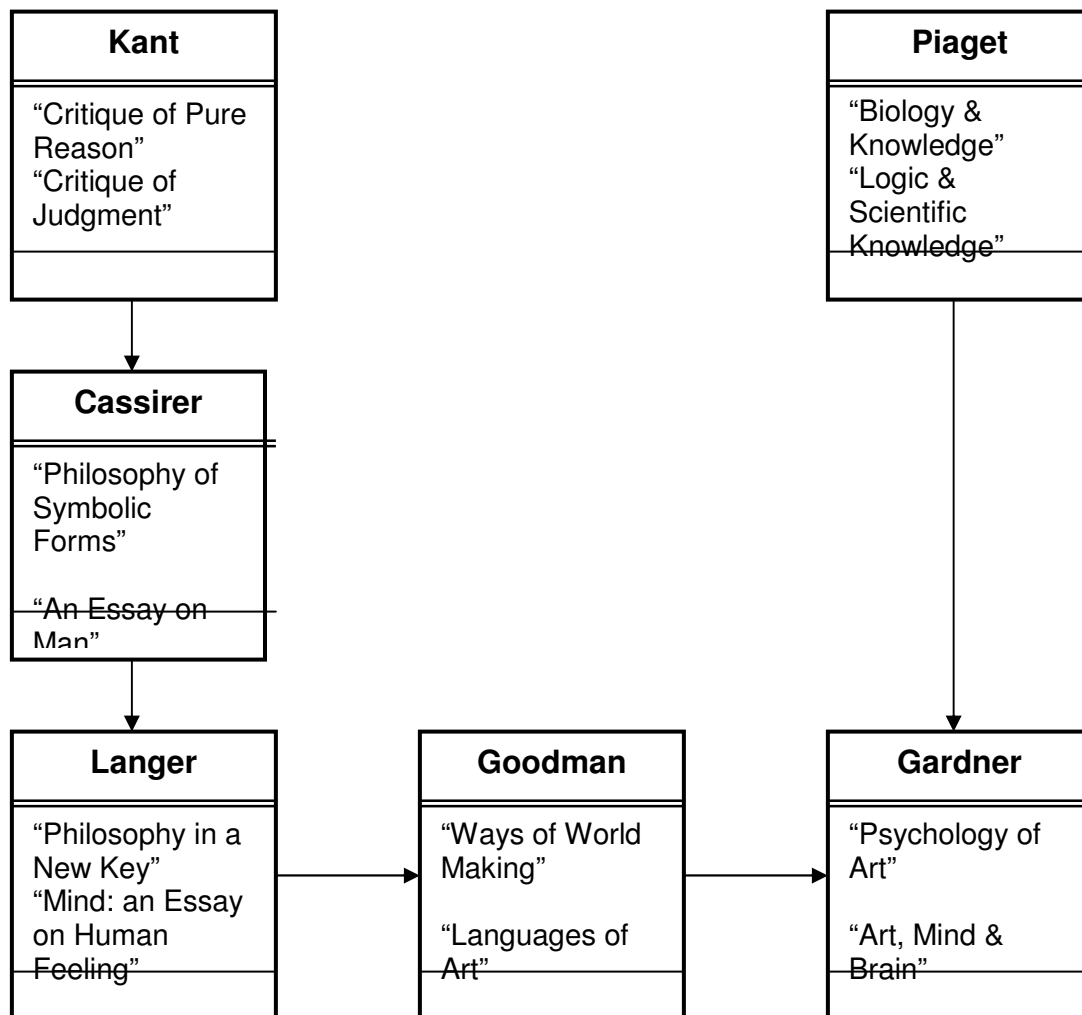
5. Cassirer to Gardner/Flow Chart/Presentation 1

February 28, 2005

For Lesson Five, my task is to outline the major ideas that I view as potentially important from our reading. My approach involved reading the articles twice and highlighting the important concepts. Next, I marked up the white margins with 'red' notes trying to make sense of the readings. Finally, I wrote up a one-page outline of concepts in my notebook for each philosopher. This allowed me to present a high-level outline with key features that I felt were important for each one. I have highlighted four major ideas that I view potentially important and have a direct impact on my teaching. The six philosophers that I will outline are as follows:

Kant Piaget Cassirer	Langer Goodman Gardner
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A simplified relationship chart of influences and trends in the 20th century education is given as a guide.



Immanuel Kant:

- Wrote:
1. "Critique of Pure Reason"
 2. "Critique of Judgment"

He Invented Phenomenology - the world we know and take to be real.

His belief was that time and space are organizing schemes the human mind imposes on the chaos sensory input in order to organize the world into coherent patterns.

He identified the distinction between "the world-as-it-is" and "the world-as-we-experience-it."

His main idea was that he rejected the two extreme theories on human perception and took the middle of the road that chaos of sensory data must be organized into coherent images.

Jean Piaget:

- Wrote:
1. "Biology and Knowledge"
 2. "Logic and Scientific Knowledge"

Piaget founded a new field called: Genetic Epistemology- the study of the origins of human knowledge.

He founded the International Center of Genetic Epistemology with the result being the writing of "Logic and Scientific Knowledge" encyclopedia.

His concept of human blueprint was the four-stage sequence development that every child should realize at his or her own pace.

The four stages are:

- | | | |
|----------|----|------------------------------|
| 0-2 yrs | 1. | Sensorimotor Intelligence |
| 2-6 yrs | 2. | Intuitive/Symbolic Thought |
| 6-12 yrs | 3. | Concrete Operational Thought |
| 12+ yrs | 4. | Formal Operations |

His greatness was in the detailed description of clockwork regularity of the everyday child's mind. His conclusion was that children at different ages construe the world in ways fundamentally different from those of adults.

Ernst Cassirer:

- Wrote:
1. "Philosophy of Symbolic Forms"
 2. "An Essay on Man"

Cassirer's overall philosophical vision was that there is a comprehensive philosophical treatise on symbolic forms.

His vision for the book, "Philosophy of Symbolic Forms" is based on the assertion that philosophical thought could describe and illuminate the most diverse products of human cognition. His belief was that our construction of reality is based on symbolic forms and that reality is created by symbolic forms.

Cassirer felt that symbols were not simply tools or mechanisms of thought. But, symbols were the functioning of thought itself, vital creative forms of activity.

His early thinking believed that scientific thought was the highest form of human cognition; however, later on he recognized the arts as equal ranking and appreciated them.

Suzanne Langer:

Wrote: 1. "Philosophy in a New Key"
 2. "Mind: An Essay of Human Feeling"

Langer developed Cassirer's intuitions and the differences between scientific and artistic thinking. Her basic argument in "New Key" proposed a basic and pervasive human need to symbolize, to invent meaning.

Her claim to originality was that she articulated concepts that clarified issues in uncharted philosophical regions and raised questions.

Langer defined two kinds of symbols:

- Discursive symbolism – Ideas expressed in words or "languages"
- Presentational Symbolism – Ideas gleamed from a picture or whole

She applied the two types and sought to identify the origins of various symbols that pervade the life of our culture. Her focus was on music and artistic symbols.

She helped solidify symbol analysis by categorizing and analyzing it, thus offering others the chance to dissect it.

Nelson Goodman:

Wrote: 1. "Ways of Worldmaking"
 2. "Languages of Art"

Goodman created the Notational System, which is a Symbol System that satisfies various syntactic and semantic criteria. This gave two important purposes to pursue:

- 1) Examine the whole range of symbolic systems.
- 2) Ask if various psychological processes are involved with symbol systems.

He nominated five symptoms of the Aesthetic to use:

- Syntactic Density
- Semantic Density
- Relative Repleteness
- Exemplification
- Multiple and Complex Reference

Goodman founded Project Zero at Harvard. His goal is to bring the philosophy and psychological perspectives on the arts together in a coordinated program of research.

His love of the arts made his philosophy build upon recognition of types of symbols and how they function. He believed it is better to analyze the arts in terms of elements that are accessible and understandable, instead of trying to clarify art by obscure terms such as beautify, emotion and aesthetics.

Howard Gardner:

- Wrote:
1. "Art, Mind and Brain"
 2. "Psychology of Art"

Gardner's interest is in the study of human symbolic activity, and he had studied under his mentor Nelson Goodman.

In his book, "Art, Mind and Brain," he gives an overview of the concepts, beliefs and achievements of the following four philosophers: Piaget, Cassirer, Langer and Goodman.

Major Ideas:

The four major ideas that I view as potentially important and that have a direct impact on my teaching are as follows.

1) Piaget's four stages of mental development

The stages are defined as follows:

1. Sensorimotor Intelligence (0-2 yrs)
 - The child "knows" the world through his perceptions and actions.
2. Intuitive/Symbolic Thought (2-6 yrs)
 - The child uses symbols to refer to the world.

3. Concrete Operational Thought (6-12 yrs)
 - The child uses “internal actions/mental operations.”
4. Formal Operations (12+ yrs)
 - The child performs mental actions upon symbols and physical entities.

Understanding these four stages will help me in understanding the mental growth and development that children must take in order to become young adults. It is crucial that I recognize where children are in their development and to allow them to proceed at their own pace, which will be a challenge in regards to covering assigned materials for a math class.

2) Cassirer’s symbols concept

The use of symbols is very important in understanding mathematics and is a foundation in understanding the concepts taught. I plan to make sure students understand what the math symbols mean. Having a broader understanding of how symbols are used in cultures will help me become more aware of different types of symbols that can be used for teaching.

3) Langer Identification of 2 types of symbols

Langer’s identification of Presentational Symbolism—ideas gleaned from a picture or whole—opened my eyes to the possibility of using diagrams to teach mathematics. Showing students how structure/relationships occur in math will help them get the “big” picture of math and not just a bunch of formulas to memorize. I believe using this concept will help many students unravel the mysteries of mathematics.

4) Concept of Structure

The concept of structure and its meanings:

- Structure organizes parts into wholes
- Structure is our concept of the whole

Help provide why we should think in structures since it is useful in organizing our thinking.

For mathematics, structure is the building framework, which it is based on. This is essential to understand for students. I plan to show this mathematics framework to help students grasp the concepts they are learning. Also, I’ve thought a lot about how having structure in the organization and conducting of the lessons is critical for having educational discipline in the classroom so students can learn with efficiency.

For Lesson Six, my task is broken down into two parts:

- Summarize Piaget's four stages of mental development:
 1. Sensori-motor
 2. Pre-operational
 3. Concrete Operational
 4. Formal Operational

- Summarize Piaget's four terms:
 5. Schemes
 6. Equilibration
 7. Assimilation
 8. Accommodation

Part one:

Piaget considered the four stages of mental development to be a part of the human blueprint that every child should proceed through in sequence, given a normal environment, enough time to work through them and interactions with adults. Piaget believed all of this must occur at the child's own pace and cannot be rushed. Let's review the four stages:

Stage 1: Sensori-motor

Sensori-motor intelligence occurs from birth to two years of age during the early years of development. The child's knowledge of the world is through his own perception and actions exclusively. He is restricted to his own physical actions but lacks any understanding except from these actions.

Stage 2: Pre-operational

Pre-operational or intuitive/symbolic thought occurs from two years of age to six years, during the pre-school years. The child uses symbols such as language and mental images to refer to the world. However, these symbols are only static and cannot be manipulated yet by the child.

Stage 3: Concrete Operational

Concrete operational thought occurs from six to twelve years of age, during the elementary years of education. The child now has the ability to perform internal actions or mental operations on the concepts and symbols that he is learning. This is the beginning stage where children are able to reason with words and construct simple

experiments. Also, they are able to appreciate principles governing the behavior of objects.

Stage 4: Formal Operational

Formal operational thought occurs past twelve years of adolescence age, during the high school years of education. The child now becomes able to perform mental actions upon symbols along with physical entities. Scientific thought and understanding occurs along with solving different types reasoning problems. Abstract logic can now be performed within the mind without a physical world association. This formal stage now takes the three previous building stages and expands the thought process to new boundaries of the human mind.

Part Two:

Understanding Piaget's four terms and their relationship to each other is critical to his theory on Cognitive Psychology. This theory focused on the mechanism of learning or process that enabled new constructions to come about in the mind. Let's review the four terms and their meanings:

Schemes:

Schemes or Structures are cognitive mental systems with transformational laws that apply to the system as a whole, not only its elements.

There are three properties associated with structure that characterize it. They are:

- 1) Wholeness: This refers to the system as a "whole" being larger than the sum of its elements or parts.
- 2) Transformation: This explains the relations between the parts. This describes the process in changing the nature of the parts.
- 3) Self-regulating: Implies structures inherently seek self-maintenance, organization and closure to regulate itself.

Piaget believed the development of structures or schemes characterizes the cognitive growth process due to equilibration, which the structure expands to "reach beyond the grasp," but seeks the organization and closure thus, always keeping the structure "under construction."

Equilibration:

Equilibration is the dynamic process of balancing two opposite behaviors: assimilation and accommodation.

Piaget proposed that equilibration was the mechanism in any transformation of the cognitive mind, and that knowledge proceeds from successive construction. From this, three models of Equilibration were proposed:

- 1) Assimilation of schemes of action and accommodation of these to objects.
- 2) Integration between two logical ideas that are in contradiction to each other, thus requiring resolution.
- 3) Differentiation and integration of whole knowledge structures:

Piaget's concept consisted of the dynamic "dance" of progressive equilibria, adaptation and organization, growth and change, rather than sequential assimilation, conflict and accommodation.

Assimilation:

Assimilation is the organization of experience with one's own logical structure or understanding of the world.

Piaget believed it's the individual's self-assertive tendency to view the world through one's own view in order to preserve his/her autonomy as a part within the whole system. This process results in the "reach beyond the grasp" mind expansion in search for new knowledge or new territory.

These new experiences foster contradictions to our present understanding, thus making them insufficient and causing disequilibrium within the structure, forcing accommodation to occur to resolve the conflict.

Accommodation:

Accommodation is comprised of reflective integrative behavior that serves to change one's own self and explicate the object in order for us to function with cognitive equilibrium in relation to it. This concept was the cornerstone to Piaget's middle of the road theory between Lamarck and Darwin's theories, which stated that behavior drives the evolution of new structures. This perturbation in the genome caused "mutations" to occur in the environment.

There are three ways accommodation can occur to achieve equilibration; they are:

- 1) Ignore: Ignore contradictions and preserve the initial idea or scheme.
- 2) Waver: By holding both theories simultaneously and with contradiction by making each one work for a specific case.
- 3) Construct: To create a new notion that explains and resolves prior contradiction.

These four terms of Piaget's are the foundations to his cognitive psychology theory on the mechanism of learning for the human mind.

7. Vygotsky/Wertsch/Vygotsky Key Terms

March 14, 2005

For Lesson Seven, my task is to write down what I think Vygotsky contributed in terms of the construction of knowledge.

Lev Vygotsky's theories explained the creation of new knowledge. The following key highlight points are discussed:

- Social Characteristics of the Dialectical Construction of Knowledge
- Co-Evolution of Culture and Consciousness
- Theory of Development

Social Characteristics of the Dialectical Construction of Knowledge

Vygotsky believed language made thought possible and the two co-developed in a dialectical process, which produces knowledge. The definition of a dialectical process is the interaction between two separate contributors in which something new emerges that did not exist in either one. I illustrate this process below.

Language ↔ Thought → New Knowledge

Vygotsky's definition of language was a way of sorting one's thought about things, and he defined thought as a mode of organizing perception and action, so the dialectical process was recognized.

His original contribution to this dialectical construction of knowledge was that he recognized the social characteristics associated with it as listed below:

- **Internalization** – Deals with how the consciousness emerges out of human social life. Vygotsky's semiotic mechanisms, was the bridge that connects the external social activity to the internal individual activity.
- **Zone of Proximal Development (ZoPed)** – was the region where learning is ready to take place. This was the delta between what children can do alone and what they are able to do with assistance from a teacher on learning more complex semiotic or symbolic systems.
- **Scaffolding** – This was an idea developed by Bruner that stated for the student to move through the ZoPed, the teacher provided a temporary support structure to assist the student to learn.

This social aspect by Vygotsky was a major advancement from Piaget's "little scientist" model, which ignored the impact of society and culture on the individual.

Co-Evolution of Culture and Consciousness

Vygotsky believed that culture and the individual's own consciousness were developed together in co-evolution through tools. He also thought that without language and culture, humans would not have a reflective consciousness.

Language when spoken by the child aloud—in mimicking what was being taught to him or her—leads to a quiet or internal speaking to oneself. This internalization leads to the pattern of dialogue as a way of thinking—which defines consciousness as our self-awareness of our thoughts. Vygotsky believed that consciousness was a product of social process and historical contexts. This connects culture with consciousness and implies every significant advance of cognitive culture. It also represents and advances the nature of our consciousness, thus the co-evolution of both.

Vygotsky's belief that tools mediate, or bring about, action is a critical component to his Co-evolution theory. Physical tools allow humans to produce modifications and amplifications to our physical world that we could not do without them. The same concept applies to our cultural tools, with symbols being a key tool. Humans use symbols to change and amplify or mediate our own thoughts. Thus, language mediates our consciousness. Taken as a whole system, this mediation also shapes our thought patterns, which are assigned specific relationships to our external world.

Theory of Development

One of Vygotsky's basic beliefs focused on the theory that passing on knowledge was like passing on language. For education, social transaction was the fundamental vehicle used, not a solo performance by the student.

Social transactions for education were called "learning by transaction," which consisted of the three components listed below:

1. **Props & Instruments** – Used by the teacher to propel the student on to a higher ground of learning and a higher level of consciousness.
2. **Processes** – Which made the child receptive to transactional learning.
3. **Procedures** – Used by the teacher to ease the way for the student to learn.

These three components correlate well with our education structure of curriculum, learning and teaching and allow us to apply Vygotsky's theories in the classroom.

Vygotsky's development of the student was based on his belief that the student must be drawn into the realm of symbols and symbolically mediated consciousness by the interaction with other people who are functioning at the higher level. This bridge connected the lower elementary psychological functions of natural processes to higher cultural process that could not be learned by a student without social interaction by the teacher. This bridge of learning was key in his theory of development.

8. Cognitive Tools

March 21, 2005

For Lesson Eight, my task is to follow the main argument in Dr. Carson's article, "A Reflection on How Tools Mediate Action" and propose three or more other "cultural tools" that have altered the consciousness of those who have learned to use them.

Upon analysis of the article, my approach will be to have four discussions as follows:

1. Highlight Dr. Carson's main argument
2. Provide more description on Vygotsky's theory
3. My proposed four cultural tools
4. Conduct a math discussion

Highlight Dr. Carson's main argument

Dr. Carlson has three key points in his main argument; they are summarized below:

- Language is required for reflective consciousness that makes our inner dialog of thoughtfulness possible.
- Educators must acknowledge the role symbols play in the development of any branch of learning.
- Teachers are the cornerstone in passing our culture's symbolic systems on to the next generation for their use.

Let's look at each key point and its argument to better understand the importance.

The first key point starts on the fact language is not required for human intelligence. Our ancestors survived on instinct and cleverness while hunting. The development of language provided better communications between hunters and altered our natural abilities of insight, cunning, cleverness, instinct and the ability to create better social organization. This caused humans to go past just awareness, which all animals have, to obtain an abstract reflective consciousness, which now forms our inner dialog of thoughtfulness within ourselves. In order for us humans to conduct an inner dialog in our minds, speech is required. To conduct speech with each other or within ourselves is based on language. Thus, mastery of language is the key tool for learning to occur. More than just the written and spoken language must be considered, for the language of symbols used in specialized domains such as music, math, science and art must be mastered as well. This argument leads to the conclusion that language is required for reflective consciousness that makes our inner dialog of thoughtfulness possible.

The second key point deals with the fact that symbols and models are involved in abstraction and representation for the semiotic systems that culture developed and uses. This requires teachers to realize the importance in recognizing and clearly understanding how symbols and models are used in their subject of teaching. Also,

they must help students learn and use these tools accurately to master this cultural system being taught. An example would be the piano teacher taking the time to explain how to read music and understand the notation used, such as, what is a quarter note, how does a flat or sharp effect a note. The student must become comfortable with the symbols from reading the music sheet to translate playing an instrument correctly so the beauty of the song emerges.

The third key point deals with the magnitude that teachers have in being the cornerstone in passing our culture in the formal education environment. Teachers must appreciate our cultural systems as they evolve and change, for this causes the evolving expansion of the human consciousness to occur. When this occurs, two priceless gifts are given. One is, teachers are now enabled to more fully appreciate how sacred and special the gift of passing along culture on behalf of society to students is.

Second, this now equips teachers to view the very mechanisms of the human mind, such as understanding, perception, reflection, learning, thought and remembering that occurs in the cognitive world of humans. This now allows educators to organize experiences, which allow profound moments of growth for the students' minds, thus forming a very different world from what it would have been otherwise. My reflection on this point centers on the responsibility teachers have to maintain formal education. For what would happen to our culture, if we stopped the formal education process where our cultural systems are passed along? My belief is that our culture would simply collapse and chaos would occur.

A conclusion from the three points leads me to think that the advent of new cultural tools such as symbolic systems leads to the expansion of the human creative powers. These tools enable possibilities of thought and imagination, which empower humans to create new cultural and intellectual territories. Education must meet these challenges and change the formalized system norm to explore and teach nature of cultural systems as "tool kits" created and used by humans that must be respected for humanity's culture works and ensure students use them for their own purposes.

Description on Vygotsky's theory

In order to grasp a better understanding of Vygotsky's theories so as to finally "get it," a brief summary is given of what was discussed in the article on Vygotsky.

Vygotsky believed humans are unique in the ability to excel in making and using tools. His definition of a tool is, objects created which are used to bring about or mediate action. So what this implies is that without a tool, a function could not be performed and a new result could not occur and no change would happen in the universe. Now he realized there are tools for the hand and mind. This contribution forces us to think about how "tools for the hand"—or physical/hand tools—mediate physical activity while "tools for the mind"—or cognitive/mind tools—empower our intellects to mediate cognitive process. This led Vygotsky to realize that symbols are mind tools and to state that Semiotic systems have a central role in enabling possibilities of thought.

Vygotsky's Co-evolution of culture and consciousness forced the question: Which came first, the symbol or concept? The answer was both, since a symbol stands for a concept. This was an argument for Co-evolution since symbols are a cognitive tool of culture and concepts form in the consciousness, thus both had to co-evolve together.

Vygotsky's views on education were based on his thought of, "There are primary historical developments that cause more sophistication to our advancing evolving consciousness and students should get to experience this relevant transformation of consciousness personally." He argued that education's purpose is to reconstitute in the student the results of historical process of cultural development. Thus, his reasoning for a partial use of history of a specific subject should become known when it is being taught.

My attempt to "get it" focuses on Vygotsky's theory, which forces us to realize the simplicity of the following logic: symbols are mind tools that mediate changes to our consciousness; this in turn caused evolution to our culture based on the co-evolution theory. With this developmental history occurring, we as educators have a responsibility to highlight this progression in the subject we teach to our students so they may grasp its capabilities and use them. This passing down of culture simply must occur for our society's survival.

My proposed five cultural tools

After some thought on proposing other "cultural tools" that have altered the consciousness of those who have learned to use them, I will give four examples.

1. Geography
2. Physics
3. Architecture
4. System Engineering

For geography, one cultural tool is maps and their symbols that represent physical locations around the world. When the geographer learns to read the maps and interprets the symbols such as latitude and longitude lines, his or her consciousness is altered in its ability to understand physical relations of points of interest. For example, how far and in what direction would one go from New Jersey to Montana?

For physics, a cultural tool is the mathematical formulas that describe our physical world properties. These formulas enables the physicists consciousness to better understand how our physical laws operate and allows their consciousness to reach deeper in understanding how it's all put together. A simple formula to use as an example would be for Force: $F=M*A$, where = means "equal to," F=Force, M=Mass, A=Acceleration and * means "to multiply." Understanding the equation allows calculations to be conducted whenever needed.

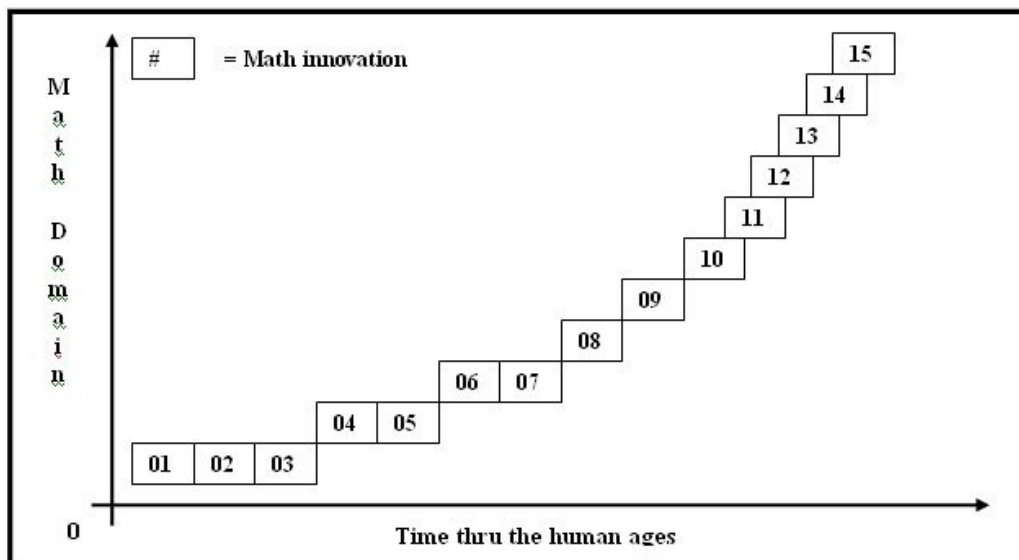
Architecture uses cultural tools based on drawings of building and floor plans, which are used to build exact structures according to specifications. The architect must learn how to produce these drawings and understand them. His consciousness is shaped now by the ability to create new building and oversee their construction. All the buildings we operate in are governed by architecture.

System Engineering uses a cultural tool called acronyms. Acronyms require engineers to understand complex systems, where the acronyms are used to give meaning along with written specifications, flow diagrams, software code, hardware layouts and analysis tools to put together a system that works properly. Using all of the tools and applying them to build a system that performs properly alters the consciousness of an engineer. The Navy’s AEGIS program of cruisers and destroyers that I work on is an excellent example.

Conduct a math discussion

Dr. Carlson’s detailed description on mathematics fueled my desire as a math teacher to give a brief discussion, with focus on the history and development of math, along with aspects of teaching math. This discussion will help me to organize myself in preparing to pass along this cultural system.

The evolution of mathematics was highlighted, with its origin being empirical and the need to count food such as sheep. Mathematics required tools to count such as our fingers, then counting sticks; next, symbols were invented and counting systems evolved to the Arabic numeric system. Image being able to observe over time the major developments of mathematics as they were being created. Dr. Carson’s table on page twelve called “From counting to Mathematics” highlights these events. I have numbered each event one to fifteen and have drawn a graph below to give a perspective on the evolution of mathematics showing the “ramming up curve” of mathematics:



For mathematics, transformations occurred that propelled the evolution, such as, abstraction occurring when humans were able to lift out something specific out of our reality and put it in our minds, while leaving the rest behind. Next, humans were able to associate one thing with another. This came from our natural ability to observe natural connections and apply it to our minds by associating two things that are not associated and make them so. The cry of the wolf heard by hunters at night in a distance was associated with the wolf even though it could not be seen. This ability led towards symbolizing where now a symbol stood for a concept. A simple math equation is an excellent example of how understanding the symbols gives us the cognitive process of concepts and symbols working together, which allows us the ability to add things without counting.

As math evolved, the need to solve for an unknown quality was seen, and algebra was born to provide this capability. Next, geometry was invented by the Greeks to answer the question, "How do I prove it?", with the concept of a proof being developed to allow humans to build a method of reasoning while using logic. Calculus was created to solve the question of, "What is the area underneath a curve and what is its slope?" After reading this article and taking a step back to appreciate the evolution of math, I realized how important showing students how and why math was created is, and how it would benefit them in appreciating and wanting to learn math for their own uses.

Dr. Carson gave some excellent insights on teaching math that I found very useful. A brief summary is given below.

Math phobia is one of the most common problems facing students learning mathematics. This deals with the reaction to the fear of symbols and students not performing the mental operations required. This causes the student to take flight via a mental withdrawal into a protective bubble of refusal. This behavior is fear and avoidance and must be addressed by the math teacher. When the teacher focuses on de-coding the symbols, it will help the student in de-mystifying the concepts being taught. This can be accomplished via the teacher first having an excellent understanding of the cognitive tool/symbols and how they operate. Second, the teacher can give an increased understanding to the students, which will reduce the fear factor and make the student become the master of the new math skill. Perhaps an alternate explanation could be given to the student who is having trouble grasping the new meaning to the symbol.

One key aspect of teaching math that causes much headache is simply math is being taught with too much of "just the rules" which causes the student to perform an exercise in rote memory and guesswork in figuring out which rule should be applied to where. A better approach would be to give an overall historic role of mathematics by teachers with emphasis on having the student realize the purpose is to learn how to think clearly with logic and reasoning, along with showing them how math can be used to their benefit.

9. Ourstory Project/Ourstory Grid/Presentation 2

March 28, 2005

For Lesson Nine, my task is to summarize the theoretical assumptions and beliefs that the “Ourstory” curriculum model is based on to see the purposes that this approach is attempting to serve according to Dr. Carson’s two articles, “The Epic Narrative of Intellectual Culture as a Framework for Curricular Coherence” and “Ourstory—A Culturally-Based Curriculum Framed by History.”

My essay will have four discussions to cover the task assigned as follows:

5. A brief description of the Ourstory model
6. Cover the theoretical assumptions of Ourstory
7. Discuss the core beliefs of Dr. Carson’s curriculum model
8. Review the purposes that Ourstory serve

Let’s begin the investigation into Dr. Carson’s Ourstory model and discover its magic.

A brief description of the Ourstory model

Ourstory is a historically based curriculum model that allows the epic tale of humankind to be told to students so they can connect to the cultural tools invented by our cultures and see the development and relationships of school subjects to the evolution of humankind through time.

The structure of Ourstory begins with a proposed cohort of about twenty-five students with three or four teachers working together to tell the story and teach the cultural tools in a middle school environment of grades sixth through eight for children ages eleven through fourteen years of age. The main narrator is the history teacher, who will give the overview of the epic tale through the eyes of a cultural history and provide leads for each of the disciplines being taught. Then each individual subject teacher will take these leads and explore and explain what they are—to provide a purpose in learning the subject and instilling into the students the desire to want to own and use these cultural tools being taught.

The three-year curriculum structure is centered around the Grid, a 7x6 matrix consisting of seven historical epochs through time across the horizontal axis and six school subjects or disciplines going down the vertical axis. The intersection of each row and column forms a cell. This grid now forms a main index for organizing a collection of web-based resources with links to allow the team of teachers to produce a coherence efficient story line. This allows the approach of addressing the historical epochs in chronological order, where development in each subject can be examined in relation to one another. Interdisciplinary, multicultural and multimedia methods are now available to teach the disciplines. Much coordination is required to produce a seamless conduct of Ourstory.

Cover the theoretical assumptions of Ourstory

There are many theoretical assumptions that Dr. Carson has used in formulating the Ourstory model. Let's focus on a few main ones, which form the foundation for Ourstory.

Schools are designed to teach complicated formalized disciplines that cannot be learned through more natural modes of cultural apprenticeship. For example, not all parents have all the skills and knowledge to teach all the sciences and math subjects through high school. This would be a daunting task and would lead to far fewer students being adept in this body of knowledge; therefore, formal schools with trained teachers fill this void.

Definitions of different types of culture should be identified to understand Ourstory model since they are complementary to each other. First, traditional cultures are localized cultural systems that equip a cohesive social group to cope with their relations to one another and the land. Second, scientific culture is an interdisciplinary matrix of formal cultural systems that arises from the central commitment to teach intellectual values of science. Third, symbol based cultures are powerful tools that amplify and channel the powers of humankind.

Ourstory shows the connectivity of these different cultures. For example, the Greeks used geometry to develop reasoning skills, which they applied to their natural philosophies in their traditional culture. In our schools today, we should try to follow the same principle. For instance, when students learn geometry skills by connecting them to historical development and traditional cultures, this enables them to see how understanding theorems builds their reasoning and logic skills, which can be applied to other areas of their lives.

Our schools follow the a-historical treatment of sciences, which distorts the connectivity of science and traditional culture. This produces a dilemma of representing science as a replacement for instead of a complement to the traditional culture, thus causing a void for students to figure out why am I learning this subject instead of asking how can I use this. Science is not an alternate to traditional culture, just a different one. Both are needed in society.

Finally, the central lesson of history should be the impact of cultural tools on humankind, not the conquest of the globe by manufacturing and trade along with politics that is taught today. This leaves history as being little more than very dry and boring facts to memorize for students. Their heritage is lost when traditional culture is not covered and the connection to cultural tools is never made.

Discuss the core beliefs of Dr. Carson's curriculum model

Dr. Carson's core beliefs about Ourstory are very strong and go against today's smoke stack approach of teaching subjects as isolated, separated interdependencies. Let's review some of them in detail.

The first obligation of education has always been to present the epic tale of humankind. To pass along to the next generation, where we came from, who we are, how our cultures developed, what problems did we encounter and solve. When these questions are addressed, they give a much-needed coherence to students' learning and supply them with a rich human perspective that allows them to make sense of it all. This implies a commitment to tell the humankind story with integrity, passion and intellectual grace.

In putting together Ourstory, the selection process and orchestration of the story line requires that a careful concept mapping be conducted. This allows the connection of cultural development to be shown. Relationships can now be visualized by the students. Pivotal events are connected with the map to allow larger historical and cultural trends to surface to the top for students to comprehend and interpret for themselves. Try to visualize going through school and having a big integrated picture of humankind unfold before you as you learn new cultural tools that now make sense and have purpose. I wonder how many more students would enjoy school and perform better, thus producing more high school graduates functionally at a higher level than exists today. Perhaps, this might improve standardized test scores so important in today's "leave no child behind" world.

Dr. Carson believes that significant collaboration between teachers will produce a seamless storyline for the epic tale to unfold on. The primary focus should be on events having lasting significance for the mental landscape we now inhabit in the modern scientific culture we live in today. That way, the big picture can be told and grasped in the classroom.

Finally, the use of the narrative knowledge structure present in the epic tale of traditional cultures will aid in memory and comprehension, thus showing connections and relationships to students. This follows the classical education curriculum and should be used today in our classrooms.

Review the purposes that Ourstory serves

The purposes that Ourstory serves are many; a few stand out in my mind after reviewing the articles. Let's take a closer look at them.

Ourstory provides many benefits to the students' eyes so they become motivated to learn, which requires hard work on their part. How, you might ask? Through seeing the epic tale of humankind unfold in front of their eyes, which allows their mind to realize that cultural tools belong to them to use and be part of their culture. Also, add the

realization that the historically based coherence curriculum connects subjects to the human epochs much as the liberal education used to bring history back into the center of education and allows students to see and grasp the full epic tale of humankind presented by Ourstory.

With Ourstory shifting the foundation of liberal arts and sciences to the middle school, this allows high schools and colleges an easier attempt in the more specialized studies.

One factor about Ourstory is that it is designed to attract students to learn, not repel from school subjects. Since they now can feel a connection to the disciplines being taught, they come to the realization: the individual student along with everybody else is a part of the epic tale and will contribute to the story by what they do. This allows them to see formal disciplines or subjects as products of human activity for society's use, including them.

The major problem that Ourstory solves with our school structure deals with the a-historical approach to teaching, where students feel the subject matters taught are irrelevant and discounted from the world. I refer to this as the smoke stack effect. This causes the students to not see why subjects need to be learned and brings on a lack of motivation. This climaxes with the question, "Why learn this?" This is very hard for teachers to address. They can only give weak arguments such as, "This will get you a better job and higher salary." To fully respond to questions like this, requires a deep answer built into the curriculum. Ourstory provides this with our human heritage and culture intertwined with cultural tools. Now, the answers can be seen by students leading them to realize how society became what we are today in the twenty-first century.

In conclusion, the major purpose Ourstory fills is the void that was left when liberal education was abandoned in favor of today's a-historical approach to teaching. With its historical framework and narrative story telling of humankind's epic tale, the adventure can be appreciated and grasped by the student, answering why they need to learn "this stuff" and providing motivation to learn and use the cultural tools being taught, so the student can dream of someday contributing his or her input for Ourstory.

10. Wenke Parts 1 & 2

April 4, 2005

For Lesson Ten, my task is to summarize Robert Wenke's chapter on "the origins of Homo Sapiens Sapiens." This chapter describes the development of our human species through time, starting around 2 million years to about 35,000 years ago. This article provides many examples of buried findings that allow the history of humans to be put together.

My summary will be divided into four time periods, plus a summary/conclusion that are covered in the chapter, as described below.

9. From Homo to Homo Erectus	2.0 – .5 million years ago
10. The Middle/Upper Paleolithic Transition	300k – 35k years ago
11. From Homo Sapiens to Homo Sapiens Sapiens	100k – today
12. Late Pleistocene Adaptations	35k – today
13. Summary and Conclusion	

My approach will be to provide a general summary of the main points given for the large amount of material covered. These will be broken down by the time periods covered to provide a quick reference for future use.

Let's begin Wenke's journey back in time when Homo and Homo Erectus lived.

From Homo to Homo Erectus

2.0 – .5 million years ago

A discovery of stone tools dated 2 million years ago in Pakistan gives evidence that early Homo may have existed that early in time. However, by 1.5 million years ago Homo colonized much of southern Africa. Homo spread out to the Middle East and Asia by 1 million years ago. This foothold of the warmer climates was pushed outward towards colder climates by hunting/gathering bands in search of new hunting territories.

A key evolution of man had to be the development of fire, clothing and simple tools in order to survive. Also, social and cultural skills developments were required for small groups to live together. This is a major milestone for humans in expanding, surviving and development of our species. It is assumed Homo erectus was generally the same animal over most of its range and evolved into modern humans formed from the worldwide mix of Hominid with its base in South Africa.

There have been ten European Homo Erectus sites discovered in which to study and learn about our ancestors. The earliest site found was off the south east coast of France called Vallonet Cave, dating back to about 950,000 years ago. One interesting site called Terra Amata is on the Mediterranean coast of France. This is where twenty-one discrete sites dating back to 300,000 years BC were discovered, with evidence of large hut constructions providing protection for up to ten to twenty people. Scientists believe these occupants were probably hunters and gathers, who had a wide range of coverage and moved with the seasons to follow the food source availability.

The Middle/Upper Paleolithic Transition

300k – 35k years ago

For Homo erectus, there is no evidence or artifacts that he participated in ritual or used complex symbolism. There are no wall paintings, figurines or rock carvings available to suggest otherwise. Also, there is no known evidence of burials or rituals for the disposition of corpses by Homo erectus. This has intrigued scientists since there is strong evidence to support this occurred about 30,000 years ago with cave paintings and outpouring of emotions with burials. They have been searching for an explanation.

One proposal deals with the smaller size of the Homo erectus brain as cause and lacking the capacity for emotions. Another suggests Homo erectus had the capability but did not have the best of circumstances to exercise burials and express emotions, due to not having time with other predators hunting them!

This gives concern since the rise of great civilization is based on the human capacity for aesthetic, rituals and social feeling, which Homo sapiens have, and Homo erectus do not. The answer appears to be the seven transitional events between the two that occurred. They are listed below:

1. Significant increase in the size of the brain due to emotional capacities.
2. Changes in human facial and other physical structure.
3. Increased human population.
4. Many improvements in tools such as bows and improved cutting edges on stones.
5. Increased aesthetic expressions on figurines and wall paintings.
6. Shift from general hunting to specialized hunting on gregarious herd mammals like deer.
7. Appearance of regional “ethnic identity” reflecting a restructuring of social relationships.

Evidence shows this transition was well underway between 300,000 and 250,000 years ago.

It is interesting to note the strong correlations determined by scientists between the size of population of humans and the rate of technological change. This relationship indicates as the population increases, the rate of innovation also increases. This trend can only continue since our world population is ever expanding and shows no sign of reversing.

From Homo Sapiens to Homo Sapiens Sapiens

100k – today

From 100,000 to 35,000 years ago both Homo sapiens and Neanderthals lived on the earth; however, the Neanderthals “disappeared.” Amazingly, we do not know how they were related biologically and evolutionally. Thus, we do not know what were the driving forces of our own evolution that makes us what we are today. Let’s review what scientists have discovered about Neanderthals for clues.

Neanderthals lived between 130,000 and 35,000 years ago in Europe, Western Asia and Middle East. The first fossil was found in Neander Valley in southwest Germany in 1856. They are different from us, but scholars are in disagreement on how much different. The biggest issue concerns if we are descendants from them or did they lose out to our ancestors in competition for survival.

It is worthy to note there are six main differences between Neanderthals and ourselves. The following features of Neanderthals are not features in us:

1. receding chin
2. large cheekbones and prominent brow ridges
3. protruding lower face
4. larger front teeth
5. shorter, about five feet in height but powerful stature
6. slightly larger cranial capacity

It is interesting to note that Neanderthals were adept stone toolmakers, with most of their tools classified as Mousterian with four different types found based on four distinct tribes making them. A side note to mention is that humans’ ability to work with their hands and use the thumb to grasp and hold objects allowed them to develop tools. This had a major impact on our evolution, which other animal species did not possess.

Evidence has been detected that Neanderthals did have culture and society, but questions do arise. One is, could they speak like humans? Scientists are split on this answer. Also, did they bury their dead? Most scientists believe they did and had human-like emotional and ritual practices associated. Thus, perhaps the foundation of culture was born. Neanderthals hunted in small groups of about twenty-five and stayed together their entire lives; thus societies were being formed.

There are three theories on how Neanderthals “disappeared” from the earth. They are summarized below:

1. **Neanderthal phase of man:** This puts Neanderthals between the Homo erectus and Homo sapiens, which implies that Europeans’ ancestors are directly related to Neanderthals.

2. **Pre-Neanderthal:** This claims Neanderthals were from a pre-Neanderthal stock and specialized in resisting the cold climate conditions. However, this restricted the gene flow due to the isolation factor and either they phased out or were absorbed.
3. **Pre-Sapiens:** This claims the Swanscombe people were not related to the Neanderthals, but gave rise to modern humans. This theory has been mostly rejected due to fossil evidence, which disproves it.

However, another question has scientists wondering: “How many generations ago do we have as humans in common a common ancestor?” The answer from the “Eve” hypothesis believes found fossils points to a common female from South Africa back 140,000 to 200,000 years ago.

Various studies have concluded there was about a 5,000 year overlap between Neanderthals and Homo sapiens. Which adds to the mystery of what happened to the Neanderthals. It’s likely that either:

- Modern man starting in South Africa spread out and displaced the Neanderthals and anybody else, or...
- A rapid and complex gene flow kept all human types evolving, including the Neanderthals to our present modern man.

Nobody knows for sure.

Late Pleistocene Adaptations

35k – today

Modern humans appeared as hunting and gathering societies around 35,000 years ago. The reindeer was a life staple for survival of the Upper Paleolithic people. The reindeer were hunted for food, their hides used for clothing and covering for shelter; antlers were used as “batons” that produced blades. The bones were used for tools. This type of hunting of large herds of animals required a large group of people to execute. This caused an increase in the population. The development of new weapons such as the bow and arrow, plus the Atlatls (a spear that could be thrown 150 meters), allowed more food to be hunted to feed the larger groups being formed.

Next, the Upper Paleolithic people developed fish traps to catch salmon, which added even more food on a seasonal basis. Further developments such as fishnets, weirs, drying racks and smoking racks came into play. These non-transportable tools now fed an even larger population and planted the seed for groups to begin staying in one place longer than ever before possible. This might have been the beginning of settlements.

As the Upper Paleolithic people began to spread with the growing population, big game hunting in Europe supported thousands of bands of people. Many sites in East Asia, Japan, and Australia have solid evidence of this period.

Also, much artwork has been discovered from this time period, such as the Atlamira cave in Spain, which contains animal drawings. The Lascaux cave in France spanning from 34,000 to 12,000 years ago contains many drawings that were done for hunting rituals to ensure a successful hunt. All of this artwork contributed to development of a culture for the Upper Paleolithic people. This time period ended about 12,000 years ago.

Summary and Conclusion

There is a crucial time interval between one and two million years ago, that the natural selection process produced the modern human. What worked in this response to the demands of the world our ancestors lived in brought about changes—such as increased brain capacity, reshaping of our face and technological innovations as discussed above. These changes helped us develop and evolve into what we are today. There are two notions about our origins, but it is believed that modern man has as our common ancestor, a 140,000-year-old female from South Africa. Neanderthals shared the earth with Homo sapiens but somehow mysteriously disappeared. There is strong evidence that large groups hunted herds of animals just before the appearance of modern man. This is part of our modern condition, not its cause. We share many of the physical characteristics of our ancestors; however, there are major differences in our culture due to evolution.

Humans have evolved well as hunters in small groups, but our western lifestyle is not in touch with nature. Perhaps we should examine ourselves and take Wenke's advice on eating a varied diet, live in small groups, walk in the woods to be with nature and exercise. In conclusion, humans are supreme generalists and are very adaptable. Will we be able to adapt to future evolution pressures?

Closing Remarks

The evolution of humankind is amazing; this sequence of events had to occur the way it did for us to be modern humans of today. A few milestones caught my eye while reading the chapter and are listed below.

- Human ancestors began in warm climates, South Africa in particular.
- The discovery of fire, making of cloths from animal skins and invention of simple tools from stone and bones allowed the migration of man into colder climates.
- The seven transitions from Homo erectus to Homo sapiens.
- The mystery of Neanderthals' disappearance and why.

- Homo sapiens developing emotions associated with funeral burials started rituals and possibly the beginning of culture.
- The importance of hunting in larger bands to follow and hunt large herds of animals might have formed the beginning of society, and drawings in caves to bring good luck in hunting began artwork for humans.

All of these events have taken evolution to a point about 3,000 years ago when the cultural explosion occurred and man begins a rapid transformation to where we as humans stand today. Reflection on this chapter and its contents leads me to my take-away of the simple realization that today, humankind is still in the rapid transformation of our culture and society mainly through technology changing the landscape. We are all part of the history being made and must ask ourselves, "What will I contribute to our culture?"

11. Semiotics & Symbolism

April 11, 2005

For Lesson Eleven, my task upon reviewing Dr. Carson's article, "Semiotics and Symbolism" is to summarize the sequences of cognitive abilities emerging from simpler mental tasks and use my imagination to think through how each new power might have permitted humankind to perform.

My approach to summarize this article will consist of three parts, identified as follows:

- I. Review the simple mental tasks
- II. Give an overview of the complex cognitive sequence emerging from the simple mental tasks.
- III. Provide my imagination on how each new power enhanced humankind's performance.

So, let's begin the task of understanding how symbols and semiotic systems are a part of our mental lives and contribute towards our intellectual landscape.

I. Review the simple mental tasks

For the review of the simple mental tasks, a brief discussion will be given for each one.

- **Mimesis:** This is the ability of the mind to capture and reproduce some quality outside of ourselves. This ability to mimic sounds, actions, facial expressions and postures serves as a foundation for later development. Play is an activity that allows animals and children to mimic actions in order to learn.
- **Represent:** Is a mental task that means to "to present again." This allows ideas to be reviewed again and again. Drawings allow an object to be represented, which then can be viewed at any time. Also, early writing systems consisted of simple drawing for objects and marks, which were used to represent amounts of objects. This allowed accounting to occur and extend the mind's memory with the ability for referral of documents.
- **Pictography:** This task is used to represent ideas, concepts and actions. These types of symbols are called Ideography. To read these meanings, the user had to be schooled in their use. This required a decoder to be created to allow pictography to occur.
- **Cuneiforms:** Were formed from ideograms as they evolved into pure symbols in Mesopotamia (3400 years BC). Wet clay was used that consisted of dots and wedges formed into a pattern to symbolize each unique idea.
- **Phonetic Alphabet:** The mental task of using symbols to represent sounds of spoken languages was a stunning development around 800 years BC. This was created by the Phoenicians and was used by both the Greeks and Romans.

However, there were serious limitations with just using writing to preserve ideas. Most mental experiences were fleeting.

II. Overview of the complex cognitive sequence emerging

This overview of complex cognitive begins with signs and symbols, moves to tropes and concludes with beyond metaphors (art, science and music). Let's begin our sequence with signs and symbols.

Signs & Symbols:

With the advent of symbols, the accumulation of wisdom, thought, speculation and knowledge caused an exponential growth rate to occur for humans. Let's review how this phenomenon occurred.

The mind is a pattern seeking and making mechanism. The relationship between the entire pattern (Gestalt), structural patterns and elemental details is studied under Gestalt psychology, while Phenomenology investigates this pattern-making feature of the human mind. Structural Homologies is the mind seeking relationships between patterns. From this, the basic cognitive activity—matching similar items to one another—makes the mind form classes of objects called classification. This classification process is culturally determined and arbitrary.

Using the mind's imagination and ability to create thoughts from classified patterns allows us to associate or connect one item with another.

This association allows signs to be noticed in nature as the logical connections in the experience to the things they signified. For example, smoke is a sign of fire, since fire is needed for smoke. When humans started to identify natural signs, they extended the act by work of human imagination. Signs can be made up by social agreement that establishes the connection. A simple hand wave is a sign understood by all to mean hello or goodbye based on the greeting between people.

A symbol is an arbitrary image, which humans learn to associate with something else. They are the vehicles for the conception of objects, instruments of thought and tools for the mind. Symbols can represent anything that evokes meaning that the mind can grasp. Once they have been associated with an object, assigned to them specifically, then they can be set aside and used later. Abstract thought occurs when the operation of just symbols occurs within the mind.

Modern languages are symbolic systems, which generate and structure the flow of thought, ideas and meaning. The study of the meaning derived from symbols is the purpose of Semiotics.

One might ask what the differences are between signs and symbols. A signal or "operator" is part of the physical world of being. Symbols or "designators" are part of

the human world of meaning and only have to have an association to be agreed upon to work.

Tropes:

There are four main figures of speech that are tropes: Metaphors, Simile, Metonyms and Synecdoche. Let's review each one for further understanding.

- **Metaphor:** A simple metaphor has one thing stand in for something else. Complex metaphors are more effective and have creative power when entire, elaborate descriptions occur in which one thing is being described, but with the understanding that something else is being talked about. The interest in metaphors stems from understanding the process that makes new meaning occur at the simple level and applying it to the complex level that acts on imagination. This allows the discovery of how far more elaborate acts of creativity are possible that did not exist otherwise and why they are necessary.

Several examples of metaphor are given to grasp the concept.

1. "What is your field of work" stems from farmers working in their fields and now means "what is your occupation."
 2. The college engineering department purpose of calculus as "Threshing machine to separate the wheat from chaff" refers to the separation of engineer majors from want-to-be engineers as wheat was separated from the chaff using the machine.
 3. President Reagan's famous phrase in the speech about the Soviet Union being "an evil empire" used the movie Star Wars' images and associated them directly to the Soviet Union, producing a powerful negative image.
- **Simile:** Similes are tropes where every word retains its original meaning but two separate objects are associated. A simple example is the phrase, "Jim is as ugly as a catfish." This allows the looks of a person to be associated and compared with another object to make a correlation.
 - **Metonyms:** This type of trope occurs when a name of something is transferred to take the place of something else with which it is associated. Use of the phrase "The White House" on the evening news refers to the building where the federal government and President of the United States use to conduct affairs.
 - **Synecdoche:** This is a transference that takes the form of a part of something being "carried over" to stand in place of the whole thing, or vice versa. Use of the phrase "ten hands" for ten men associates men and a pair of hands to perform labor.

Beyond Metaphors:

The underlying mechanism of metaphors used by our minds can be applied in other acts of imagination usage. Humans can understand more about cognitive creativity by looking at more restrictive domains of metaphors to see how they apply. Three areas to investigate are art, science and music.

- **Art:** In language, an allegory is defined as a kind of “extended metaphor” in which an entire story is understood to be about something else. In art, there are also allegories in paintings, which draw upon images to perform the same task. The principal issue deals with an illustration of one image or idea by means of another. A famous allegorical painting was done by Homer titled “The Veteran in a New Field” portrays a simple picture of a man wearing a white shirt using a sickle to cut down a wheat field. While this painting contains beauty, it really is about a Civil War veteran returning home to his fields and the implications of war, using various symbols for the allegory.
- **Science:** Scientists also use language, images and concepts along with mathematical expressions to capture and communicate scientific ideas. A major advance occurred in this communication when the use of language in a precise and literal manner was adopted in the 1900’s. This has led science to create its own version of creative image using models and theories to explain findings. Each one crafts an image in the learner’s mind so as to organize and understand the scientific concept proposed.

Models are like metaphors, designed to aid in imagination of the learner to understand what the presenter has gleaned from experience. Models are simply a useful tool to communicate between people. Understanding scientific principles is very difficult. Just performing discovery learning or hands-on investigation is not enough. However, a mixture of both along with theory finally gets the points across to the learner. In summary, observation, experimentation and theory are all needed to understand and make sense of scientific principles.

- **Music:** The mind can take human emotion and transpose it into schemata of music that when played and heard by people brings about feelings. How does this happen? How are music sounds connected with emotions? A few possible reasons are given:
 1. A melancholy musical passage is a kind of music symbol where through cultural conditioning an association occurs between the music and the mood it evokes.
 2. Tonal structure of music is similar to the forms of human feeling, thus allowing the connection.

3. My personal belief is that both emotions and music vibrate throughout the body; thus the two can be connected—when people feel the music, they feel their emotions.

III. Provide my imagination on how each new power enhanced humankind's performance

A brief discussion about creativity is needed to complete this sequence of cognitive abilities.

To understand human creativity, one must first understand that all neurological input signals received by the brain are treated as equals regardless of its source. This allows all sensory information to become schema—a patterned knowledge structure. When creativity occurs, the mind crosses the borders of our organized construction of schema to create a new idea. The larger, more organized and more structured our schema is, the more creativity will be allowed to occur. This free travel about the mind sparks creativity.

How humankind performance has been enhanced upon each complex cognitive ability created from simpler mental tasks is a challenging question. Using my imagination, the following is provided.

- Expanded use of complex symbols will allow more creativity to occur via more schemas.
- More creativity through metaphors will allow language to expand as a communication tool.
- Art, music and science will continue to develop and grow in diversified ways.

12. Competition

April 18, 2005

For Lesson Twelve, my task upon reviewing Dr. Carson's article, "Beyond Competitive Schooling" is to identify ways in which competition can backfire in the lives of individuals.

My approach to finding how competition backfires will be to analyze the following two areas where many individuals spend their lives.

- I. Formal education in public schools
- II. Corporate America.

I choose these two areas based on my personal experience and the impact schools and corporate environment have on individuals. Let's first look at our public schools.

I. Formal education in public schools

Upon reflection and analysis, I have identified four major areas where competition can backfire in our formal education within public schools. They are as follows:

1. Children lose ability to learn teamwork
2. Competition process produces a pecking order of students
3. Competition is not good for the school environment
4. Competition hinders the schools' overall goal of achieving quality learning

Let's take a closer look at each of the four areas where competition backfires in our schools.

Children lose ability to learn teamwork

Competition in schools forces each individual to do "battle" with other students. One example is schools using a curve for grading purposes. This dictates a few students must fail, a few will win and many will be average. This does not promote cooperation between students but does insist that each student must look out for himself or herself. When one student helps out another, this might jeopardize his own ranking if the other student does better. Cooperation between students is key to a teamwork approach. This cannot happen in a competitive environment. Encouraging cooperation between students would seriously promote learning the concept of teamwork, which is a critical skill for the adult world that is not learned.

Competition process produces a pecking order of students

Students must face and deal with competition throughout their formal school years. This constant pressure conditions students to fall into a grade category such as "A" or "C" student. Students will give a good effort in the beginning, but soon will concede and

accept their pecking order due to the belief that they have only a certain level of intelligence at which to achieve the grade level. So a certain status quo is achieved throughout the school system, with a small flux of students' ranges. The elementary school years are the most formative, with the middle and junior high school years being the most critical, where students are sifted into their grade pecking order through competition, which for the most part follows them through high school.

Competition is not good for the school environment

Competition in our schools is viewed as healthy and natural with each student motivated to perform their best, which allows them to live in a competitive world. However, many pitfalls occur, which when evaluated, causes major concern that competition is not good for the school environment. First, competition requires some students to be designated as losers, so that winners can exist. These students begin to form a history of failure that allows the mind to recall this condition. This reduces motivation by the student to work and learn new material. Second, failure breeds failure due to the adjustment of what students perceive as reality. This causes the mind to be faked out and believe the current ability of the student is maximized and cannot be increased. Now children begin to withdraw from the circumstance, but since they cannot do so physically, the mind withdraws psychologically to escape the situation. This withdrawal causes various type of "acting-out" to occur, with poor attitude being a major by-product. With the human urge to belong to groups, "failure" students tend to bond together and reinforce each other. Finally, this makes it extremely difficult for teachers to reach and connect with these students to help them. They face a difficult life ahead of them.

Competition hinders the schools' overall goal of achieving quality learning

Competition during the formal schooling years focuses on the product being produced, namely grades. The schools do not focus on the student's quality of effort and work in learning. One might ask how can this be? An explanation follows for the reader to consider. A predefined pace for learning a particular subject is put in place for all students to follow, with focus placed on the student's grade achieved. If the student falls behind the pace set and cannot keep up, a poor grade will be received. This puts in place a cycle where failure produces failure that is very hard to break. These students then face a very difficult time ahead of them in school and out. One might ask how does this process achieve the goal of students learning knowledge? Did the student fail because they could not grasp the material taught or simply could not maintain a pace too fast for him or her? Receiving a poor grade in this manner does not reflect the true ability of the student to understand the material.

II. Corporate America

The following comments are my observation and beliefs gained after working in Corporate America for twenty-four years. Competition forces the workforce to fight for a

piece of a pre-determined amount of money for raises each year. At Lockheed Martin, a ranking of all engineers is conducted in order to disperse the pay raise. While on paper, the review appears to reflect your performance that determines your raise, in reality your ranking does. Just like in school when a curve is used for grades, a corporate curve is used to break down the ranking in giving out raises. Of course, this ranking and break down is kept in management hands only. This also causes a serious lack of cooperation between engineers working on projects where teamwork is required. Why should one engineer help another when the amount of your raise could be affected? I've seen many engineers actually make other engineers look bad in front management in order to shine. Finally, the motivation to perform is taken away after a few years when it is realized only a few get the big raise and the rest receive in reality a cost of living raise. This leads to a burn out factor for many engineers.

13. Adlerian Psychology

April 18, 2005

For Lesson Thirteen, my task upon reviewing Dr. Carson's article, "Adlerian Social Psychology" is to answer the questions or define the terms on page 13.

My approach will be to answer the terms asked for on page 13; let's proceed.

1) Individual vs. Society:

Individuals have a very strong need to belong in a group or society. People will strive to find their place in the social order that they belong to. When social hierarchy is created via people dominating and subordinating others, then humans cannot really belong to a healthy social group. Equality is required for this to happen. The individual and the group are interdependent on each other, with the group simply not existing unless multiple individuals decide to join it. And individuals are drawn to a group to find their place within.

2) Responsibility:

Responsibility is a person recognizing he is tied to his actions. These actions taken are how an individual determines his or her destiny. So all people must be responsible for their lifestyle goals since they are based on decisions they make on what happens to them.

3) Democracy:

Democracy in a classroom is where a teacher governs the class' social environment in which every student is treated as important, and is highly valued. Also, the student can find a dignified and supportive social space within the classroom.

4) Competition:

Competition in a classroom along with an authoritarian teacher surrounded by a punitive environment encourages students to act out the four types of misbehavior. They are Attention getting Mechanism (AGM), Power Struggle, Revenge and Discouragement. This pitting of students causes a pecking order to occur with students fighting to obtain a product, grades. This creates an imbalance in the class with the "A" students dominating the "F" students. The failing students act-out in order to bring balance back in their minds.

5) Discipline:

Discipline is simply a person's ability to apply self-control to one's being. This is referred to as self-discipline. Doing what you need to better yourself without having to be told is an excellent example. Discipline is not punishment.

6) Punishment:

Punishment is to inflict pain or unpleasant consequences on a person in order to discourage future occurrences of misbehavior. Punishment is seen to be arbitrary, humiliating and mean by the person receiving it.

7) Inferiority:

Inferiority is the opposite of superiority, which is when a person feels that they are better or superior to other people. This lends inferiority to a person who feels they are not better or is inferior to other people.

8) Lifestyle/Goal:

Lifestyle refers to an individual's psychological orientation toward life. Goal is an attitude or belief regarding the person's relationship to humanity. Humans act according to their lifestyle goal, thus human behavior has purpose in achieving this goal.

9) Nature vs. Nurture:

Adler believed a person's lifestyle did not come from nature or nurture but from a person's decisions made on the basis of what happened to them.

10) Social Interest:

The ability of a person to direct action for the sake of others, not themselves is the surest sign of a person's adjustment to life. Adler believed Social Interest is the main condition for good mental health.

11) Courage:

Courage is an orientation of a person toward the social interests of a group. When people mainly think of others and not themselves, they have less conflict within themselves. Courage is a trait that people have when they face their fears and meet them head on. Webster defines courage as the attitude or response of facing and dealing with anything recognized as dangerous, difficult or painful instead of withdrawing from it.

12) Doing for others:

When a person helps or does for others and puts his own needs aside is an excellent indicator of social interest and a sign of a healthy individual.

13) Cooperation & Equality:

Cooperation and equality are the hallmark of a healthy social medium. Humans depend on each other for a healthy society. These two components allow this to happen. Cooperation between people allows the social group to get along together and produce many results requiring interaction between them. Cooperation is everyone working together towards a common cause. Equality is a component where everyone is treated as equals, with no favoritism between members. This allows harmony to occur within the group.

14. Tenets

April 17, 2005

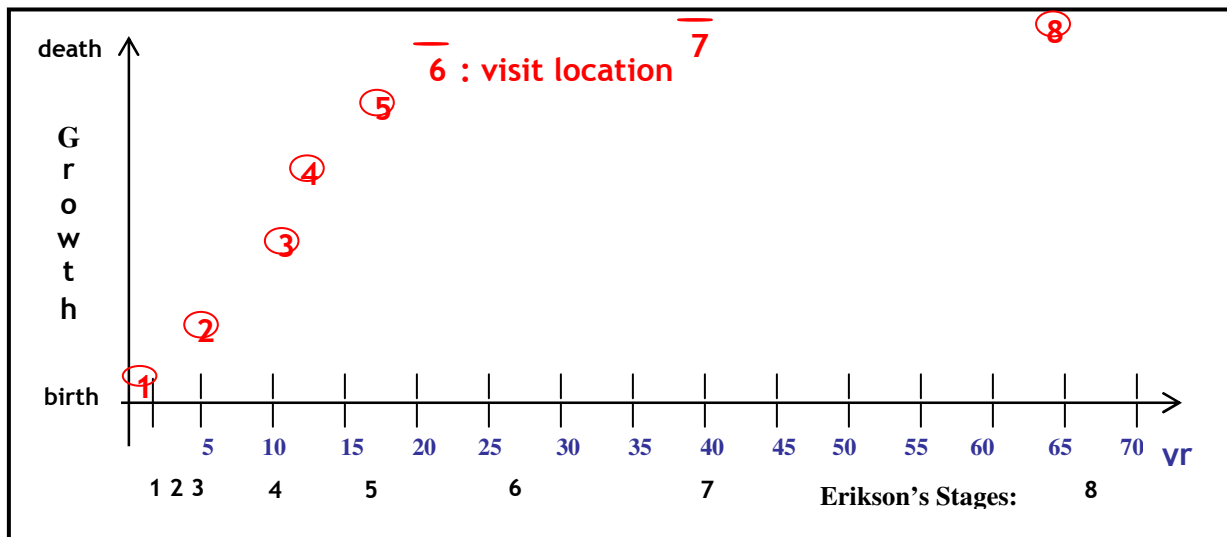
For our Early Field Experience, my task was to visit the eight places listed below for observation and to consider how well I understand the whole dynamic range of processes that take humans on the journey of life from beginning to end. The eight places are indicated as follows:

#	Visit Location
1	Hospital Neonatal Unit
2	Preschool
3	Elementary School
4	Middle School
5	High School
6	College or University
7	Adult Work place
8	Senior Citizen Center

My approach to this Early Field Experience paper will be to present my findings in five sections to satisfy the spirit of the intent of the project. The sections are:

- I. Introduction
- II. Theory
- III. Observations
- IV. Insights and Reflections
- V. Conclusion

Our Early Field Experience asks us to observe life's pattern of growth and development, so a simple diagram might be helpful in our understanding.



Let's review the five sections to uncover my discoveries while traveling along humankind's life journey from cradle to grave.

I. Introduction

The goal of the Early Field Experience is to have NPTT students observe humankind in eight places, which are along the course of life. The purpose of this experience is to open the student's vision and thought to the whole parade of life from cradle to grave. My detailed task while observing is to make sense of the three growth development areas of humans, which are:

1. Physical development and abilities
2. Cognitive development and abilities
3. Social and self development

The eight locations visited are as follows:

1. Hospital Neonatal Unit	Birth of my sons and nephews		
2. Preschool	Moorestown Montessori Preschool	Moorestown	NJ
3. Elementary School	Samuel Smith Elementary School	Burlington	NJ
4. Middle School	Hartford Middle School	Mt. Laurel	NJ
5. High School	Lenape High School	Medford	NJ
6. College or University	Burlington County College	Mt. Laurel	NJ
7. Adult Work place	Lockheed Martin	Moorestown	NJ
8. Senior Citizen Center	St. Peter's Church	Cherry Hill	NJ

Listed below is my Theory Table, which cross-references my visits to the various life stages.

Visit #	Visit Location	Ages yrs	Life	Piagetian	Epigenic	Eric
1	Hospita		Newborn	Sensorimotor (0-2 yrs)	<i>Trust Vs. Mistr</i>	1
		0 - 1	Infant		<i>Autonomy vs</i>	
2	Presch	1 -	Toddler	Preoperational (2-7 yrs)	<i>Initiative vs</i>	3
		4 - 5	Pre-		<i>Industry vs</i>	
3	Element	6 - 10	Child	Concrete Operations (7 - 11 yrs)		4
4	Middl	11 -	Preteen		<i>Identity vs</i>	
5	High	13 -	Adolescent	Formal Operations (11+ yrs)	<i>Intimacy vs.</i>	5
6	Colleg	18 -	Young Adult		<i>Generativity</i>	6
7	Adult	30 -	Middle Adult		<i>Integrity vs.</i>	7
8	Senior Citizen	65+	Late Adult			8

II. Theory

Ten Life Stages:

The ten life stages listed above in the theory table show where the eight visits occurred. Notice all the life stages were visited except the Infant and Toddler stage, which I included in my observations for Neonatal Unit. Please notice the age bracket for each life stage and corresponding visit location are the same.

Jean Piaget's Cognitive Development Stages:

A brief description of Jean Piaget's four Cognitive Development Stages is given to allow the reader to correlate them to the life stages and visit locations while reading this essay. Please notice in the theory table how all four stages cover all ten-life stages.

His concept of a human blueprint was the four-stage sequence development that every child should realize at his or her own pace.

The four stages are:

0-2 yrs	1.	Sensorimotor Intelligence
2-6 yrs	2.	Intuitive/Symbolic Thought
6-12 yrs	3.	Concrete Operational Thought
12+ yrs	4.	Formal Operations

Piaget considered the four stages of mental development to be a part of the human blueprint that every child should proceed through in sequence, given a normal environment, enough time to work through them and interactions with adults. Let's review the four stages:

Stage 1: Sensori-motor

Sensori-motor intelligence occurs from birth to two years of age during the early years of development. The child's knowledge of the world is through his own perception and actions exclusively. He is restricted to his own physical actions but lacks any understanding except from these actions.

Stage 2: Pre-operational

Pre-operational or intuitive/symbolic thought occurs from two years of age to six years, during the pre-school years. The child uses symbols such as language and mental images to refer to the world. However, these symbols are only static and cannot be manipulated yet by the child.

Concrete operational thought occurs from six to twelve years of age, during the elementary years of education. The child now has the ability to perform internal actions or mental operations on the concepts and symbols that he is learning. This is the beginning stage where children are able to reason with words and construct simple experiments. Also, they are able to appreciate principles governing the behavior of objects.

Stage 4: Formal Operational

Formal operational thought occurs past twelve years of adolescence age, during the high school years of education. The child now becomes able to perform mental actions upon symbols along with physical entities. Scientific thought and understanding occurs along with solving different types of reasoning problems. Abstract logic can now be performed within the mind without a physical world association. This formal stage now takes the three previous building stages and expands the thought process to new boundaries of the human mind.

Eric Erikson's Epigenic Stages:

Eric Erikson's Epigenic stages as shown in the theory table follow closely to the life stages. Erikson believed each person must address the crisis listed for each stage in sequential order for resolution within themselves, then proceed to the next stage. The table gives a visual representation to allow the reader to compare them. Listed below is a brief description of each stage.

1. Trust vs. Mistrust (0 to 1 years)

Stage one; a baby will trust if his or her environment is a healthy one or mistrust if it contains fear, mistrust or abuse.

2. Autonomy vs. Shame and Doubt (1 to 3 years)

Stage two; a toddler must gain autonomy during his or her development or face shame and doubt when skills are not learned.

3. Initiative vs. Guilt (3 to 6 years)

Stage three; a child is learning to be an individual with much initiative to perform many tasks on their own. Failure will bring guilt.

4. Industry vs. Inferiority (6 to 12 years)

Stage four; a youngster enters the formal school years and must become industrious with schoolwork or face being inferior to other classmates.

5. Identity vs. Identity Confusion (12 to 18 years)

Stage five; young adults now must face the major question of “Who am I ?” and select one of four paths to bring resolution: Diffusion, Moratorium, Foreclosure or Achievement.

6. Intimacy vs. Isolation (18 to 30 years)

Stage six; adults now face the decision of dealing with intimacy or isolating themselves. This sometimes can take a long time to make.

7. Generativity vs. Stagnation (30 to 55 years)

Stage seven; adults must face being a productive member in society through family and career or face becoming stagnated. This involves commitment by the person

8. Integrity vs. Despair (55+ years)

Stage eight; senior citizens facing whether one’s life has been spent wisely; if so, then integrity will prevail; otherwise, despair will be faced by the individual with limited time to make changes.

III. Observations

My observations at the eight locations are given below.

1) Hospital Neonatal Unit

For my hospital neonatal unit visit, I substituted the birth of my twin boys and seven nephews.

Being the father of adopted twin boys has been a blessing. The adoption of my sons Chris and Andrew began before they were born. I was able to be there on January 14, 1986 and witness the miracle of birth. I remember vividly the whole evening. The ultrasound was showing the second baby was positioned feet first, which was a concern, while the first baby was head first. Then, like magic, Andrew, the second one, turned around, gave Chris the signal and my sons were born within fifteen minutes of each other with no complications. They were both very healthy, over 5½ lbs apiece and so began their journey through life and mine as a proud father. When I held them for the first time, tears came to my eyes. They cried, moved their arms and legs ever so much, breathing and soon eating and sleeping. I still remember the phone call to my parents telling them the news. The bonding I have with my sons started that day and I have treasured it ever since. Three days later, they came home with their adopted parents. Along with my sons, I have watched my seven nephews grow from infants up

to eleven years old. It is amazing how much physical and mental growth occurs the first year. From infants, which can't move at all to walking and beginning to talk. Next, the terrible 2s occur where they can get into everything, climb cribs and steps, have dialog with you and learn everything that surrounds them. When they turn three and four years old, their social skills start to come together, wanting to play with their neighborhood friends. My sons developed a very close relationship with a little girl, Taylor, just two doors down and until this day have maintained the friendship even though we moved over ten years ago from the neighborhood in Burlington. I have been fortunate to be able to watch my nephews also grow even though there is a physical distance between them and me. I believe the relationships between infants/babies/toddlers and adults starts early and strong relationships can be developed and maintained. I've gone hiking, swimming and played on the playgrounds with them. I also played ball back home where I grew up and realized the next McCue generation is growing up very fast.

2) Preschool

For my Preschool visit, I choose the Moorestown Montessori Preschool in Moorestown, NJ. I made my observations on Tuesday, March 22, 2005. This was a unique opportunity to see a Montessori school in action after learning about Marie and her famous "works" development in Lesson #2. I met the owner of the preschool, Connie Campbell, who has owned the school for the past twenty-one years. It has been open since 1958 for forty-six years of operation. The school is located in a Victorian style house, which I run by during my lunchtime runs through Moorestown on the way to the park. They have a backyard with playground equipment. There are two main rooms inside the house; the first one is called the practical life room, where social skills are learned. The second room is the main learning room where learning works are tackled by children ranging from three to six years old. Both rooms were extremely well organized with various "works" organized by subject and stored on shelves going around the rooms. Little tables and chairs were available for use, along with mats for floor projects. Everything that needed to be reached by the children was placed at the right height to allow this to happen. There were three teachers—Brenda, Ann and Ann—working with the children. Each has been Montessori-certified, with Connie receiving hers from Chestnut Hill College in Philadelphia, PA. The offices were upstairs for Connie to run the business portion of the school. Needless to say, every square inch of floor space was utilized!

It was amazing to watch the children and interact with them in this environment. Basically, everything that I read in lesson #2 was observed in the school. A few examples to illustrate might help. First, there were about 20 children in the school with everyone very well behaved and active with a "works" project. The children worked alone or in pairs on various works through out the two rooms. They also used clipboards for projects when needed. Second, the teachers provided instruction when required and checked the work performed to insure the concept was learned properly. Each child had a progress chart, which tracked the works performed and showed the sequence that should be followed.

A few of the works that I observed were very creative in teaching a concept to the child. For math, I observed the skip beads being used by children to learn multiplication and subtraction, along with addition boards to learn adding. The children had a mobile alphabet to learn printing of words. Also for math, there were two girls using the wood counting sticks to see, feel and learn how to count numbers. There were many amazing works on the shelves that captured the children's attention. It's easy to see why Montessori schools have been so successful and endured for so long. The results are amazing.

The children were very involved with their works; much eye and hand coordination occurred. They also had group discussion time, where they would form a circle with the teacher. This was called "circle time," when the teacher would discuss items of importance with the children.

3) Elementary School

For my Elementary School visit, I choose Samuel Smith Elementary School in Burlington, NJ. My sons went to Samuel Smith for grades K4 (kindergarten for 4 year olds) through third grade. I will be using my visits during that period for my observations. I remember much growth and development during these elementary school years. My sons quickly learned how to read and write along with gaining basic math skills. Much homework was done in these early years, but they were eager to learn and I spent many nights working with them to ensure they completed their assignments. I lived across the street from the school and observed many hours of children playing on the playground. Children were doing the usual activities such as running, swinging, climbing and playing ball. I also observed how well the children played together and socialized in school when I visited. One of my highlights every year was watching the Christmas musical with each grade singing various Christmas carols. Besides the children getting better each year with their singing abilities, the audience could easily see the physical growth of each grade as they went in order. It is simply amazing how much growth occurs during the elementary years. I will always remember the "sweetness" that my sons had and their desire to please at that age.

4) Middle School

For my Middle School visit, I choose Hartford Middle School in Mt. Laurel, NJ. My observations were made on Wednesday April 6, 2005. Hartford Middle School consists of grades five and six. My sons also attended this school, so I was comfortable with the school layout. My purpose for this visit was to observe math and gym classes to become aware of this age bracket's physical and math cognitive growth. My goal entering high school is to become a math teacher first, then I'll earn my qualification to become a physical education teacher after I move to Montana. I visited two math classes taught by Diane Kondrla in room B215 and two gym classes held by Mary Viscidy in the gym and outside.

For my math class visits, Mary first showed me her physical classroom environment. Students' projects were hung on the walls and many colorful posters were displayed promoting mathematics. There was a storage bin that held the students' project folders, which contained past math projects completed by the students. The aim of the projects was to expose the students to real world applications of math. Some of the desks were arranged to form several "islands," consisting of four desks facing each other to promote group work. Others were arranged in the traditional way of several rows with five desks apiece.

The first class was a regular paced math, where Diane taught percent and fractions to the students. Homework was inspected for completeness and problems were reviewed. The class was very well behaved and asked questions about the homework. A quiz was given and Mary showed me her lesson planner and discussed what it was like teaching math at this sixth grade level. She enjoyed it very much and was very proud of her students. The period went very fast and I realized how organized the teacher must be to conduct math classes.

For the second class, advanced math was being taught at a quicker pace than the previous class. Again, homework was inspected with only one student not having completed the assignment. This class was also reviewing percent fractions but at a harder level. Several students volunteered to write out problems on the board and explained the steps involved in finding the answer. They all were not shy about talking in front of the class. I observed several of the students' homework and was very impressed with their very neat and organized layout of problems, working problems down the left side then going to the right side to complete the page.

Next, calculators were handed out from a basket to allow the students to perform several problems in class. Diane pulled me aside to show me the textbook and other resources available to her. The class had only one computer, which was not used. With ten minutes remaining, a quiz was handed out and completed. Again, a very fast 45-minute period occurred. I enjoyed observing the classes and seeing the students handling the fractions and performing a technique called "cross multiply" to solve for the percentage question being asked. They were all very well behaved and seemed to take a liking to me by asking me questions about what I do. I must admit it felt good to be in a math classroom. Thoughts raced through my mind envisioning that I would be teaching math in five short months.

My two gym classes that I participated in were very encouraging to me. I'm very concerned with the lack of exercise in children today. High obesity rates are being observed, leading to increased type II diabetes and a projected lower life expectancy than my generation has. This is very alarming and I want to help change this trend. Fortunately, many of the students I observed in these two gym classes looked very fit to me and seemed to be enjoying their physical activities for the day. Let's review what I observed.

For the first class, I stayed in the gym to watch a new program that focuses on teaching rhythm and coordination to students through various exercises. First, the class performed warm-ups with stretching, push-ups and sit-ups to prepare them for what came next. Then, they watched a video explaining the purpose and importance of improving rhythm and coordination in our bodies. Finally, the class was broken down into several smaller groups of about five, which rotated around several stations to practice. The goal of each station was for the student to develop his/her own eight-count step sequence that would be repeated four times using various pieces of equipment. Examples were using a basketball, a hula-hoop, plastic bats and small sitting scooter. The students worked on their routines in preparation for next Friday's class presentations.

For the second class, I went outside with students who were practicing for the President's Fitness Council Challenge. The school had a goal of getting more students passed on the challenge than last year's record setting pace. The students seemed to be trying very hard and were having fun. They rotated through four stations to practice and improve their scores. There was a sit-up station, shuttle run, flexibility test and 50-yard dash station set up for the day.

I helped time kids in the shuttle run and ran once with a slow speed of 10.2 seconds; kids were smoking me at 9.5 to 9.9 seconds. Well, I told myself, I am a distance man, and so off to the 50-yard dash I went, where I ran twice in groups of four. If only the kids could run in a straight line, I might have won, but my official excuse was that I had no running shoes. The kids were encouraging each other with a couple of girls becoming the official scorers, writing down the results. I think I would very much enjoy being a gym teacher, being outside every day helping to get kids in shape.

I had a lot of fun with the kids. Yesterday, while visiting my son at a convenience store where he works near the school, one little girl recognized me and asked if I was the runner who attended her gym class. I felt good that she remembered me (I told the kids I ran a lot) and I encouraged her to do well on the challenge since it was coming up next week. I think this is an example of the positive impact teachers have with students and why I want to become a teacher. The period went very fast and my visit was over too soon.

5) High School

For my High School visit, I choose Lenape High School in Medford, NJ. My visit occurred on April 11, 2005. I decided to follow my trend and make my observations at the high school where my twins graduated from just this past June. Fortunately, I was able to visit three math classes to make my observations. The plan was to visit three different types of classes with each one being at a different level of pace and learning. Level one (L1) was the most difficult, being the Advanced Placement (AP) classes; Level two (L2) was college prep; Level three (L3) was general studies. My intent was to experience the reality of teaching high school math and the different challenges that

occur with each type of class. I visited an L2- Pre-Calculus class, L3- Geometry class and L1- Calculus class.

For the L2 Pre-Calculus during period 1, Debbie Jenson was teaching when I arrived and sat in the back to watch. Debbie and I both worked as engineers for RCA on the Navy AEGIS project during the 1980s, so I was interested in learning how she had made the transition from engineer to teacher. The class was reviewing a worksheet with trigonometry problems pertaining to the imaginary number system. Debbie would put problems on the board and answer questions on how to solve them.

After all the problems questions had been addressed, Debbie handed out the results of a quiz taken by the class. Interestingly, she just walked around to each student and quickly showed him or her the quiz with the grade and moved on. The students did not handle the quiz to get an overview of how each problem was graded. Finally, with about 10 minutes left, they were given time to work on the assigned homework for the day. I noticed all students had graphing calculators to do their homework problems.

I was surprised at the amount of talking by students in class while Debbie was at the board. This did not seem to bother her, but I found it distracting to focus on the problems being worked out on the board. Overall, the class was well behaved and a little excited about an upcoming senior class trip.

The second class, which was an L3: Geometry class, was taught by Tom Tauburello. The class consisted of mostly sophomores and had a different feel to it from the first one. Tom was teaching 3D solids and was using much physical association of the shapes to the name. To be more specific, he used actual plastic models of the shapes to show the class so they could grasp a mental picture of the shape. Next, Tom was using the TV in the upper left hand corner to display computer-generated pictures that were being downloaded from a web site. A PC was connected to the internet and TV to allow this to happen.

The class next had volunteers go to the board to hand draw 6 different shapes going only by their names. The students performed well in drawing the 3D shapes. Finally, Tom passed out scissors and pieces of paper containing outline drawings of shapes. The class cut out the shapes and put them together to better understand the different shapes being taught. Much time and effort was put into understanding the shapes.

With this being a Level 3 class, I could sense the pace was kept slower, no homework was assigned and the class talked much more than the pre-calculus class. I noticed the dress was different also; the first class had students wearing sweatshirts of the different Lenape sport teams, while the geometry class had students wearing black zipper pants. Plus the attitude was different too, with the geometry class being more bored than the pre-calculus class. Also, the L3 students seemed to push the limit with the teacher in trying to get away with something, while the L2 class behaved much better overall.

The third class was an L1: Calculus class conducted by Gary Noecher, who had been teaching there for twenty-two years, and who had also graduated from there. For this class, the main task was to review homework problems from the past two assignments. An answer sheet was passed out for each assignment with each problem worked out and the students reviewed them and compared answers. Gary then fielded questions on specific problems that the students wanted explained and worked out on the board.

This continued for about a half hour, with the class asking very specific questions and Gary reviewing the calculus rules when needed to get the point across on how to do a problem. The class was well behaved, but also talked during the period. Gary seemed to get along well with the students and quieted them down a few times. However, with this being a senior class many discussions were occurring concerning the big senior trip.

One interesting note—the TV was attached to a graphing calculator so the instructor could demonstrate usage of the calculator to solve problems with the whole class able to follow along. Also, a PC was attached with internet service.

After all the problems were addressed, the class was told there would be a quiz tomorrow so be prepared. Somehow, I don't think too many students were paying attention. Before I knew it, the class was over and my observations were coming to a close. I enjoyed my visit to Lenape. Many thoughts were going through my head again about me becoming a high school math teacher. I had just witnessed three periods of the real deal; teenage students going to class learning math, with teachers preparing and conducting classes geared towards different levels of students. I found this most exciting and felt good about making my career change. I believe my soul searching has led to me finding my calling. I begin to wonder how will I conduct my math classes as I leave the school and head back to work in the corporate world. I believe all my answers will come to me soon.

6) College or University

For my College visit, I choose Burlington County Community College in Mt. Laurel, NJ. My observations have occurred over the past ten years when this branch was built in Mt. Laurel and I took several electronics classes. However, since I have been enrolled in the NPTT program, I have made many visits to the expanding campus at my local community college. I like to study in the new Laurel Hall, which contains a beautiful two-story circular lobby area where I've spent many evenings reading 552 articles and observing students active in the college life. I have walked the halls listening in on classes being taught and observed many students interacting with each other.

First, the classes are conducted with the teacher lecturing and students listening with some interaction occurring. The students are very well behaved and show a measurable amount of maturity over the high school students. Teachers use overhead projectors to write out math problems and have a big whiteboard to use for notes. The students' desks are not individual but longer with two chairs to a table. Also, two desks

are touching so four students are grouped together. There are thirty students to a standard classroom. Classes run until 10 p.m. at night for evening classes. Many students socialize in the lobby, while having a cup of coffee and discussing problems they are having in class or outside.

At one point, I observed a young woman about 20 something years old registering for the spring semester while holding her two year old daughter. She was on the cell phone discussing her class schedule options with her mother to make sure someone (probably her mother) could watch the baby while she attended class. This struck me; here was a very young single mother trying to get her education to better herself while being responsible for a toddler. She was being mature insuring the baby could be taken care of. I bet the grandparents were helping as much as possible to help make ends meet. This was a great example of the social growth that can occur during this period for students.

I have also overheard many conversations of students discussing problems and possible solutions. I've seen students working together on homework problems seeking an answer. All students seem to have a vehicle to get back and forth to college, implying that some must have jobs while attending college. There has been a job fair in the lobby area along with four year college transfer greet and meet sessions to allow students the opportunity to plan their futures. This expanded visit has allowed me many hours to observe and conclude there is a strong sense of maturity with the students attending Burlington County College.

7) Adult Work place

For my Adult Work Place, I chose Lockheed Martin in Moorestown, NJ, where I have spent fourteen years working. The environment is a workforce of about 4000 employees in a complex corporate culture executing defense contracts for the Navy's AEGIS destroyer program. I have worked in the system-engineering department, which is responsible for writing the specifications and testing for the computer programs used to launch our missiles at enemy targets. My specific group is known as Weapon Control System (WCS).

Over the past two months, after I learned this early field experience was going to be a part of our 552 class, I began to look closer and pay more attention to the development of people at my workplace. Here are my observations.

First, there is a wide range of ages working, from young college graduates to people almost ready to retire. This represents a range from 22 to 65 or more years. Almost everyone has a college degree except for administrative assistants. There are multiple levels of positions held in engineering and management lines. Some people climb the corporate ladder, while others perform at the same level for most of their careers. There is a strong correlation between the level of maturity and level of responsibility as positions rise in importance and prestige. For example, young engineers right out of college are given level 1 positions and corresponding assignments have some

responsibility. Next, Level 2 engineers have proven themselves worthy of taking on more challenging assignments and responsibility to perform. This trend continues up to a level 5 where an engineer's title is Integrated Product Lead (IPT). This position is like a project engineer that has the responsibility of overseeing the technical and financial aspects of a project with a handful of engineers working with him. The level of maturity must be there to handle the responsibility that goes along with the title earned.

Other observations concerned what each age group is focused on, such as, young engineers usually are not married and have few concerns other than themselves. So they tend to be concerned with activities outside of work, hanging with friends and buying sports cars. When engineers enter their thirties, their concerns start to change to getting married and then raising families. The salary level is a major concern to maintaining the family needs, so it becomes a strong motivation to strive for better performance in order to receive higher raises. This trend continues until the children have left and then the focus shifts towards preparing for retirement. I have heard many discussions from engineers in their 50s and 60s about investment and retirement funds, plus what the lifestyle will be upon leaving the corporate world. In contrast, young engineers want to discuss things to do now with not much concern for the far off future.

The workplace is where the bulk of our lives occur from our early twenties until the mid-sixties, spanning about forty-five years. During these years, multiple levels of growth and maturity occur, corresponding with increasing responsibilities at various positions during our career. Many people fall in love, get married and raise families during this time period. This has an impact on people performing at higher levels in the corporate world in order to achieve more income to support the family. Growth in maturity, responsibility and income are tied together as we age.

8) Senior Citizen Center

For my Senior Citizen Center, I choose St. Peter's Catholic Church in Cherry Hill, NJ, which is the church that I attend on a weekly basis. I decided that meeting seniors after mass would be an excellent way to observe how this age group participates in a community function. I met seniors who were active in the church and had much social interaction with the community.

I enjoyed my discussions with this group very much. I found the seniors to be very cheerful, high spirited and caring. They all have much wisdom to pass along and are very observant to what is happening in today's rapidly changing society. Many were not afraid of technology, embracing computers for using email with family members and using the internet to find answers on health issues that concerned them. The passing away of the Pope recently caused concern about who would be selected and what direction the Catholic Church would go since Pope John Paul II had such a positive impact on the world. They encouraged my intentions of becoming a teacher.

I must also mention my experiences with my grandparents, both sets of them. I was the first child born on both sides of the family, so I was able to spend many years with my

grandparents while I was growing up. I was fortunate that I lived one block away from my mom's parents while my dad's were just five miles away in the country. Spending family time was very important to both sets and playing with my cousins during these gatherings made my grandparents very happy. They seemed to be the central focus which much discussions going on.

I was especially close to my grandma on my mom's side. I used to spend about fifteen minutes with her every day when I had my paper route, along with cutting her grass and taking care of odd jobs that needed to be done. I valued her knowledge and wisdom and the advice she gave me. The years have moved on and now my mom is the grandmother to my twin boys. She is a very strong influence on both of them despite living 350 miles away. Perhaps, love and wisdom are passed down from one generation to another. I strongly believe senior citizens have much to offer the younger generations and when the connection between generations occurs, much wisdom is passed down.

IV. Insights and Reflections

My insights and reflections will focus on the three areas observed in growth and development, which are physical, cognitive and social/self development.

Hospital Neonatal Unit

At birth, humans enter the world as infants totally dependent on our parents. Babies can only move their arms and legs but quickly grow physically into toddlers where they learn to walk. The learning curve is very steep, with their eyes and ears taking in the world around them and developing schema to sort and understand the input. Also, language is developed around one year, so communication between parents and toddlers can occur.

Preschool

At this stage, toddlers have developed into children entering their preschool years, starting at four years old. They have physically grown much and developed motor skills. Their cognitive skills are amazing with learning numbers and the alphabet. Children can read picture books and identify many objects such as animals and are very curious about the world. Preschoolers encounter their first formal social setting upon entering kindergarten. They learn how to get along with each other and share toys. Interaction with the teacher becomes important for their formal learning process to begin.

Elementary School

When children enter elementary school at the age of six and continue through ten years old, they begin learning the basic subjects of reading, writing and arithmetic. Much

knowledge is gained during these years. Their physical growth stays at a steady pace with major development from entering to leaving elementary school. Their motor skills are improving greatly, with many participating in sports such as baseball and soccer. Social and self-development continues on a quick pace during this phase with children developing interests in such activities as music lessons or karate. Socially, the children spend many hours together playing outside, inside the classroom and putting Christmas shows together.

Middle School

Children entering middle school, grades five and six are between ages ten and twelve. They are entering puberty with many changes happening within their bodies. This continues onto junior high school. The physical growth rate continues, but at a slower rate than before. Children at this age now begin to learn different sciences and more difficult mathematics. Homework is given with the expectation that they will complete it on time without parents or teachers guidance in insuring completeness. More responsibility is given to students at this age, with projects being assigned and more group work being conducted. Also, more social outings may occur, such as a school dance, which brings the boys and girls together. School sports are introduced during this period also to promote physical, cognitive and social development.

High School

It is safe to say high school students are not children anymore but are young adults between the ages of thirteen and eighteen. These are very formative years for students. Girls usually have completed their physical growth by sixteen years and boys usually take until eighteen years to complete. So the physical rate of growth slows down during these years. However, the cognitive rate of growth continues with much knowledge learned during intense schooling. These are the foundation years for entering adulthood. Students make many decisions that affect their future, such as preparing for college or taking basic courses just to graduate. Peer groups and friends become socially important to students. Many students begin dating and learn how to develop romantic relationships. Belonging to a group is a central focal point for many students. Towards the end of high school, plans are made to enter either college or the workforce.

College or University

Students enter college at age seventeen or eighteen and will spend four years or so furthering their formal education in preparation for starting careers. While the physical growth has been completed by this time, cognitive development will continue at a fast pace. Many freshmen have decided on a major for college and will see it through graduation, while others will change their major to match the skills and talent they begin to recognize as they mature. This time period represents the transition from young adults to adults ready to enter the workforce as productive members. Their cognitive development will focus towards the requirements of the chosen major. This will allow a certain expertise to be gained which will allow entry into a chosen profession. Much

effort and work is required to earn a college degree, along with a growing maturity to handle the pressure. Social development continues with many students entering into serious relationships and planning on marriage after college. The need to belong to groups is met through various organizations such as fraternities and sororities. Many college athletic programs also provide outlets for social and physical activities. Much maturity occurs during these four years. Students enter college with plans of having fun and by their senior year, serious planning for their future has been completed.

Adult Workplace

All of the years of development in formal education allow students to enter the adult workplace. For many this occurs after a four-year college degree is earned. Then, the majority of the rest of a person's life is spent in this stage, ending upon retirement around the age of sixty-five years old. Many challenges will be faced during these years. Physically, staying active and healthy will be important as the years go by. With today's ever changing economy, maintaining and improving cognitive skills is a necessity. Finally, social and self-development must continue through the years of being an adult. Working in a team environment and having the social skills to interact with people is key to success in the corporate world. Self-discovery and development of oneself is all part of the life journey during these years. People will go through three phases—young middle and senior—during their careers with a different focus during each one.

Senior Citizen Center

Upon entering the senior citizen years around sixty-five years, many people have reached their retirement stage of life. Most have had successful careers along with raising families and are now enjoying being grandparents. Staying healthy becomes a major concern for seniors and much effort is focused on maintaining an active life style. Also, sustaining an active mind is needed to avoid mental lapses. Many seniors are active in various social functions, from strong family ties to community services to non-profit functions to benefit other people. Some people withdraw at this stage of life waiting to pass away. This is a sad situation, since much love and wisdom can be shared between them and the younger generations. I believe a strong positive attitude towards life with a will to live promotes a high quality of life well into the 80s. Much knowledge and wisdom has been earned through living life by seniors and should be passed down to the next generations. A community of all generations and stages of life should be intertwined so this wisdom can be passed down. In essence, this completes the circle of life from cradle to grave.

Reflection

My reflection on the eight stages visited has made me appreciate the tremendous growth and development that occurs in humans throughout their lives. It is an amazing process with much flux between individuals. We as humans have free will that influences our development in the three areas observed. Physically, human growth occurs about at the same pace. Cognitive development varies with a person's attitude

toward the formal schooling process. Some pursue very hard to learn knowledge, while others choose to just get by. Social development of humans is driven by human need to belong together despite various levels of need between people. Self-development is a personal choice having a strong impact into one's quality of life.

IV. Conclusion

This Early Field Experience has examined eight locations along humankind's life journey at various stages from newborn to late adulthood to allow me the experience of life's cycle.

Reviews of the theories involved are the ten Life Stages, Erikson's Epigenic Stages along with Piagetian stages of cognitive development. This allowed me to relate the visits to the theories to observe how accurate they are.

Observations were made at the eight locations to follow the growth and development of humans in physical, cognitive and social areas through the different life stages.

Insights and reflections were given for each stage, which allowed me to appreciate the magnitude of growth and development that occurs in humans.

This Early Field Experience has allowed me the opportunity to observe the full circle of life and to appreciate the stages leading up to high school and the stages after that for which I will be assisting students to prepare. The magnitude of becoming a high school teacher becomes obvious after conducting the observation and reflecting on each stage represented during the visits.