

The Student-Centered Model of learning: A comprehensive model of student
development.

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CHAPTER 1:

In 2002 the US Department of Education put into writing the thoughts of many organizations and individuals across the United States: higher test scores equal better education. The Elementary and Secondary Education Act reauthorization, also known as the No Child Left Behind Act, went even further and outlined ways that student achievement would be tracked and evaluated. (U.S. Department of Education, 2002.) Furthermore, the Act placed the responsibility on individual states and districts to carry out this mandate and create sanctions to place upon schools not meeting expectations. Even before this act was conceived, the idea that test scores were the deciding factor in how well the education system was working was already being developed and put into practice.

The idea that a student's success in school could be measured by his or her score on a standardized test has been around for many years. For example, the state of Ohio has had the same notion in practice since the late 1980's. In 1987 a bill was passed by Ohio's 117th General Assembly that instituted proficiency testing for ninth graders, which would be in effect starting with the graduating class of 1994. To prepare for this test, the Ohio Department of Education developed a set of Learning Outcomes for this test to target. This test later became the Ohio Graduation Test (OGT) and was moved from ninth to tenth grade. Beginning with the current graduating class (2007,) this test must be passed in order for students to graduate. (Legislative Office of Education Oversight, 2005.)

The outcome of such legislation was felt particularly strongly with the graduating class of 2007. A Columbus OH news station reported that around 9,000 seniors failed one

or more of the five parts of the OGT, meaning that those students would be denied graduation. (WBNS-10TV, May 29, 2007.) Similarly, an Akron OH news report stated that preliminary reports showed that 200 of the 1,423 seniors in Akron public schools would not graduate. (WCKY News, May 29, 2007.) It is not the intent of this project to evaluate the success or failure of the legislation, but rather to look at the underlying ideas from which it came, analyse the effectiveness of those ideas in relation to how they are being carried out, and provide further thoughts on the education of students in American public schools.

As stated above, the idea of test scores indicating the level of student achievement came before No Child Left Behind, and even the idea of devising learning outcomes to correspond to the tests being administered is in no way a new one. Much of what we see in educational legislation and administration can be traced back to the late 1950's when Benjamin Bloom and his colleagues published their *Taxonomy of Educational Objectives Handbook I: The Cognitive Domain*. In the introduction to this handbook, which discussed the first of three areas, or domains, that they felt were important parts of student learning, Bloom and company wrote:

“Curriculum builders should find the taxonomy helps them to specify objectives so that it becomes easier to plan learning experiences and prepare evaluation devices.” (1956, p.2)

In Ohio, among other states, this is very close to what we see happening: the objectives are being prepared and corresponding tests are being made to evaluate whether or not these objectives have been met. A further look into Bloom's taxonomy makes it clear that this was one, if not the most significant, contributor to the movement towards widespread

standardized testing. A further review of the Taxonomy and analysis of its impact are included in chapters two and three respectively.

There is at least one problem that can be found as we further study this underlying idea of No Child Left Behind, and that problem is that while the legislation currently governing the education system in the United States thoroughly covers the principles of Bloom's Taxonomy of the Cognitive Domain, it virtually ignores the remaining two domains of educational objectives: The Affective and Psychomotor Domains. The question then becomes whether or not this omission is acceptable in light of educational research and theory, and then, if it is not acceptable, what additions or subtractions should be made? The remainder of this project seeks to answer those questions.

The next chapter is a review of literature spanning from the publication of Ralph Tyler's Principles of Curriculum, published in 1949, which was a major influence on Bloom's Taxonomy (published in the mid 1950's) to current education textbooks used in teacher preparation programs, in an effort to illustrate that the cognitive domain, which is the domain of student achievement measured by proficiency tests called for by No Child Left Behind, is not the only recognized aspect of student development. Also included in the literature are a few current articles dealing with the least studied of these domains, the Psychomotor Domain. Chapter Three analyzes the literature and attempts to point out the shortcomings of current educational legislation. Chapter Four is a summary of the study with conclusions drawn from the literature and recommendations for resolving the problems discussed in this project.

CHAPTER 2: REVIEW OF THE LITERATURE

This chapter looks at educational literature that discusses aspects of the student other than cognitive ability. It begins by taking a deeper look at the Taxonomy of Educational Objectives which, as a partial framework for current legislation as pointed out in chapter one, will provide a quasi-framework for this chapter. After looking at the Taxonomy, literature dealing with what Bloom would term the Affective Domain is discussed. Literature for issues in the Affective Domain is abundant and this section looks at only a few selected books. Research and theory dealing with aspects of the Psychomotor domain is far less vast, and as a result, few examples are reviewed. To end this chapter, I will look at a few of the textbooks used in the teacher preparatory program that I myself have recently completed in order to illustrate what up and coming teachers are being taught about student learning in regard to issues classified within these domains.

The Taxonomy of Educational Objectives

During the American Psychological Association Convention of 1948 held in Boston, a group of college examiners had an informal meeting which became the first of many such meetings that were held each year following. It was during these meetings that Benjamin Bloom and his colleagues first developed the Taxonomy of Educational Objectives. (Bloom, 1956.) In 1949, one of the participants in those meetings, Ralph Tyler, published what is now a staple in teacher preparation programs across the country,

Basic Principles of Curriculum and Instruction, a small handbook that “attempts to explain a rationale for viewing, analyzing, and interpreting the curriculum and instructional program of an educational institution.” (1949 p.1) The book tells us that in creating an educational curriculum we should answer four fundamental questions: “What educational purposes should the school seek to attain? What educational experiences can be provided that are likely to attain these purposes? How can these educational experiences be effectively organized? How can we determine whether these purposes are being attained?” (1949, p.1) Bloom’s Taxonomy builds on Tyler’s principles by offering a classification system, or taxonomy, for defining educational goals.

In the Taxonomy, Bloom classifies educational objectives into three different areas that he calls domains. These domains are the Cognitive, Affective, and Psychomotor domains. Bloom describes these areas as follows:

“The Cognitive Domain... includes objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills...

“It (the Affective Domain) includes objectives which describe changes in interest, attitudes, and values, and the development of appreciations and adequate adjustment. ...

“The Psycho-motor Domain which is also called the Manipulative or Motor Skill area...”

(Bloom, p. 7)

In an effort to encompass all possible educational ideas, these three domains were developed and objectives within each were classified, beginning with the Taxonomy of Educational Objectives: Handbook I: Cognitive Domain published in 1956, followed by Krathwohl’s Taxonomy of Educational Objectives: Handbok II: Affective Domain published in 1964, and ending in 1972 with Harrow’s A Taxonomy of the Psychomotor

Domain: a guide for developing educational objectives. These books further define and discuss the three domains and the educational objectives associated with them.

Cognitive Domain

In the discussion of the Cognitive Domain, Bloom tells us that there are basically two parts to the Domain: “One would be the simple behavior of remembering or recalling knowledge, and the other, the more complex behaviors of the abilities and skills.”

(Bloom, p. 28.) Of particular interest to this project is the following paragraph in which Bloom describes Knowledge as a taxonomy category:

“Probably the most common educational objective in American education is the acquisition of knowledge or information. That is, it is desired that as the result of completing an educational unit, the student will be changed with respect to the amount and kind of knowledge he possesses. Frequently knowledge is the primary, sometimes almost the sole kind of, educational objective in a curriculum. In almost every course it is an important or basic one. By knowledge, we mean that the student can give evidence that he remembers, either by recalling or by recognizing, some idea or phenomenon with which he has had experience in the educational process. For our taxonomy purposes, we are defining knowledge as little more than the remembering of the idea or phenomenon in a form very close to that in which it was originally encountered.” (Bloom, p. 28.)

The second part Bloom discusses is what many know as Critical Thinking, or the ability to apply the knowledge gained through instruction. These two facets of thinking make up the Cognitive Domain.

Affective Domain

Bloom and his colleagues recognized that there was more to a student, and hence more to education itself, than cognitive ability. In addition to the Cognitive Domain, the Taxonomy also included the Affective and Psychomotor domains. At the time of the writing of the handbook on the Cognitive domain, little was researched or developed regarding these two domains, however, Bloom and his colleagues knew that they were important aspects of the student and continued to work on the two domains after the 1956 publication of the first handbook. In 1964 one of Bloom's colleagues, David Krathwohl headed the publication of the second handbook, this one on the Affective Domain. It took eight years to follow up the writing of the handbook on the Cognitive Domain with the second handbook. In a discussion of the reasons for the delay in publication of the second handbook, Krathwohl writes:

“...few of the examiners at the college level were convinced that the development of the Affective domain would make much difference in their work or that they would find great use for it when completed.” (Krathwohl et al, 1964, Pg 13.)

A few pages later, in a section discussing the lack of attention to affective goals in the classroom, Krathwohl writes:

“There is a real shift in intent that comes with time. It may be true that it is easier to teach and evaluate cognitive objectives.” (Krathwohl, pg 16.)

In these two excerpts we can see that even though the affective domain is considered an important aspect of the student, and a part of the student that can be taught and developed, even as soon as eight years after the publication of the first handbook, some educators saw little relevance in affective issues, and one offered explanation was that it was simply easier to teach and evaluate Cognitive objectives. In fact, another of the reasons that publication of the second handbook took so long was that development of the

affective domain was more difficult as the objectives were not as readily apparent.

(Krathwohl, Pg 12.)

Despite the length of time in development and difficulty in teaching and evaluating affective objectives, the affective domain is still considered relevant, and much research and theory deals with affective issues. Later in this chapter some of those issues and research will be presented.

Psychomotor Domain

The third and final domain Bloom presented was the Psychomotor Domain, which deals with physical skills and abilities. In 1972, eight years after the handbook on the affective domain and sixteen years after the publication of the first handbook in the taxonomy, a book was published discussing this particular domain. In her discussion of the Psychomotor Domain, Anita Harrow writes of its role in every-day life:

“Movement is to key to life and exists in all areas of life. When man performs purposeful movement he is coordinating the cognitive, the psychomotor, and the affective domains. Internally, movement is modified by past learnings, environmental surroundings, and the situation at hand.” (1972, p.6)

The importance of this domain is evident from this passage.

I will now move on to defining the affective domain and looking at literature that speaks of issues which would fall under the affective domain. This literature discusses the relevance of affective issues and their place in the education system.

The Relevance of the Affective Domain

The Affective Domain encompasses the emotional and moral/ethical aspect of the student. These are real, tangible parts of a student with which every teacher must interact through the course of the educational process, and because of this, there are virtually limitless works on the roles of emotions and/or morals and ethics in education. As we see in the literature reviewed here, the Affective Domain looks at aspects of the student that are slightly more abstract than test scores. Educational thought revolving around social and emotional education, the teaching of religion, prayer in schools, addressing behavioral and psychological situations, the place of love in schools, and even teacher/student interaction are provinces of the affective domain. Each of these issues is an integral part of the education process, yet is not measured by standardized tests.

Moral Education

In the foreward to The Educational Conversation: Closing the Gap (Garrison and Rudd, 1995) a compilation of essays aimed at capturing “‘wisdom beyond knowledge’ or the ‘non-rational’ elements of the teaching and learning situation,” Nel Noddings writes:

“Educational conversation, at the state and national policy levels, overflows with talk of mathematics and science, test scores, outcomes, performance assessments, and opportunities to learn. Meanwhile, teenagers kill one another, children bear children with little or no resources to raise them, and kids ingest anything predicted to give them a buzz. In such a climate, it is good to widen the educational conversation to include topics

such as luck, relational authority, irony, style, emptiness, privacy, and hospitality in the classroom.” (1995, p.vii)

Also in this foreword, Noddings explains that the compilation continually refers to “teachers whose greatness did not depend on the scores their students made on achievement tests: Socrates, Jesus, Ghandi. They remind us that the eternal questions center on moral life, and that moral life is in the heart of Education.” (1995, vii)

In her own book, Educating for intelligent belief or unbelief, (1993) Noddings makes a case that teachers can address the moral and ethical issues, such as the meaning of life, without promoting one religious view or another. Noddings argues that we educate for intelligent belief or unbelief by presenting moral/ethical content with neutrality in all subject areas and simply address it in class whenever it arises. It does not need to be a separate subject or necessarily have to have special time set aside out of an already full agenda.

In another text, Awakening the inner eye: Intuition in Education, (1984,)

Noddings and Shore write:

“The field of moral education is virtually sterile today, completely dominated by approaches that rely almost entirely on reason and logic. This represents a loss not only for moral education but for all education, because the love required to meet others morally also induces a joy and excitement in intellectual activity that sustains both teacher and student. Further, that love, and the intellectual activity it nurtures, protects its recipients from the onslaught of all sorts of unhealthy and unscrupulous attempts to capture their hearts and minds.” (p 203.)

These texts, along with many others, state some of the issues that arise in education that are specific provinces of what Bloom would refer to as the affective

domain, furthermore, the above examples deal only with the moral/ethical side of that domain. The other side of the domain, the emotional, also has an abundance of literature, some of which is looked at in the next section.

Relational or Emotional Education

Topics in relational or emotional education are widespread, ranging from motivation and enjoyment of subject matter, to fear of bullying or animosity between student and teacher or student and student or even teacher and teacher. Some topics in relational and emotional education deal with how to handle death or dying in either real or studied situations. Sometimes emotional and relational education looks at student-teacher interaction in regards to every-day classroom tasks as well as special situations that arise placing the teacher in unexpected roles in the student's life such as friend, confidant, protector, or role model. In his book Learning Relations, Alexander Sidorkin writes:

“Human relations are obviously very important for any student of education, and yet relations have always served as a background, as a context of the theoretical picture of education.” (2002, p.85)

Sidorkin also points out that “the pedagogy of relation is based on the assumption that most children and adolescents possess an innate social instinct, a drive to relate; and a desire to belong.” (2002, p.80)

The thought is, of course, that relational needs are real and are part of education in the first place. If these needs are real, then they are important. Addressing this question, we look again to Nel Noddings who writes:

“To care and be cared for are fundamental human needs. We all need to be cared for by other human beings. In infancy, illness, or old age the need is urgent and pervasive... But at every stage we need to be cared for in the sense that we need to be understood, received, respected, recognized.” (1992, p.xi)

A few pages later Noddings also suggests that “the current emphasis on achievement may actually contribute to students’ feeling that adults do not care for them,” and asks the question of whether we are “just chess pieces to be pushed around in a world game of competition.” (1992, p.xii)

We can see that relational and emotional education does play a big role in the education process as a whole, and so should be seen as important, tangible, and relevant. In the next section, I will take a brief look at the Psychomotor domain.

Relevance of the Psychomotor Domain

The Psychomotor domain is essentially the domain of the body. Anything to do with movement, physical activity, physical pain and discomfort, and motion are all in this domain. As noted earlier in this paper, it took sixteen years for a handbook discussing the Psychomotor domain and its role and importance to be developed, yet the initial writers mentioning that domain insisted that it was important. A few decades later, we are now seeing a resurgence in the idea that this is a valid topic in education.

In an article in the March, 2006 issue of *American School Board Journal*, Kathleen Vail gives an idea for the reason for this resurgence:

“Some of the change has been spurred by mounting research suggesting physical activity and fitness may actually help students do better in the classroom. Concern over child

obesity also is fueling interest in the mind –body connection.” (*American School Board Journal*, Mar. 2006. p.31)

Vail also mentions that some schools are wrongly removing physical activities from the schoolday. “By taking away recess and other opportunities for physical activity in response to requirements of the No Child Left Behind Act, schools could be depriving their students of an element of what they need to do well in the classroom.” (*American School Board Journal*, March 2006, pg 31.)

Vail goes on to cite several studies that link physical health and activity to academic achievement. Vail writes in response to these and other such studies:

“No one yet knows what it is about being physically fit that makes students do better on tests and get better grades. ... It could be that physically fit students are healthier, and we know that healthier students do better in school. ... Students who get regular physical education and exercise are better able to concentrate in the classroom. Exercise can help reduce asthma symptoms, a major cause for student absenteeism, especially in low-income areas. Regular exercise can help alleviate stress, anxiety, and depression-problems that can affect schoolperformance- and can even boost self-esteem.” (*American School Board Journal*, March 2006, pg. 31.)

To further substantiate Vail’s conclusions, an earlier report in *Educational Leadership* by former US Surgeon General David Satcher cited several studies and articles outlining the state of the education system in regards to the health and physical status of students and school programs. Satcher notes that “during the past two decades, many school systems have abolished recess and cut back on physical education and extracurricular sports.” In that same paragraph and throughout the introduction to his article, Satcher gives statistic after statistic all bringing the poor health of our nation’s

school-aged children to light in relationship to academics. (*Educational Leadership*, Sept. 2005, p.26)

Satcher references a 2001 report from the U.S. Department of Health and Human Services linking such health problems that result, in part, from lack of physical activity in school-aged children, to hypertension, high cholesterol, diabetes, asthma, depression, and anxiety. He also points out that “severely overweight children miss four times as much school as normal-weight children and often suffer from depression, anxiety disorders, and isolation from their peers.” Satcher points out also that schools can be an instrument of change in this same area.

“The school setting is a great equalizer, providing all students and families- regardless of ethnicity, socioeconomic status, or level of education- with the same access to good nutrition and physical activity.” (*Educational Leadership*, Sept. 2005, p.27)

Satcher goes on to summarize what we have tried to look at in this section. “That nutrition affects academic achievement comes as no revelation. After all, as children were told to eat our breakfast before leaving for school. What may come as a surprise, however, is that physical activity also plays an important role in students’ performance- even when it uses time that is normally set aside for academics.”

In the next section, I will look at a few of the text books that I have personally been taught from during the teacher preparatory program I completed as an undergraduate and that I am finishing at the graduate level. By looking at these texts, we can see what educators see as important to future teachers, and from that, to the success of the education system.

According to the Textbooks

This section looks at a few textbooks that are typical of the type found in teacher preparatory programs in colleges across the United States. This section is included in order to show what pre-service teachers are being taught about education, specifically, whether there is any merit to social, emotional, moral, or physical issues and topics in schools and classrooms.

In “Perspectives on Learning,” (Phillips and Soltis, 2004) a text that is meant to introduce pre-service teachers to a variety of prominent learning theories, many such theories are explained briefly. In this textbook, four of the seven chapters that deal with learning theories and approaches (there are nine chapters in all, the beginning chapter is simply an introduction, which will be looked at briefly in a moment, and the final chapter deals with different questions that may arise about each topic in the book,) four of the seven chapters deal with cognitive development while the other three present theories and approaches that describe social and behavioral theories. One of the four cognitive chapters also ties in social and behavioral approaches.

While it may seem to challenge the thesis of this project to note that the majority of the chapters in this one textbook address cognitive approaches, a closer look at the text proves that this text has both subtle and overt emphasis on the importance of social education. Two major examples come to light which show a favoritism towards social education over the cognitive emphasis that we see in legislature like the No Child Left Behind Act.

In the introduction of this text that has been published as a textbook for the education of pre-service teachers a rather pointed comment is made under the heading “Teacher Responsibility”:

“Promotion of learning is not unidimensional- the importance of motivating students to learn cannot be emphasized enough; also important is catering for students who have different learning abilities and who cover the work at different rates, deciding what content to teach, maintaining discipline, and socializing students to become functioning members of society- all these are grist to the teacher’s mill.” (2004, p.4)

From this statement, it is plainly stated that there is more to teaching than giving facts and figures: there are aspects of social importance that are paramount to the success of the student that are not in the cognitive realm.

Another, perhaps more telling detail in this text, is that over and over, in regards to the theories and approaches dealing strictly with cognitive development, the authors use the analogy of a “mobile computerized robot” which implies that students are merely processing machines that happen to have the capability to walk. This is a more subtle way to discount the ideas of cognitive theories and approaches in the minds of pre-service teachers. This is significant because this message flies directly in the face of the government’s view of education that goes along the lines of the “mobile computerized robot” view of the student. As pointed out earlier in this section, the view that students must be able to take in great amounts of information and then spit that same information out on a battery of tests in order to prove their merit, is at the heart of the legislation governing the education system in the US.

This emphasis on the social and moral/ethical issues in education over the teaching of facts is even more obvious in Gutek’s “Philosophical and Ideological Voices

in Education,” (2003,) a text outlining different approaches to Education by looking at various philosophies of education- and keep in mind that one of the main questions potential educators get asked during job interviews deals with their own philosophy of education.

The author of this textbook sets the book’s tone by giving this definition of education:

- “1. The act or process of educating or being educated.
2. The act or process of providing a person with the knowledge, skill, competence, or usually desirable qualities of behavior or character by a formal course of study, instruction, or training.
3. A conditioning, strengthening, or disciplining of the mind or faculties.” (2003, p.3)

In the second definition, we see that a goal of education is to provide a person with desirable qualities of behavior or character. These things were one of the issues Bloom discussed in his Taxonomy under the Affective Domain, one of the two domains to which current legislation in education has turned a blind eye.

In further discussion of the various philosophies of education outlined in this text, the author describes each philosophy in terms of four areas: Metaphysics, or the study of reality and essence; Epistemology, or the acquisition of knowledge; Axiology, the values and ethics in each philosophy; and Logic, or how reasoning is organized. As we can see from these four categories, the way each philosophy describes the way knowledge and reasoning is acquired and developed, which falls under the Cognitive Domain, but it also talks about how reality and the essence of knowledge, life and existence are viewed as well as the treatment of morality and ethics within each philosophy, which are provinces of the Affective Domain.

It may or may not come as a surprise that not one of the philosophies or ideologies presented in this textbook view the student as merely a cognitive vessel. Every ideology acknowledges in some way that there is more to a student than his or her capacity to answer questions on a test. Many of the philosophies in this book even state that a student is anything but a fact machine. Many of the philosophies in this book insist that students are complex beings that need love, stability, discipline, attention, and interaction to succeed, not just in school, but in life as a whole.

The final book that we will look at is Wiles' "Curriculum Essentials: A resource for educators, Second Edition." (2005) As the title states, this is a textbook on curriculum, the program of knowledge that teachers are responsible for getting students to understand and apply. Curriculum is more or less understood to be the body of information that students will be taught in a classroom, and with that in mind it is easy to assume that this book will address how teachers can better organize and implement curriculum in the classroom. As Curriculum is often perceived as the testable knowledge presented to student, it is also easy to assume that this book will be a good back-up to the governmental stance that education is about test scores and production, right?

Interestingly enough, the preface of this second edition states that some major changes took place after the first edition, one of which was that "areas of emphasis that were added include standards and testing..." which seems quite odd for the simple fact that the first edition either did not include a section on standards and testing, or did not place an emphasis on these parts of curriculum, even though the education system in the US puts a great emphasis on both of these items. So, then, if the initial volume did not emphasize these items, what does the new volume discuss as "curriculum essentials"?

The chapter divisions in the text show that the first two (of the five) chapters discuss the foundations of curriculum such as the history, important dates, definitions, names to know, philosophies, school models, and important historical documents that made education what it is today. The fourth and fifth chapters discuss ways to improve curriculum development and applications of the curriculum essentials, respectively. Something to point out about chapter four, dealing with ways to improve curriculum development, is that several headings within the chapter deal with social issues such as “Leadership in School Settings,” “Change in Education,” and “Establishing Positive Climates.” (2005, p.vi)

In the third chapter of the textbook, the one that deals most directly with curriculum development (appropriately titled “The Development Process”,) the author discusses the role of educational philosophy in the creation of curriculum, citing ten factors that influence the educational philosophy of any given school district: Community Involvement, School Buildings and grounds, Classrooms, Organization of Knowledge, Learning Materials, Teaching Strategies, Staffing Patterns, Administrative Conditions, Climate, and Roles of Participants. (2005, p.87-88) The philosophy of a school determines how it goes about planning curriculum and what values and ideals it attempts to convey to its faculty, staff, and students. As we see in this list of contributing factors, only one of the ten influences even remotely includes standards and testing: Organization of Knowledge. The section on philosophy ends with the following paragraph:

“In conclusion, it can be said that an overall measure of the philosophy of any school is the degree of structure or flexibility present or observed. A curriculum that is highly defined and predetermined (perennialist, idealist, realist,) will use structure to control deviancy and diversity. Efficiency will be a preoccupation with such curriculum because

“speed over material” is the only true planning variable. By contrast, curriculums that are open ended, applied, or student centered (the experimentalist and existentialist) will encourage flexibility because they are seeking applied learning in an ever-changing real world.” (2005, p.88-89)

This conclusion points out that the difference between a predetermined and highly defined curriculum and an open-ended curriculum is that the predetermined curriculum is concerned with efficiency and the open-ended one is concerned with teaching students to apply knowledge in the real world. Looking at the two types of curriculum, we can easily see that the current education system as called for by the No Child Left Behind Act, is one of highly defined and predetermined objectives and goals, creating a rigid approach to student education that is focused on efficiency rather than preparing students for real life. This statement more than implies that such rigid curriculums have efficiency at the heart rather than educating students for their futures.

The textbooks reviewed are just a sampling of educational textbooks, and all of these are from education courses in the program that I have been taught from. These are typical of the educational texts in teacher preparation courses across the US. What this means is that up-and-coming teachers are being taught that the system put in place by legislation like the No Child Left Behind Act is at odds with educational theory and practice and furthermore that the legislation leaves key elements of education out and that by over-emphasizing one aspect of the educational process discourages teachers from attending to these other aspects. Furthermore, the penalties, restrictions, and sanctions placed on schools and teachers by this legislation creates a fear on the part of the teacher to do what it is that he or she is being taught to do: prepare students for success in life, not just success on a test.

CHAPTER 3: ANALYSIS OF THE LITERATURE

In the last chapter we looked at literature concerning the Affective and Psychomotor Domains discussed in Bloom's taxonomy as well as some of the current textbooks used in teacher preparatory programs in an effort to show that not only are the Psychomotor and Affective Domains relevant to education today, but also that current teacher preparatory programs are at odds with educational legislation that seems to have left these two domains out of the educational process. In this chapter we will further analyze the literature reviewed in the previous chapter and discuss some of the implications resulting from this literature. Finally, we will conclude this section of the project and explain the two remaining sections.

The Psychomotor and Affective Domains

The literature reviewed in the last chapter that concerned the Psychomotor and Affective Domains showed us that both of these domains are relevant to the educational process today. In the literature regarding the Psychomotor domain, we saw that much of human nature is included in this aspect of education. Movement of all sorts is governed by this domain as well as physical needs and bodily activities. Education in this domain does more than give students a chance to blow off steam and release energy, it improves coordination, raises metabolism, and fosters teamwork and competitiveness.

Some of the major benefits of educational activities in the Psycho-motor Domain revolve around the health of students. As the literature cited in the previous chapter

points out, the benefits of a healthy body go far beyond the physical realm. Students who are healthy physically tend to do better in school than unhealthy students. This is because of several factors. First, physical activity releases certain hormones that help students pay attention and focus. Secondly, students who regularly participate in physical activities tend to have lower levels of stress and lower instances of hypertension and other health problems that could hinder classroom performance. On other important benefit of good health habits is that healthy students miss far less school than unhealthy students meaning that those students are present for more instruction and because of this perform better on tests and homework assignments than students who miss school frequently.

The literature reviewed on the Affective Domain is more expansive and even more convincing of its importance. The Affective Domain encompasses moral and ethical issues in education, relationships between students and teachers and among students in a classroom and school system as well as relationships with parents and administrators, and emotional and psychological situations that students find themselves in. All of these things and more are discussed in the literature and proven to be important to the success of the student.

It is stated several times in the literature regarding the Affective Domain that classroom atmosphere and the attitudes of teacher and student are powerful influences on the success of the education system. If a student is not comfortable in the classroom, be it because of negative attitudes of peers, a teacher who is not understanding, or a general feeling of dislike from others in the classroom, that student is less likely to do well in the class. It is also stated that students who are going through personal problems whether they be at school, home, or elsewhere are less likely to perform well in school. These

facts lend much credence to the idea that affective issues are important parts of the educational process and should be given a fair amount of attention.

As seen with both of these domains, the effects of issues within each of these areas upon students play a large role in the success of the student in the classroom. While growth and advancement in each of these areas may be, as the literature states, difficult to measure, the impact that issues in these areas have on the educational process as a whole and the success of the student in cognitive development is undeniable and, therefore, worth including in the educational process.

Furthermore, as discussed in the review of the educational textbooks, these domains are being promoted at least as often as the cognitive domain, and often in a more positive way. We know from the literature that these domains are vital to the success of the student, and we also see that experts in the field of education state that it is important to educate future teachers on the importance of issues in these domains, yet the government, by virtue of exclusion, practically denies the existence of these pivotal areas of student development.

If we know all of these things to be fact, what should be done next? Next, we will look at some of the implications of this information as it applies to the field of education, and then we will conclude this section and give a preview of what will be found in the remainder of this project.

Educational Implications of the Literature:

It is apparent from the literature that something is not right in the education system today. We know so much about how students learn and what factors contribute to

their success, yet many of these factors are ignored because of disproportionate emphasis on cognitive issues. It is a principle of economics that time spent on one thing detracts from the available time that can be spent on other things. In economics, this is called Opportunity Cost. In a school day, there is only so much time to instruct students, and if the amount of time spent on cognitive issues is overwhelming, then the opportunity cost for cognitive issues is likewise overwhelming. Looking at this as an investment, the school system is investing an overwhelming majority of its time on cognitive issues and seeing little return on that investment on the whole. This return on investment is measured in more than test scores; it is the combined value of test scores, student achievement in extracurricular activities, student character and values, student quality of life during the school-aged years and after, and health of the student physically. Whether or not student test scores improve under No Child Left Behind remains to be seen, however other instances in the US show evidence that some of the other indicators are currently suffering.

If we look at the grand scheme of things we see just what Noddings wrote, that the lawmakers are focusing on the outcome of the tests while students are killing each other, getting pregnant, and crying for attention that the schools do not provide. Here we see some of the real issues that we face in the US, and the literature, as well as common sense, points a finger at the education system as a part of the reason for this problem. Students in the public school system spend a large part of their days in the “care” of the school system. This means that the school system has the opportunity to be a large and powerful influence on the student, so whether or not the school system is doing something to push students into killing each other or taking drugs or getting pregnant, it

is obviously not doing anything to prevent these things, and that is part of the Affective and Psychomotor Domains.

What this means is that regardless of the test scores and regardless of whether or not the students are failing the education system, the education system is failing students.

As we have seen in the literature, this failure is not because of educators or those in the field of education directly; it is more the fault of the legislature in place governing the education system in the US. If there is any blame to be placed on educators themselves, it would be for not working in concert to change the governing policies that are stifling real education and what it should be. Those in the field of education who are training teachers and writing articles on the importance of the Affective and Psychomotor Domains are doing a small part in changing the face of education, but until the laws governing the education system are changed, the work of those in the education field on these two domains will be virtually useless in the public education system, a system which serves a vast majority of students in the US.

Conclusion and Outline for the remainder of the Project:

The point is that those in the education field know that the Affective and Psychomotor, as well as the Cognitive, domains are important. Those in the education field teach that these domains are important. Those in the education field are certain that instruction in these domains is vital to the success of students. Those in the education field are certain that the laws governing education in the US are flawed. Those in the education field need to act.

In this section of the project, we have seen that the education system as it is today is flawed, being based on only a portion of a principle and not the whole of the principle. We have seen the problems with this legislation in regards to the relevance of those parts of the founding ideas that were left out, and the relevance of those ideas to the educational process. We have also seen that there is a need for a change in the education system as we know it today. It is the intent of the author that this project will in some way spark the much needed change for which this project calls and proposes.

In chapter 4, we will look at a new thinking skills model that incorporates all parts of Bloom's Taxonomy, and even acknowledges both parts of the Affective Domain, the emotional as well as the moral/ethical. Chapter 5 dissects Bloom's Cognitive Domain, Maslow's Hierarchy of needs, and Kohlberg's Theory of Moral Development, and discusses them in greater detail in comparison to the new thinking skills model.

CHAPTER 4: THE THINKING SKILLS MODEL

As we have seen in the previous chapters, there are multiple aspects of a student that need to be addressed in the educational process. Throughout my training as an educator, I was told to study a variety of theories of exactly how students learn. As I studied these theories, I discovered that there were a number of models to explain various aspects of a student, be that aspect cognitive, emotional, moral/ethical/spiritual, or physical, but no theory tried to explain all of these aspects in one model. The theory that came the closest to this was Bloom's Taxonomy, but only in premise, as the real model was divided into three smaller models with only a loose framework holding them together. The point is that we KNOW that all of these aspects are important, so why not discuss them all in one inclusive model? That is what I have done here. Figure 2.1 gives a visual picture of the model.

Explanation of the model:

This thinking skills model shows the student at the center of six concentric circles, looking much like the cross-section of a tree-trunk. The analogy of a tree-trunk works well for this model, because with a tree-trunk, the heart of the tree is at the center, just as the student is the heart of the educational system and its reason for being in existence. Also as with a tree, each ring surrounding the heart- our student- represents a layer of growth that would not be present without the preceding layer. This analogy, as well as a few others will be used throughout this portion of the essay.

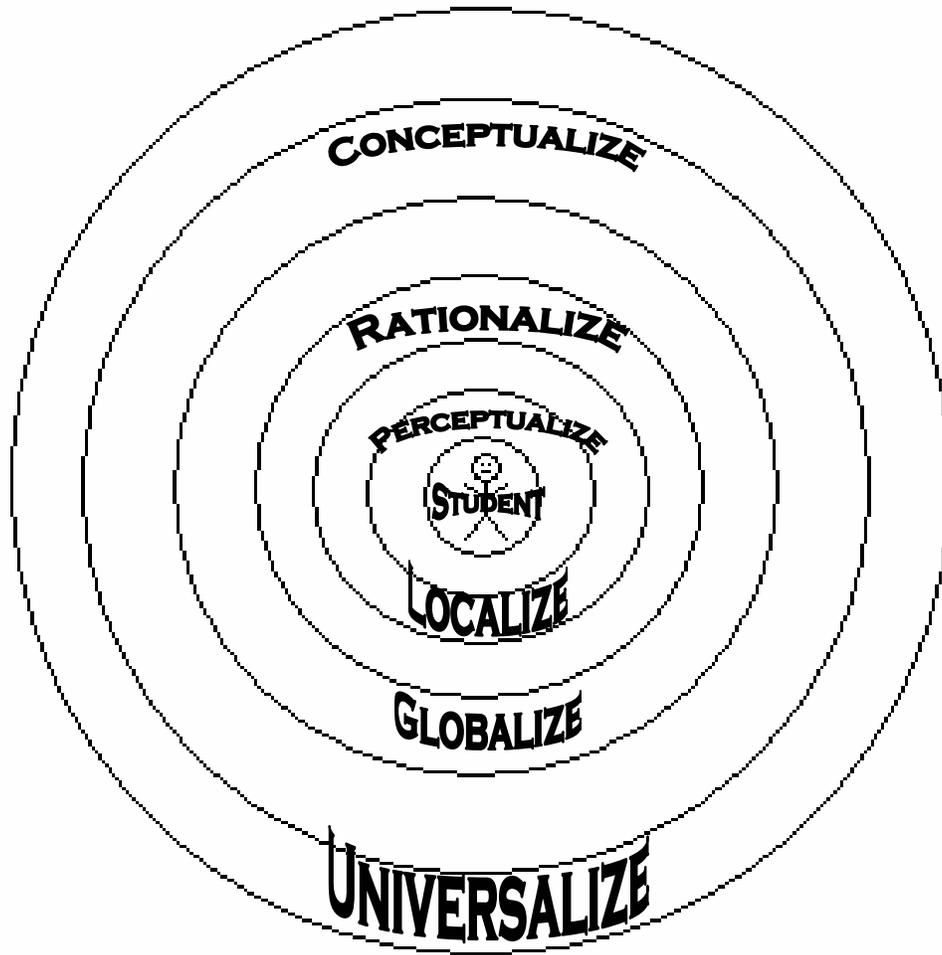


Figure 2.1

Student centered:

It will continue to be emphasized that the student is at the center of this model for the simple fact that any and all aspects of thinking and learning *require someone to think or to learn*; if there were no one thinking or learning, there would be no reason for the model. Learning implies a change to the Intellectual, Physical, Emotional, or Spiritual state of a person- a form of growth- and by definition, a student is *one whose intellectual, emotional, spiritual, and/or physical growth are a priority*.

Thinking is the mental process by which learning takes place; it is the internal, reflective process by which influences are examined, weighed, judged, and then either assimilated into some aspect of living, filed away for later review, or discarded. An influence may start out as physical, causing an immediate physical reaction, but that influence and its effect are later processed by the brain and effect the Mental State of the student. By the above definition of a student, therefore, thinking and learning are not only exclusive to the student, they are impossible outside of the student.

On table 2.1 the model shows the six concentric circles labeled, from the student outward, with the progressive levels, or rings, of growth: Perceptualize, Localize, Rationalize, Globalize, Conceptualize, and Universalize. These six levels of growth are separated placing three above the student (Perceptualize, Rationalize, and Conceptualize,) and three below the student, (Localize, Globalize, and Universalize.) The three levels above the student, rings 1, 3, and 5 (counting from the inside outward,) are the Stages of Informational Processing within the Student, and rings 2, 4, and 6 are the Stages of Informational Relevance towards the Student; each of these two disciplines are described below.

Informational Processing within the Student:

These three stages, Perceptualization, Rationalization, and Conceptualization are all intangible stages as far as their having no concrete substance, only the possibility of relevance. Each of these stages have to do with information, either through taking in information, processing information in some manner, or creating correlations among multiple bits of information in order to develop new concepts and applications of that

information. Each of these tasks of informational processing are covered by these three stages. At each stage some processing of the information occurs, and, as the stages progress, higher order thinking skills develop, mature, and then blossom into the next level.

The first stage of informational processing within this model is Perceptualization. As noted in the definition in the first section, Perceptualization is the taking in of information, primarily through one or more of the five senses. In this first stage, the student receives information and begins to store and evaluate that information. This can be observed in the way babies are constantly looking at any and every thing they can, touching everything within reach, and tasting all they can fit in their mouths, at the same time they are listening and smelling anything within ear and nose range. The only method of learning a baby has is his or her senses, and everything that he or she will learn at that point is based on what he or she smells, sees, hears, tastes, and touches. This is further exhibited in toddlers as they continue in the same manner, and taking it a step further as looking becomes watching, smelling becomes sniffing and inhaling, touching becomes feeling and holding, and tasting becomes savoring as the child, desiring to learn as much about each new influence as possible, tries to teach him or her self through experiencing. The information is then processed and made relevant to the student as explained in the Stages of Informational Relevance explained later. At the end of this section, examples will be given to illustrate the six stages of growth in order.

The second stage of informational processing within students, Rationalization, occurs after the perceived information is Localized (see the explanation of that stage under the Stages of Informational Relevance towards the student.) After the student

localizes perceived information, or understands the direct effect that the perceived influences have on him or her, the next stage is to Rationalize, or connect that information to other bits of information. Rationalization takes into account the relevance of an influence upon one State of the student, and connects that influence to another influence or State. The Rationalization stage of informational processing is the stage at which students begin to be able to draw conclusions from ideas, interconnect two ideas, and start to think logically. This stage is the most encompassing of the stages of informational processing and, in most individuals, lasts for the longest period of time. The Rationalization stage makes way for information to be applied globally, and have a further-reaching relevance for the student, making possible the second stage of informational relevance described later in this section.

The final stage of informational processing within students, as described by this model, is Conceptualization. This stage takes rationalization to a further level and processes information more broadly, referencing information from all four states, all types of influences, and finding inter-connectedness among them. The thinking skills developed during this stage include the capacity for abstract thought, the ability to pull information from multiple states and influences at one time, proficiency in predicting outcomes of perceived influences, the ability to identify possible results of personal actions, as well as the ability to extrapolate information from beyond the perceived influences to find secondary, tertiary, and further removed effects and influences. This stage of informational processing allows the student to reach the final stage of informational relevance presented in this model, Universalization, as described later in this section.

Again, these stages of Informational Processing within Students are not only interconnected with each other, but are also inter-relational with the Stages of Informational Relevance towards Students. The two disciplines are separated only to assist in the mental digestion of the concepts by allowing a progression through the interconnected stages. To illustrate the correlations among the disciplines and how they combine to form a working model, there will be several examples given at the end of this section.

Informational Relevance Towards Students:

Just as there are three stages of informational processing within students, there are also three stages of informational relevance towards students. The model shows the stages of processing as being above the student while the stages of relevance are below. The purpose for the separation is to illustrate that the two disciplines are separate, while the fact that they are represented by concentric circles show that they are inter-relational. In addition to these symbolic queues, the positioning of the stages either above or below the student also has a meaning. The stages of processing are above the student representing the intangible, the abstract, the things that are not easily seen or understood. This discipline deals with what goes on *within* students, and as such, the word *within* is included in the name for those stages. The stages of informational relevance make use of the word *towards* to imply that the stages exist outside of the student in some manner. These stages deal with the outside application of the stages of processing that goes on inside the student. These stages are placed below the student because they are more

tangible and can be seen as the student outwardly applies the inward processing. With this in mind, we will now look at the Stages of Informational Relevance towards Students.

After the Perceptualization of information, where the student receives information through one or more influences, that information is processed within the student. When information is processed, one of three basic things happens to the information: it is discarded; it is stored; or it is applied. We are not concerned with the discarded information as it is not deemed relevant to the student, and the storage of information is simply holding it until the time when it is either discarded or applied, however long that may be; we are, however, concerned with the application of information.

Once information from the Perceptualization Stage is sufficiently processed and ready to be applied, it becomes directly relevant to the student. Once an influence, in the form of processed information, is found to have a direct effect upon the student, that information is Localized. The Localization of information is simply the application of an influence in the form of processed information towards the life of the student. Informational Relevance at the Local level manifests itself readily, often through physical and emotional means such as awe or fear, fullness or hunger, happiness or anger. At this level, the student is self-centered in the aspect that the information taken in applies only to himself or herself until the Rationalization stage of processing is achieved so that influences and information can be connected to see the indirect effects upon others and understand the correlation between the student's own perceptions and life, and the perceptions and lives of those further removed from him or her.

Globalization, the second stage of Informational Relevance, develops as a result of a growing ability to Rationalize that an influence effects more than just the student. Once a student can process information to the point of discerning that an influence has an effect on more than just the student and the student can identify that effect and its correlation between the student and another effected student or influence, the student can begin to apply that information to secondary sources outside of himself or herself. At this stage, the Student can understand that after the temperature in the room dropped and he or she was directly effected, that someone else in the room was also directly effected. This understanding comes through processing the information and connecting the feeling of being cold with the idea that someone else may also be cold despite not having any direct input as the student cannot feel what others feel and cannot perceive the states of others.

Universalization is the final stage of informational relevance. Universalization occurs once globalized influences and information are then connected with other globalized or localized influences and/or information and some over-arching conclusion is drawn into a concept. The application of that concept is Universalization. At this stage, the student makes tertiary and further removed influences and information relevant to himself or herself by seeing the correlation and inter-relation among many different influences and himself or herself. Universalization is the application of higher-order thinking skills such as advanced problem solving.

For the most part, the processing stages are more or less gathering stages and the relevance stages are usage of the gathered material. In each couplet of stages- Perceptualization and Localization, Rationalization and Globalization, Conceptualization

and Universalization- the process has to be developed to some degree in order to be applied and thus create relevance. The intake of information precedes the application. Once the student can process direct influences, he or she can apply that information locally; once information can be applied locally, influences can be rationalized to have more effects than solely upon the student; once the student can understand that influences effect more than him or her, he or she can apply that information globally; once a student can apply information globally, influences can be conceptualized and seen as effecting influences and people who are three or more times removed from the student; once the student can understand that influences can be over-arching or all-encompassing, he or she can apply that information universally.

Examples

To help further explain this model, we will look at a some examples of the progression through the six levels of growth. Each example is meant to illustrate the successive levels of the development of thinking, beginning with the perception of an influence and ending with the universalization of that influence.

The two examples we will look are easily understood as all people are affected by them in many ways ranging from the local to the universal and from the perceptual to the conceptual. These examples are the concept of truth and the concrete and tangible influence known as money. We will look at money first.

A student's first encounter with money is with a solid piece of metal or a flimsy piece of paper. This influence is perceived as an object (take for example, a quarter...)

that is hard and possibly cold (warm if it was previously in the sun or in a hand,) to the touch, round and shiny to the sight, gives off a metallic odor, “clinks” when dropped or hit off of another solid object, and, should the student put it in his or her mouth, tastes rather unpleasant. All of these sensory inputs are the perceptualization of this new experience known as money. Once the student has an idea of what this looks and feels and smells like, he or she can then move on to the next stage: localization, or “so what’s this mean to me?”

Once the student has an idea of what money is physically, he or she has a foundation on which to build. After the student has taken in the concrete information of what money is physically, he or she can process that information and begin to apply it locally. When the student goes to the store with his or her guardian and asks for a package of cookies or a candy bar, the guardian might say “Well, we don’t have the money for that.” In this case money, that hard, shiny, stinky, clinking object is keeping the student from having something that he or she wants. When the student sees that money, the object, means no sweets, that is the embodiment of localization. Now, money has a relevance to the student: the lack of money directly means that the child’s desire for sweets is going to go unfulfilled.

Now, after several such instances, where the child hears the usage of the word “money” and applies his or her perception of money to that word, conclusions begin to be drawn about what money is beyond the perception; the student sees the usage of money (getting chicken for dinner) as well as the non-usage (not buying the sweets) and begins to connect the grocery store to the usage of money in the sense that the same money that was used to buy the chicken could have been used to buy sweets. This is a basic example

of rationalization as the student identifies that it is the use of money that allows the guardian to obtain chicken, and that the same money could have been used otherwise in order to buy sweets.

Once it is rationalized that money can be used to buy either chicken or sweets, it can be extrapolated further and applied to more than just those two items. This application of the rationalized information is the next step in growth: Globalization. Seeing the connection between two related influences (in this case, the action of spending money or not spending it,) and then applying that connection more broadly, logically to all items in the store and then even to all items in all stores, is the globalization of the object and idea of money. Once the usage of money is globalized, the next step in the growth of the student in regards to this model, is the movement from money being a concrete object, then to an idea, and now, finally, to being a concept.

In the conceptualization stage of growth, the student begins to see money as more than an object and more than an idea; the student begins to see money in terms of wealth and poverty, weakness and power. The simple usage of money is considered broadly as a means to achieve or accomplish, and not just to feed or clothe. Money is no longer a concrete quarter, or a stack of bills- it is a bank account, a credit card, the summation of debt, and the value of property. Instead of money being an object or an idea, it becomes a factor of life.

Once the conceptualization of money is fleshed out inside the mind, it can be applied universally and ideas such as the Economy, Gross Domestic Product, Per-Capita Income, and similar abstract ideas using concrete principles of money can be looked at, as well as the deeper moral conventions such as the value of human life and the

corrupting ability of wealth. This is the highest level of growth: that the student can understand the concept of money, apply it to life situations and values, and come up with personal ideas, thoughts, actions, and motivations from that concept.

The other example we will look at is one that is a bit more complicated as it starts with an idea, or pair of ideas, rather than a concrete object. The fascinating thing about these ideas is that they are seemingly already universal without being perceived or rationalized or even conceptualized. These ideas are truth and the lie.

The reason that I say these two ideas are already universal is that even in the smallest child the desire to lie is present, and is seemingly a side-effect of self-preservation, though the threat of danger for telling the truth is present, the child often has no real and tangible sense of that threat and often, without known cause, has a knee-jerk reaction to lie when confronted about a mistake or fault or deviation from the expected. Just today I was told a story about a small girl, no more than two-years old, who was left alone in a high-chair beside an open jar of peanut butter. The little girl grabbed a handful of peanut butter and started eating it, and in the process, smeared it all over her face and hands, and into her hair and clothing. When her mother returned from another room and saw the girl, all a mess with peanut butter, the mother asked “Have you been into the peanut butter?” With eyes wide with guilt the little girl looked up at her mother and shook her head and said “No mommy.” The reaction to the threat of repercussion is immediate even at a young age, and this specific example is cause to believe that the stages of growth represented in this model progress differently in various aspects of growth and development. In the particular cases of truth and the lie, which fall into the Spiritual realm in this model as defined above, it would seem that the feeling of

danger at the idea of truth is the perceptualized factor, while the localized application of that is the notion that the telling of the truth would lead to punishment which would be personally unpleasant. The lie is automatically given as a defense mechanism. The first two stages, in this case, seem automatic and inter-relational.

The next stage, rationalization, as it applies to this example, is to understand why this automatic, self-preserving decision to lie rather than tell the truth occurs.

Rationalization comes rather easy to most in this case and in some seems to be readily present along with the preceding stages. This is evidenced when the guardian of a lying child asks why the child lied. The child can often explain that he or she thought that the guardian would be mad and punish them for the truth. This simple explanation is the precursor to full-blown rationalization. With these explanations of the first three stages, we will look at truth and the lie as it progresses through the full six stages. Remember that the issues that are being explained are the ideas of truth and lie, and not the situations used to illustrate these ideas.

In the first stage, perceptualization, the student recognizes that something happened and a consequence is imminent. That perception is processed in the effect that the student wishes to avoid the consequence. The localization and application of that processed perception is to say, as the case may be, "I did not hit my little brother with the brick that is in my hand." This example is a first pairing example as it deals with the local application of the truth/lie pairing. The truth/lie pairing, as it is an idea and not a concrete object or principle, is looked at differently than money was in the previous example. The truth/lie pairing at the local level deals directly with the student and how telling the truth

or a lie directly effects him or her. At the second level, the rationalize/globalize level, we elevate the truth/lie pairing to a more widely reaching idea.

For this second set of stages, we look at the following situation:

The Earth is being held at inter-galactic gunpoint by some tyrannical world-blasting space aliens. The President and similar foreign leaders have all been informed of the danger and have taken council. Now, they must decide on a course of action- will they tell their citizens the truth, that the world will be destroyed in three days, or do they lie and say nothing is wrong.

This situation requires a global, or far-reaching application of the truth/lie pairing. As this model states, before a globalized application of the influence (in this case the idea of truth/lie,) that influence must go through the rationalization process. The rationalization process, in the above situation, would go something like this:

President: "If we tell the people the truth, it will cause mass chaos, and the last few days of existence on Earth will be anarchy bred from fear and anger."

Other foreign leader: "If we lie to the people, we may be doing them a disservice in not informing them of the danger."

President: "We must think of the greater good of the Earth here, is it greater to be honest and have the potential for self-destruction of our own world? Or is it greater to lie and let the world live in perceived peace up until the final moment?"

This is an outward representation of an inward debate that happens within the student when rationalizing ideas. In this situational example, we see the two conflicting voices, one speaking of telling the truth, and one of the lie. With any influence that is rationalized, the process is similar, there will be ideas presented, mulled over, and then

accepted or rejected. Finally, after hashing out the rationalization process, the conclusion can be applied. In this situation, the conclusion is to lie.

The President and other foreign leaders have agreed to lie about the situation. They have rationalized that the peaceful existence of the citizens is more important than the knowledge of impending doom. They have further rationalized that the global application of the truth/lie pairing is contingent upon the “greater good” of those who will be affected by the application of that idea pairing. So, they lie to the people in their globalized application of the truth/lie pairing in this situation. In this case, they have rationalized that the idea of truth is subjective. Keeping this idea in mind we will continue through the model’s growth process.

In the conceptualization stage the student takes the globalized application of the rationalized idea and further shapes and forms it into something more. To illustrate this, we will look at the rationalized idea that the truth/lie pairing is subjective. Taking this thought, the student begins to examine the implications of this subjectivity. The truth/lie pairing becomes something more than an idea of right or wrong as in the first stages, and more than for better or worse as in the middle stages; it instead becomes a concept, an overarching set of principles that shapes the infrastructure of thought itself. Not all ideas or principles reach the fullness of this stage, for the simple fact that those things that do reach the fullness of this stage become driving forces in the life of the student. Some students find the idea of freedom reaching this point. For some it is religion, and that idea governs their lives. In this example, the example of the truth/lie pairing, we see entire philosophies created around this idea and centered on the question “What Is Truth?” or

“Is there One Universal Truth?” As this conceptualization of an idea is then applied, it becomes a philosophy that is applied universally to everything in the life of the student.

Sometimes the Universalization of a concept requires the student to rethink some things in his or her life. This is not always the case, and in fact happens only occasionally and then only when a concept has a profound effect on the student.

CHAPTER 5: SITUATING THE MODEL:

This chapter goes deeper into the model by making an in-depth comparison to three of the more prominent theories in education: Bloom's Taxonomy, Maslow's Hierarchy of Needs, and Kohlberg's Theory of Moral Development. These theories have been discussed briefly in previous sections of this paper, but here they looked at more deeply in order to act as a measuring-stick for the new model. Each of these theories address a different aspect of the student, and as a quick background to each of these theories, I will explain exactly what I mean by that in relation to the new model.

Bloom's Taxonomy of Educational Objectives is separated into three domains of learning: the Cognitive Domain, the Affective Domain, and the Psycho-Motor Domain. Most of the work done with this theory has addressed the Cognitive Domain which looks at how teachers can assess student learning in terms of measurable learning outcomes. This domain looks at thinking in what our above model terms the Mental or Intellectual State, and will be compared with that State later in this section.

Maslow's Hierarchy of Needs is a model that looks at the student's personal needs, going from the most basic- food and safety- to the most intangible- self-fulfillment and self-actualization. This theory was chosen to give a bit of insight into varying aspects of the Student and how his or her needs play into his or her movement through the stages of growth presented in our discussed model.

Finally, Kohlberg's Theory of Moral Development is discussed in order to look more carefully at the most obscure of the four States described in the opening section of this essay: the Spiritual State. As given in the definitions section of this essay, the

Spiritual State deals directly with the intrinsic values and moral boundaries set up within the Student. Kohlberg's theory moves through three levels of Moral Development, each level containing two stages for a total of six stages of development. As you recall, the model we are discussing consists of six stages done in pairings. In looking at Kohlberg's Theory, we will look at how these 6 stages go hand-in-hand with the six stages of growth presented in our model.

The Thinking Skills Model in Relation to Bloom's Taxonomy:

Table 3.1 below gives the six levels in Bloom's Taxonomy of Educational Objectives: Cognitive Domain. The Table only deals with the Cognitive Domain and not either of the other two domains proposed by Bloom et. al. in the late 1940's and early 1950's. We know from that the Cognitive Domain deals with what our model calls the Mental or Intellectual State, but the principles of growth described by the theory, which are summarized in Table 2.2, can be applied equally to any state and, as we will see, can help describe the model presented in this essay.

As stated above, the Psycho-Motor and Affective Domains were less apparent in their definitions at the time of Bloom's writing. Bloom and his colleagues understood that there is more to the growth of the student than just his or her intellectual development; in fact, they discovered that there was both a physical aspect (the Psycho-Motor Domain) and an Emotional/Spiritual aspect (the Affective Domain.) This seems to comply with my model which states that there are four States in which a student grows and develops in principally the same manner (the Physical, Emotional, Intellectual, and Spiritual States.)

It is therefore a reasonable comparison to make between Bloom’s Taxonomy and the Thinking Skills Model presented in this essay.

LEVEL	DEFINITION
KNOWLEDGE	Student recalls or recognizes information, ideas, and principles in the approximate form in which they were learned.
COMPREHENSION	Student translates, comprehends, or interprets information based on prior learning.
APPLICATION	Student selects, transfers, and uses data and principles to complete a problem or task with a minimum of direction.
ANALYSIS	Student distinguishes, classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question.
SYNTHESIS	Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.
EVALUATION	Student appraises, assesses, or critiques on a basis of specific standards and criteria.

Table 2.2-

From http://www.coe.uh.edu/courses/cuin6373/idhistory/bloom_taxonomy.html

Application of the Cognitive Domain:

Table 2.2 gives us the six levels in the Taxonomy along with definitions for each level. Each of these levels have a commonality with each of the six stages of growth presented in section two of this essay. To better facilitate this comparison, we will first take a quick look at the Taxonomy as presented in the above Table.

The six levels to the Taxonomy are: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. According to the Taxonomy, each level represents a hierarchical step which cannot be reached without the preceding step, and must be present before the following step can be reached; this is a result of the organization of the Taxonomy going from less to more complex. This only makes sense seeing as how a

Student must logically master the least complex before moving on to something harder, then master that before again moving on, etcetera, until mastering the most complex of skills or ideas. As the Table illustrates, Knowledge comes before Comprehension, which comes before Application and so on.

Now, as we look at the Taxonomy in regards to my model, we will first notice that the Model similarly states that each stage of growth can only come after the preceding stage; for example: Perceptualization comes before Localization which comes before Rationalization and so on. Upon further investigation into Bloom's Taxonomy we will see that its stages can be broken down into two subsets just as our model is broken down into the subsets of Relevance towards the Student and Processing within the Student. Looking at the Taxonomy in terms of these two subsets or disciplines as they are called in the first section of this essay, we see that Knowledge, Analysis, and Evaluation are all three manners of Informational Processing within the Student. The remaining three levels: Comprehension, Application, and Synthesis, by their definitions, would fall into the discipline of Informational Relevance towards the Student. The rationale for this is described below.

Knowledge, by common interpretation, is a concrete, tangible thing and not a process to be undertaken, however, in the definition on Table 3.1, knowledge is simply a process of recognizing information in the form that it is encountered. This is related closely to Perceptualization which, by its definition, is the taking in of information gained from influences. Both of these stages deal with the receiving of information from an influence.

From the Model, we know that the second of the Stages of Informational Processing is Rationalization. By the definition in section one, Rationalization is the connecting of two or more influences or states together. In the Taxonomy, the Analysis Level is very similar to the Model's stage of Rationalization. Both Levels/Stages involve the connection or relating and distinguishing of influences (in the case of the Taxonomy, these influences are assumptions, hypotheses, evidence, or structures of statements.) We next move on to Evaluation and Conceptualization.

The definition for Evaluation as given above, tells us that at this Level of the Taxonomy the Student looks at the given information more broadly and decides its value, its relevance, and its merits. All of these are abstract concepts and not concrete facts. The Model's corresponding Stage, Conceptualization, deals with the changing of information into more broad principles or concepts. Both of these Levels/Stages are evaluatory in that they seek to understand the heart of the information, discern the underpinnings of the idea or situation. They are both abstract processes that require mastery of lower level development to fully achieve the processing ability that these levels require.

The remaining three Levels of the Taxonomy also correspond to the remaining three Stages of the Model and fall into a shared subset. The Taxonomy's remaining Levels- Comprehension, Application, and Synthesis- all are applications of information, and fall into the discipline of Informational Relevance towards Students, just as the Model's remaining Stages- Localization, Globalization, and Universalization- do.

Comprehension, according to the Taxonomy, is the translation, understanding, and interpretation of information based on the students prior learning (or knowledge). By definition, Localization is making relevant (understanding) information taken from

influences (Knowledge). So by way of these definitions we can conclude that Comprehension and Localization are also similar.

The relationship between Application and Globalization is not quite as visible as the previously discussed relationships, however some similarities still exist. Application, by the above definition is taking a variety of gathered information and using it broadly to approach a problem or task. In an earlier section, we looked at how the stages of Informational Relevance applied information within the life of the Student. This Level of the Taxonomy easily fits into that category, and as the information is used more broadly than at the Comprehension Level, then it can easily be seen as related to the Globalization Stage of this Model which is the connection of information with already localized knowledge.

The final levels of the Taxonomy have been debated, practically since its conception, as being virtually interchangeable. Some argue that Synthesis comes before Evaluation, and others argue just the reverse. By our model, we will look at Synthesis as the final part of the Taxonomy, as it corresponds nicely to our final stage, Universalization. From the above definition of Synthesis, we see that this stage is basically pulling together everything from the other levels and integrating all of the knowledge and processes that the Student has learned and experienced, and weaving it into a new or personal idea, plan, solution, or product. This is the very essence of Universalization. The Universalization stage of the Model we are discussing is where the Student pulls from every source and resource to piece together an understanding of some sort. The Student applies every relevant thing that he or she has learned or experienced to create a new influence be it an idea, an occurrence, a situation, or potentially even an

environment, that may directly or indirectly affect not only himself or herself, but other students as well.

The Thinking Skills Model in Relation to Maslow's Hierarchy of Needs:

Table 2.3 shows an adapted 8 level diagram of Maslow's Hierarchy of Needs, which we will be looking at in this section of the essay. The diagram separates Maslow's Hierarchy into 8 levels that can be used to help understand the four States described in the first section of this essay. In several places we will look back at the table for reference, and we will also look at some quotes regarding Maslow's Hierarchy. These quotes are taken from Maslow's 1970 book entitled *Motivation and Personality, Second Edition* from Harper and Row publishers. Page numbers will be referenced with the quotes.

Application of the Hierarchy:

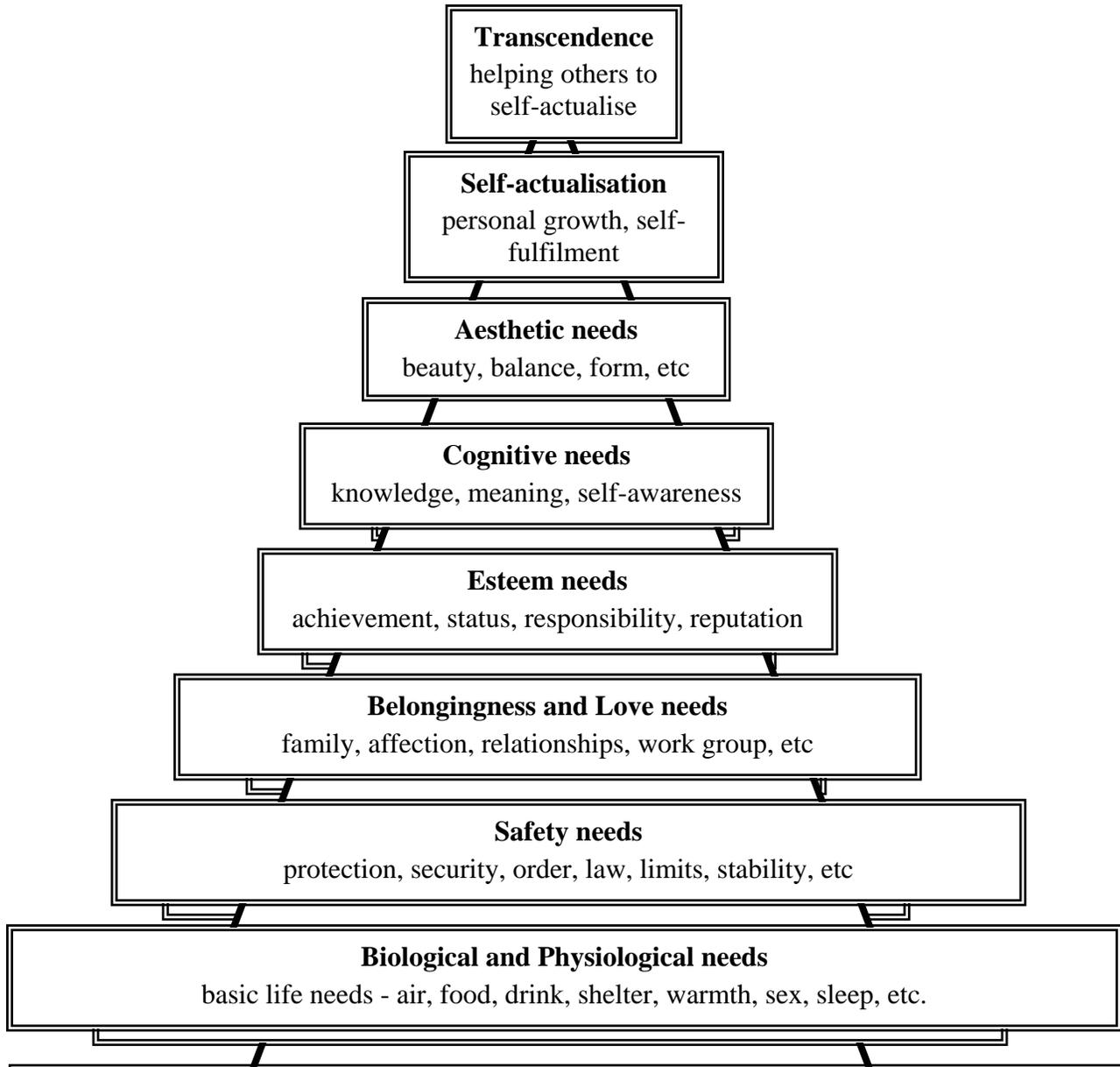
"The higher the need, the less imperative it is for survival, the longer gratification can be postponed, and the easier it is for the need to disappear permanently."

(pg. 98)

"Higher need gratifications produce more desirable subjective results, ie., more profound happiness, serenity, and richness of inner life." (pg. 99)

“The lower needs are far more localized, more tangible, and more limited than the higher needs.” (pg. 100)

**Table 2.3 - Adapted 8 level
Hierarchy of Needs diagram, based on Maslow's theory**



© design alan chapman 2001-4 - adapted by persons unknown based on [Maslow's Hierarchy of Needs](#)

From www.businessballs.com

From these short excerpts, we can see that Maslow found the lower needs to be localized and tangible. These needs, such as hunger, thirst, warmth, and sleep, are all needs that would fall into the Physical State. On the converse, Maslow stated that the higher needs are more intrinsic and even non-essential to the extent that they are not needed for survival and are even able to disappear permanently if not gratified, though they give the most profound levels of results when they are met.

Table 2.3 gives a visual depiction of the Hierarchy, showing it as a pyramid, with the lowest levels of needs (Biological/Physiological needs and then Safety Needs) serving as the base, and the highest level of needs (Self Actualization and Transcendence,) at the pinnacle. On this particular diagram of the Hierarchy there are eight different levels of needs; some other diagrams that are available online and in books have fewer levels and some more. This diagram was chosen in lieu of the others because it is both easy to understand, and illustrates the ideas presented in our Model most efficiently, as will be explained below.

The levels of the Hierarchy can be paired with each other, taking the Biological/Physiological Needs and pairing them with the Safety Needs; the Belongingness and Love Needs with the Esteem Needs; the Cognitive Needs with the Aesthetic Needs; and Self Actualization with Transcendence. This pairing is done by relationship of the two levels of need: the lower level is the specific and the higher the general. For example, the first pairing- Biological/Physiological and Safety Needs- show the lower of the pairing to address the needs of shelter, warmth, sleep, etc. and the higher of the pairing to address the needs of protection, security, order, etc. If you look at the

pairing carefully, you will notice that the most basic and specific form of protection (a second level need) is shelter (a first level need), just as warmth can be seen as a type of security, and sleep can be viewed as a type of order. This idea looks at the lower each pairing as the basic elements that go into the higher of the pairing. Stated differently, the higher of the pairing is just a broader application of the lower. To use words from our Model, the higher level of the pairing is just a Globalized version of the lower.

This idea becomes more valid when looking at the remaining three pairings. Looking at the second pairing, which deals with Belongingness/Love Needs and Esteem Needs, a person must have the Love Needs met, namely affection, before reaching the Esteem Needs. Affection comes from the other items listed in that box- family, relationships, work group- and when affection is expressed by a few people, it turns to belongingness within that circle of people; when affection is expressed by a wider, more globalized group of people, it becomes a reputation, it becomes status, it becomes achievement, and in order to maintain those things, it becomes responsibility. Again, when we look at the third and fourth pairings, we see the same idea repeated. When the Cognitive needs are met- knowledge, meaning, self-awareness- then the Aesthetic Needs- beauty, form, balance- are realized. The Globalization of knowledge in art will allow us to see the beauty in all things. The Globalization of meaning will allow us to see the form of that which we now understand. The Globalization of self-awareness allows us to achieve balance in our lives, placing our skills and our faults in harmony with one another. The top pairing- Self-Actualization and Transcendence- show that after a person is self-actualized, he or she can then globalize that knowledge to help others do the same.

We can now see the relationship between each pair of levels in the Hierarchy, and can look at each pairing, not in terms of how they relate to one another, but rather, since we have established that relationship, we can look at the content of each pair of levels and how they apply to the student.

The first pairing, Biological/Physiological Needs and Safety Needs, as stated above, deal with tangible needs, needs that influence the Physical State of the Student. For example, the Biological /Physiological Needs listed on the diagram are air, food, drink, shelter, warmth, sex, and sleep. Each of these needs have a direct effect upon the student. The need for air is one that, if not fulfilled, will stop physical life. The body will react to that influence by shutting down completely. Lack of food causes physical discomfort followed by the breaking down of bodily tissue to use as fuel, and finally death. The needs for drink, warmth, and sleep are also easy to see as physical needs, but shelter and sex are not readily seen as immediate physical needs, however both are real needs whose denial can have serious effects upon the body and thus the Physical State.

Belongingness/Love Needs are clearly aspects of the Emotional State as they deal directly with personal feelings of affection and positive relationships. Esteem Needs, as we have seen are simply globalized Belongingness/Love Needs that deal with the same principle feelings only applied more broadly. The positive fulfillment of these needs ensures that the negative fulfillment of these needs is not produced within the student. The negative fulfillment of these needs, or better put, when these needs are not met with the desired affection and sense of belonging, emotions such as depression, anger, insecurity, and hopelessness will fill these needs in a negative manner, creating emotional

difficulties for the Student until these needs are finally, positively met, if ever they truly are.

The next pairing, Cognitive Needs and Aesthetic Needs apply to the Mental or Intellectual State. These needs deal with the brain's processing of influences, as in storing, evaluating, and recalling influences. Stored information is knowledge, evaluation of knowledge creates meaning, and meaning leads to understanding what one actually knows and can do, which is self awareness. All of these are aspects of the Mental State, as are the Aesthetic needs of beauty, form, and balance, as they look at the total meaning of an influence and not just one or two aspects thereof.

The final pairing of levels within the Hierarchy, Self-Actualization and Transcendence, are closely tied to the Spiritual State. As defined in the first section, the Spiritual State is the total summation of values, morals and ethics within the Student. It is a person's values, his or her ethics and personal morals that define him or her. In any given situation, a person whose Spiritual State is developed far enough, will "filter" any action or reaction through his or her set of values and ethics. If an action would go against his or her personal code of ethics, against his or her values, that action would not be undertaken, unless possibly under duress or extreme circumstances that may result in a conflict with other high ranking values or morals. It is at this point, when these morals, ethics, and values have that level of authority over the student's actions, that the student is truly Self-Actualized. The Student knows intrinsically what he or she is capable of, and by that system of values, ethics, and morals is in a position of harmony within. When the Student can reach that level of harmony, and become self-actualized, he or she can then

transfer the knowledge of the process of his or her own self-actualization to others to help them also reach the same level of the Hierarchy.

We can see that there is some correlation between these two ideas, but what is not as apparent is how the Hierarchy and the Model under review actually can be rationalized together as the Hierarchy is a sequential progression of need fulfillment that, as the theory states, must be followed in the prescribed order, yet the Thinking Skills Model related these levels, as mere facets of four different States of a Student that operate simultaneously and actually interact with each other. If the Hierarchy's levels must be achieved in the prescribed progression, then how is it possible that the four States described in this essay can function in connection with each other if the needs of each State are not met? These two theories are at odds on this point. Our Model views each of these States as continually growing and maturing, and as this growth and maturation occurs, needs are met in a non sequential order, going against the thought that the needs must be met in progression. It is an easy example to comprehend that a Student can know that he or she is loved and belongs in his or her family and classroom, while at the same time not get an adequate amount of food or sleep or shelter to function at an optimal level. That same student may not be full of knowledge, partly because of the lack of physical nutrition hinders cognitive function, yet the Student has a clear system of values including unshakeable faith in a higher power that gives the student a profound sense of his or her place in life, the world, even the universe, making the student self-actualized.

It is my firm belief that not all students grow at the same rate in any one of these states for the simple fact that each and every student is subjected to a wide array of influences, the combination of which, are unique to him or her, and no other student has

ever or will ever go through that exact same combination of influences in that same order and at the same points in their lives. This variability within the exposure to influences creates an infinite number of possibilities, and thus an endless array of individuals, no two of which will ever develop in the exact same way within one or more of the four States. It is for this reason that the hierarchy and this model differ in the ideas of how these needs get met, whether in sequence or in a non-sequential, unpredictable manner. The Hierarchy does well to define the different categories of needs, but its strict progression format does not accurately explain the development of the Student.

The Thinking Skills Model in Relation to Kohlberg's Theory of Moral Development:

In the late 1960's and early 1970's, a psychologist named Lawrence Kohlberg came up with a theory of how children develop morals. This theory is known today as Kohlberg's Theory of Moral Development, and is the last major theory that this essay will address. In the previous discussions in this section of the essay, we looked at the correlation between Bloom's Taxonomy of Educational Objectives: The Cognitive Domain and our model's Mental/Intellectual aspect, and then we looked at the relationship between Maslow's Hierarchy of Needs and our own model's Physical and Emotional States. In these previous comparisons we have seen how our Model encompasses both of these previous theories and expounds upon them. What we have not addressed as of yet in this section is the Model's fourth and final State: the Spiritual State. As stated in section one, the Spiritual State is the summation of the student's

morals, ethics, and values. In this part of the third section of the essay we will look at that very State in relation to Kohlberg's developmental theory regarding morality.

Kohlberg's theory classifies the stages of moral development into three levels, each containing two individual but connected stages. The three levels are: Pre-conventional, Conventional, and Postconventional. Here is how Kohlberg describes these levels in his 1987 book, *Child Psychology and Childhood Education: a Cognitive-Developmental view*:

“To understand the stages, it is best to start by understanding the three moral levels. The term conventional means conforming to and upholding the rules and expectations and conventions of society or authority just because they are society's rules, expectations, and conventions. The individual at the postconventional level understands and basically accepts society's rules, but this acceptance is derived from formulating and accepting the general moral principles that underlie these rules. These principles in some cases come into conflict with society's rules in which case the postconventional individual judges by principle rather than convention. The pre-conventional moral level is that of most children under 9, some adolescents, and many adolescent and adult criminal offenders. The conventional level is the level of most adolescents and adults in our society and in other societies. The postconventional level is reached by a minority of adults and is usually attained only after the age of 20.” (Pg. 283)

Table 2.4 gives the six stages of development along with a short description, categorized within the three levels. We will see how each of these stages corresponds with a separate stage from our own model. When making the comparison with the first

two stages, we will refer to the example of truth given in section 2, on pages 13 and 14 in this essay.

As you will see on Table 2.4, Level 1 stage 1 of Kohlberg's Theory is labeled as "Obedience." Obedience is described as the rewarding of something good and the punishment of something bad. If we break this down, it is easy to see that rewards and punishments are both perceptualized events that come as a direct effect of obedience and/or disobedience. As in our example in part 2, we read about a little girl who, upon being asked if she had been eating from the peanut butter jar, said no despite the evidence being all over her. In this example, the girl perceived punishment for being honest, and so told the lie to avoid that punishment. Had the girl been obedient and not bothered the peanut butter, there may or may not have been a reward, however her disobedience made her believe that, had she told the truth, there would have been a punishment. It was the perception of this punishment that caused the girl to lie.

To globalize this idea, we simply take the idea of good deeds being rewarded and apply that more broadly to the extent that continued good deeds cause continued and varied rewards, such as praise. This is described in Kohlberg's level one, stage two idea of Instrumental Egoism and Simple Exchange. This level and stage says that the next step in morality is doing good in order for others to do good to you.

The rationalization of goodness is the understanding of what makes others good and coming to the conclusion that, should you also exhibit that behavior you too would be considered good. This is Kohlberg's level 2 stage 3, Personal Concordance.

TABLE 2.4 Kohlberg's Six Stages of Moral Development

Level and stage	Description
Level I - the preconventional level	
Level I, Stage 1 obedience	Whatever is rewarded is good; whatever is punished is bad.
Level I, Stage 2 instrumental egoism and simple exchange	I'll do something good for you if you do something good for me. Fairness means treating everyone the same.
Level II – the conventional level	
Level II, Stage 3 personal concordance	Good is conformity to a stereotype of "good" people, or to peer approval.
Level II, Stage 4 law, and duty to the social order	Good is defined by the laws of society, by doing one's duty. A law should be obeyed even if it's not fair.
Level III – the postconventional (principled) level	
Level III, Stage 5 societal consensus	Good is understood in terms of abstract principles that the society has agreed upon. An unfair law ought to be changed.
Level III, Stage 6 universal ethical principles	Good is understood in terms of abstract principles whether or not societies agree with them. An emphasis on human rights.

Taken from <http://www.wcg.org/lit/disc/moraldev.htm>

A globalized understanding of good is to see that “good” is a person who follows the rules of society. To be a good citizen one must be obedient to the law. In the globalized understanding, one looks at the idea of good as applied to everyone, not just the student him/her self, and determines that societal laws define who is good and who is not. It is at Kohlberg's Level 2, stage 4 that this globalization takes place.

At level three of Kohlberg's theory the student reaches what Kohlberg calls the Postconventional or Principled Level. It is at this level that morality and the idea of good become more than the opinions of others. At this level the values of the student begin to weigh in upon decision making and the view of right and wrong. According to Kohlberg, people can slip into and out of stage five, but seldom progress that far developmentally and rarely achieve stage 6. From the quote at the beginning of the discussion of his theory, Kohlberg himself states that a minority of adults reach the postconventional level, and that almost always after age 20. It is at this level that the student looks past the laws and sees the principles upon which the laws were constructed. No longer are the laws what govern the student, but the principles underneath those laws. It becomes no longer the law which determines whether or not the student is "good" but rather his/her own obedience to the principles underscoring the laws themselves.

The way our model terms these principles is conceptualization, as the globalized application of the law is now changed into the concepts behind those laws. It is these concepts, or as Kohlberg calls them principles, that make up the student's personal values.

Kohlberg's final stage, Universal Ethical Principles, is the universalization of the concepts of stage five. In this stage, the principles underlying law are applied broadly to explain all sources of good and all sources of morality. For example, it is an universal concept that killing another person for pleasure is wrong. It is also an universal that stealing is wrong, and so is adultery. These things are the foundations for the laws of many cultures and societies worldwide; enough different cultures and societies to conclude that these are universal concepts.

It is relatively easy to see the correlation between these two theories, as Kohlberg's theory and the Model we have discussed follow along in the same progressional manner; just as the correlations between our model and each of the other two theories discussed were easily seen. The purpose of this model is not to take the place of any of these preceding models, but rather to expound upon and connect them into one cohesive model that attempts to more fully explain the sum of its parts.

CHAPTER 6: CONCLUSION

We have just finished looking at our model in relationship to three of the prominent educational theories from the past, which are still in use today, and we have also begun to look at this model as a way to interconnect these past theories into a working model for today. We know, according to Bloom (see quotes earlier in this section,) that the Cognitive Domain is not the only aspect of development in a student, but rather one of a few. We have seen with Maslow the importance of physical and emotional needs. And we have looked at the development of morals and ethics as written of by Kohlberg. These past theories individually do not show us a complete student, as the student is more than the sum of his/her thoughts, more than the workings of his/her emotions, more than physical needs and attributes, and more than his/her moral character. The student is a complete being comprised of all of these things, and we, as educators, must first be aware of this fact, and second, teach to foster development in all of these areas.

Were a student simply a mind, current standards of education would be enough. There would be widespread success of standardized testing for the simple fact that teachers could fill up the student's brain with information to regurgitate onto a bubble sheet at the end of the school year. There would be no underlying factors that inhibit student performance, and no illness, need, or feeling would prevent the student from performing up to his or her potential on graded assignments. If a student consisted of only a mental aspect, they would be more like a computer than a human being.

We could say the same thing for any of the four states discussed in this model, that were a student only one of these, then our job as educators would be easy. We would only need to understand one aspect of a person and that is all. We could specialize, and have personal trainers to educate those who are only Physical students, religious scholars educate those who are only Spiritual, Psychologists educate those who are solely Emotional, and the foremost expert in their field to educate the Intellectual. However, the student is not one-dimensional, and all of these aspects must be developed for the student to fully live and learn to potential.

For decades and longer, schools have recognized the need for physical education, and for counselors to look at emotional needs as they arise, and even some schools address Spiritual needs. All schools are run with the intention of educating the student intellectually. The problem is that physical education as it is approached today does not address the whole of the Physical state, and does little to develop that aspect of the student. The presence of a counselor at the school does little to address the Emotional needs of the student, and the teacher hasn't the time to sit and talk with every student to the extent that is needed. The press for separation of Church and State does little to further the cause of Spiritual Education, leaving that aspect virtually un-touched in public education. Without addressing these other aspects of the student, the current focus on the intellectual state has a less than desired effect. For education to be successful in this day and age, it must include education for all four states of a student.

If we were to talk to any educator, he or she would say that it is difficult to teach a student who is hungry or cold or tired. It is difficult to teach a class that misbehaves. And it is difficult to teach a student who feels worthless or is otherwise emotionally injured.

Each of these obstacles have an effect on the outcome of every lesson and as such, an effect on the scores of all standardized tests. If we, as teachers, could help develop these states along the same lines as the intellectual state, then these factors would be less of an intrusion, and have less of a negative effect upon the development of the intellectual state.

We already see some educators calling for "Character Education" to help students develop values and morals. We also see a rise in school programs that provide breakfast to students for free or at minimal cost. Many communities are opening up recreation centers and city parks have long been a place for students to play and exercise. The bottom line is that we know, as educators sure, but as people in general that there is more to a student, more to a person, than the mind. We know that there are physical needs, emotional needs, and spiritual needs in addition to the intellectual needs, and we make small efforts to meet those needs. However, our small efforts are inadequate. The question, then, becomes "How do we address each of these states under the current system of education?" The answer is that we really can't. The current system is flawed and should we make the attempt to wholly educate the student by addressing these other states adequately, it would require a revamping, or at least a major "tweaking" of the current, academic standards-based educational system.

APPENDIX

The purpose of this appendix is to help clarify the terms and concepts used in the presentation of the thinking skills model. Some of these words are familiar but may be used in a different way than otherwise assumed. This section is meant to give a common definition of each word so that ideas can be more easily understood. After each definition there will be an explanation of the word or concept as it applies to this model.

Student- *One whose intellectual, emotional, spiritual, and/or physical growth are a priority, not just for him or her, but also for the individuals and collectives with whom he or she interacts.*

The definition given to the word student in this model is purposely broad, as this model looks at thinking and learning as a life-long pursuit aided by every source of information available. For this model, a student is anyone who is actively putting forth an effort to learn, and anyone who is, either actively or passively, being instructed in some fashion by another person or group. As long as there is information being presented or displayed, there is an opportunity for learning, whether the potential learner is “trying” to learn or not. A child sitting in a classroom day-dreaming is still considered a student because he or she has others taking concern for his or her education and even while day-dreaming some information is finding its way into the child’s brain.

This definition also recognizes that there are more states of learning than just the intellectual, which deals with logical information and the processing thereof. This model

also recognizes the capacity for learning in three additional states: the Emotional State, the Spiritual State, and the Physical State. Each of these states will be fully defined later in this section and referred to throughout this essay.

Teacher: *One to whom the intellectual, emotional, spiritual and/or physical growth of self and those with whom he or she interacts is a priority.*

The definition given to the word teacher in this model is also purposely broad, however not as broad as the definition of student. A teacher in this model is any person who takes it upon himself or herself to impart some knowledge, skill, or experience upon another individual or group, and is also motivated to teach oneself in the process. Any person who is actively engaged in educating others is also by definition engaged in teaching himself or herself. This is justified by the fact that before a person can educate others on a topic, issue, skill, or idea that person must also learn that skill or issue or idea or topic.

By definition a teacher is one who has taken some measure of responsibility to educate students. The transferal of information or skills does not necessarily have to be done by a teacher, however. A person who unknowingly or unwillingly passes off information or behavior traits is a Role Model, and not a teacher. Role Models can pass on positive as well as negative information, habits, skills and issues without actively trying.

Effect: *The potential for change in state produced either directly or indirectly by an influence.*

An effect in this model is the result of an influence (action, environment, situation, or idea, each of which are defined later in this section.) Effects are separated into two categories: Direct and Indirect Effects, both briefly defined below. An effect has the potential to alter one or more learning state at a time and in any number of ways. For the purpose of this model, effects will only be discussed in relationship to the Student for the fact that this model is concerned with the way that Students develop and learn.

Direct Effect: *When an influence causes a change, either positive or negative, in the state of the student; the caused change must be immediate to the influence and not secondary to or further removed from that influence.*

By this definition, a Direct Effect is when an influence has an immediate impact upon the state of a student. This impact may also have an indirect effect (see below) upon a separate state of the student. For example: an environmental influence, such as cold has an immediate impact, or Direct Effect upon the Physical State of a student. That influence may then Indirectly Effect some other state, such as the Intellectual State as the student stops his or her current thought process and instead notices the change in his or her Physical State, and then begins to think about getting a jacket or turning on some heat.

Indirect Effect: *When an influence causes a change, either positive or negative, in one or more states of the student by effecting either a different state, or an outside agent which*

in turn effects one or more states of the student; the caused change in state is not the immediate result of the initial influence itself, but a secondary or further removed result of that influence.

In addition to the example above where a direct effect upon the Physical State indirectly caused a change in the Intellectual State, a succession of two or more influences could cause a change in one or more states. Usually this type of effect occurs upon the Spiritual, Emotional, or Intellectual States, as these states deal more with the abstract than the concrete. For example: take our same temperature change from above, however, the student does not notice this change, but the teacher does. The primary influence is the temperature change, that change directly effects the teacher who then tells the student to get his or her jacket. The student then realizes that it is cold and complies. The cold first indirectly effected the student through the teacher, and then directly effected the student once an awareness of that influence became present. Both Direct and Indirect Effects are illustrated in Figure 1.1.

Influence: *Any factor that has the potential to influence one of the four states of a student.*

An influence creates the potential for an effect (defined above) upon one or more states (mental, physical, emotional, or spiritual,) of a student. Influences are separated into four types: Environment, Situation, Action, and Idea, each of which are defined

below. Note that an influence creates the *potential* to produce an effect, for a something to be considered an influence, it does not necessarily need to produce this effect.

Environment: *The physical surroundings of the student; this includes all forms of sensory input.*

The Environment is anything a student can see, hear, feel, smell, taste, or otherwise interact with. The temperature of a room as in the above explanation, the colors of a poster, the sounds of a humming light bulb, and the smell of chocolate chip cookies are all factors that have the potential to effect one or more of the student's states. Factors in the Environment, such as books, have the potential to directly effect a student (by falling upon his or her foot for example,) or to indirectly effect the student (by presenting an idea that influences one or more states of the student.) The Environmental influence is the book, which can have no direct effect on the Intellectual, Emotional, or Spiritual State(s) of the student. However, the ideas within the book can have an effect upon those states.

Idea: *This influence is an intangible and sometimes abstract concept that can be introduced by an outside factor (such as an individual or group, or through a book, newspaper or other medium,) or conceived by the student him or her self.*

This factor is wholly intrinsic and can only directly effect the Intellectual, Spiritual, and Emotional States, but can indirectly effect any of the States. The idea that

there is one God, whether espoused by another or concluded by the student, has the potential to directly effect the Mental State of a Student by causing more questions that need answered; it can directly effect the Spiritual State of a Student by bringing about within the student a new set of personal values or ethics; and it can directly effect the Emotional State of the Student by sending him or her into tears of joy at the realization or into an irrational fear because of the realization. This idea has no direct effect upon the Physical State, but any of the other states may, in turn, produce a physical reaction.

Situation: *The social and/or political circumstances surrounding the student.*

This influence is the culmination of intangible factors in one general area that are present around the student. A Situation may be a poor economy, an unstable home life, peer pressure, or any number of other examples. This influence is more readily viewed as directly effecting the Mental and Emotional States, with indirect effects upon the Physical and Spiritual States. A poor economy can cause anger or mental unease which could in turn cause high blood-pressure, and/or a great desire to change ones Spiritual State.

Action: *This is the influence of occurrence, either planned or by chance; this may be the workings of the student or another individual or collective, and may have either Direct or Indirect Effects upon the student.*

This factor implies a physical occurrence, such as reading a book, being punched in the stomach, or a sudden drop in the economy. This influence not only effects States, but also can effect other influences. If the economy plummets, this Action will cause the a change in Situation; if the student reads a book, this could bring about an idea that in turn influences one or more States. If the student is punched in the stomach, this undoubtedly directly effects the physical state, and could lead to changes in the Emotional, Mental, and/or Spiritual States as well.

State: *The current level of knowledge or development in a specific area of a Student's life.*

A State, by this definition is the level of knowledge or development within a certain aspect of life. This is measured within one of four areas: Intellectual or Mental; Emotional; Physical; and Spiritual, each defined below. The Intellectual State, for example, is the current level of mental development and knowledge of the Student. When an influence creates an effect, there is the potential to change, by adding to or subtracting from, the level of knowledge or development in the affected State. If the Student reads an article on the mating habits of wolves it is assumed that his or her Intellectual State will change as more information is added to his or her mind, culminating in an increase of knowledge.

Physical State: *This is the physiological existence of the Student.*

The Physical State deals with the concrete- the reality of life. This State has dominion over the five senses and every aspect of those senses. This is the most comprehensive of the States as it deals with every aspect of the physical world as well as the physical person of the student. The Physical State encompasses everything from physical feelings of hunger, thirst, and pain, to the sensory perceptions of sight, smell, and hearing. This State is the primary source of input for the Student and is Directly Effected by the Environment and Actions. This state is not Directly Effected by Ideas or Situations, but can be effected indirectly by these influences.

Emotional State: *The intrinsic desires and “feelings” of the student.*

This State is almost always Indirectly Effected and rarely Directly Effected. The Emotional State often serves as a median between the Mental and Physical States as when the Physical State receives an influence, the Emotional State often is Indirectly Effected and, in turn, Indirectly Effects the Mental State. Likewise, when the Mental State receives an influence, the Emotional state is often Indirectly Effected, and in turn, effects the Physical State. For example, The Physical State receives the influence of a letter from a significant other. Whether or not the Physical State is changed, it still received that influence by taking in the sight of the letter, the feel of the letter, the smell of the person delivering that letter, etc. The Emotional State, upon the receipt of that letter immediately reacts, and effects the Mental State which then prompts the Student to read the letter. The letter, by way of influencing the Physical State again as the Student reads it, creates within the Student the idea that the letter is calling for an end to the

current relationship with the significant other. This idea, Directly Effects the Mental State which Indirectly Effects the Emotional State (which manifests in the expression of anger, hurt and sadness,) and as a tertiary Indirect Effect, the Physical State changes as tears fall, fists fly, and voice screams. The Emotional State is closely tied to all three other States.

Intellectual or Mental State: *The cognitive functioning of the Student.*

The Mental or Intellectual State of the Student deals with intelligence level as well as the cognitive functions of the Student. Reading level, grade appropriateness of materials, critical thinking skills, memory, etc. are all aspects of Intellectual State. This State also includes the thought processes that link with other States to help determine the meaning and implications of Indirect Influences. This concept is most readily seen in regards to the Spiritual State. An idea can be presented, for example one of the various tenants of The Bible; the Intellectual State then processes that idea and it goes to the Spiritual State to influence. This State is Directly Effected by Ideas and Situations, but can be Indirectly Effected by other States and all forms of Influence. The Intellectual State is unique among the States as it is the only one that can both Effect and be Effected by all three other States, either Directly or Indirectly.

Spiritual State: *This State is the summation of current morals, values and ethics within the Student.*

This State deals with the intrinsic concepts of self-worth, self actualization, and personal beliefs and/or values. This State is most often called the Conscience and is

separate from but closely related to the Emotional State and the Intellectual State. Emotionally a Student may desire to injure a peer; Intellectually the Student may devise ways of carrying out that desire; Spiritually the Student may believe that desire and behavior are unacceptable. This State can be Directly or Indirectly effected by Ideas and Situations, and can also be Directly Effected by the Mental and Emotional States. The Physical State has little Direct Effect on this State, however the Spiritual State can have a Direct Effect on the Physical State, as in the case of the Student plotting to injure a classmate, the Spiritual State may prevent the Physical State from acting.

Stages of Informational Relevance towards Students:

The thinking skills model discussed in the next section of this essay views the fostering and developing of thinking skills as two interconnected disciplines : Informational Relevance towards Students, and Informational Processing within Students. Under each of these disciplines are three stages. The Stages of Informational Relevance towards Students- Localization, Globalization, and Universalization- are defined below.

Localization: *The making of an idea, situation, environment or action personal and immediately relevant to the Student.*

Localized information has some immediate relevancy towards the Student; the Influence Directly Effects one or more States of the Student. Localization of information

makes information personal to the Student. Information with direct, personal implications towards the Student is more easily remembered and understood than concepts and ideas that have no bearing upon any State of the Student. This idea will be explained more fully later in this essay.

Globalization: *The making of information, through the introduction of one or more forms of influence, relevant to the Student through connection with a Localized idea, situation, environment, or action.*

Globalization occurs when an Influence Indirectly Effects the Student through Localized information. Globalized information has a secondary relevance towards the Student. This stage uses the idea of scaffolding to the extent that a Localized idea, situation, environment, or action must be established as a foundation, and then a secondary idea, situation, environment, or action is built upon that foundation and shown to have an Indirect Effect upon the Student, which in turn, seemingly Localizes that idea, situation, environment or action.

Universalization: *The elevation of a idea, situation, environment, and/or action to an all encompassing level; showing that an idea, situation, environment, and/or action effects all.*

Universalization is the final step outward from the student in terms of actual relevance towards the Student. Ideas, situations, environments, and actions that are

considered universal or all-encompassing, tend to be the most easily confused and most abstract. In order to allow for Student understanding, these ideas, situations, environments and/or actions must be made somehow relevant. The act of Universalization is an attempt to do just that by showing that the Universalized influence has as close as a tertiary relevance upon the Student and an Indirect Effect upon him or her in many ways, as well as having an Indirect Effect upon others similarly. Further explanation as well as examples will be given later in this essay.

Stages of Informational Processing within Students:

The other discipline discussed in this thinking skills model will be Informational Processing within Students. This discipline addresses the stages or levels of informational processing that take place inside of the Student. In essence, these stages describe the extent to which a Student is able to process information from Influences. The three stages within this discipline- Perceptualization, Rationalization, and Conceptualization- are defined below and further explained later in this essay.

Perceptualization: *The taking in of concrete, local information by the use of ones senses- touch, sight, hearing, smell, taste- as to gain a personal perspective of reality; a personal interaction with an idea, situation, environment, or action.*

Perceptualization is the processing of first-hand information, or information that the Student gained through a personal interaction with an influence. This is most often a

result of interaction with the Environment, but can sometimes stem from interaction with an idea, situation or action.

Rationalization: *The connecting of two or more influences- ideas, environments, situations, and/or actions- to each other within the Intellectual State.*

This stage or level of informational processing is associated strictly with the Intellectual State. At this level of informational processing gathered data (information taken in through Perceptualization of influences) is then sorted and connected to other ideas, environments, situations, and/or actions in order to identify a relevance of the information to the student. This level of Informational processing must be achieved before Globalization can take place.

Conceptualization: *The Intellectual or Spiritual addressing of an abstract, detached idea, situation or action; to study broadly the underlying or overarching principles or implications of an idea, situation or action.*

By the definition, this stage or level of Informational Processing no longer deals with the tangible Environment, but instead deals with theoretical causes or implications of the intangible Influences: ideas, situations, and some actions. This is the highest level of informational processing and deals with synthesis of influences; analysis of influences, both tangible and intangible; formation of probable Direct and Indirect Effects of these

influences upon the student and others; and investigation and application of these probabilities Locally, Globally, and on to Universally.

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Chart references are taken from the indicated websites.