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Teacher education for undergraduates

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Teacher Education for Undergraduates

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ABSTRACT

This is a capstone research project to assess the effectiveness of a bachelor's degree in the Social and Behavioral Sciences (SBS) in preparing the undergraduate student to become an elementary school teacher. I will be assessing the course pathways in comparison to scholarly research in the field of teacher preparation education. I will be using both Grounded Theory, an inductive theory composed from a wide selection of data, and Bloom's Taxonomy of Learning to review the literature. The methodology I will be using is a composition of research and creation of curriculum. This is geared toward answering my research question of what is the most effective and efficient undergraduate education a student can receive in order to be a proficient teacher. Using the information I have gathered, I will create a Social and Behavioral Sciences undergraduate pathway for future elementary school teachers for California State University Monterey Bay (CSUMB).

INTRODUCTION

The California Department of Education has stated four points as their “belief and purpose” in the 2009 Educational Resources Catalog:

- “- We believe that the public school system must meet the comprehensive learning needs of each student to reach high expectations.
- Equity of access to quality public education is the right of every student and the responsibility of the State of California.
- The core purpose of the California Department of Education is to lead and support the continuous improvement of student achievement, with a specific focus on closing achievement gaps.
- California Department of Education...providing leadership for strong schools and equitable outcomes for ALL students!”¹

The Department of Education generates these and more explicit standards in which the elementary school staff, namely the teachers, who have the most direct contact and interaction with the students, must uphold. Current teachers and future educators need to be well rehearsed and able to maintain and advocate for these expectations or risk being unemployed.

The acquisition of such knowledge for these goals does not begin as the student is obtaining their teaching credentials, but instead as an undergraduate student. Before entering a professional program, future teachers must acquire a strong base of knowledge in order to pass state required tests such as the California Subject Examinations for Teachers (CSET) and the California Basic Educational Skills Test (CBEST).

¹ California Department of Education, *2009 Educational Resources Catalog*, <http://www.cde.ca.gov/re/pn/rc/documents/catalog2009.pdf> (accessed October 11, 2009).

Based on this knowledge, I will attempt to answer the question, what is the most effective education an undergraduate student can receive in order to prepare him/her to be an elementary school teacher? In greater depth, I will be reviewing a brief history of teacher education as well as past and current scholars' research on undergraduate education and its influence and ties to students' professional career in primary education. Based on scholarly research, I will be reviewing California State University's Monterey Bay SBS curriculum pathway, subsequently, making it more effective for students who wish to become elementary school teachers while meeting the university and major requirements in order to graduate with a degree in SBS.

The personal significance of my research is to reflect upon my own educational experience in SBS which met my desire to expand and deepen my knowledge, while looking toward my future considering possible gaps in knowledge and experience which may have not been addressed within my undergraduate education. My research is not solely a reflection, but also a body of work aimed at offering future undergraduates a collected set of knowledge that they may utilize on their quest for a bachelor's degree and a base for professional knowledge.

If the scholarly research supports the contention that SBS content knowledge is aligned primarily with the content knowledge needed by teachers, then the pathway I create will offer students an alternate approach to the traditional Liberal Arts education which is generally chosen by students who wish to enter the profession of education. This difference in training will be apparent in the classroom and offer a new range and body of thought for teachers of quality to emerge from. A new way of looking at the mandated information by the teacher may cater to elementary school children's learning needs in a different way than presently met by current teachers. Based on a compilation of personal experience and scholarly research, I will be able to speak intelligibly about a possible education route for future teachers. Also, a curricular pathway

based on scholarly research will serve students and enable them to thrive while becoming teachers as well as offering a new body of thought from which to gather knowledge.

In order to effectively answer my research question, I have additional questions to answer. First, what is the current scholarly research on undergraduate education for future teachers? What are they expected to know? Why is this information important? Is content important or is learning how to teach the content important at this time? Does the Social and Behavioral Sciences education meet these needs? If yes, how so? If not, what is missing? Answering these questions will give a more directed and in depth exploration of the undergraduate school teacher education.

Data is comprised of both primary studies of reputable groups such as the Holmes partnership, and secondary sources. My *Literature Review* section will display primary and secondary sources from scholars reputable in the field of education. After the information has been presented, an interpretation of a compilation of the material will be offered. In addition, personal experience will give further insight to the matter.

I will interpret the issue of undergraduate teacher education, as discussed in the *Literature Review*, based on two theories one from the discipline of the Social and Behavioral Sciences, Grounded Theory, and one from the discipline of Education, Bloom's Taxonomy of Education. I will explain the basis of each theory separately and then address its relation to undergraduate teacher education. I have chosen different discipline's theories to show that each discipline will address the issue in its own manner consistent with its disciplines mantra. By intertwining and merging the possibilities yielded by the theories, a more viable solution may be created than when only examining a single discipline's outcomes.

In the section entitled *Methodology*, I will offer a basis for understanding why I chose the authors referred to in my Literature Review as well as why I chose Grounded Theory and Bloom's Taxonomy of Education to interpret undergraduate teacher education's composition. Also in this section, I will offer definitions as well as provide a framework of how I collected my data. I will be conducting analysis at a national level, but acknowledging special relation to California in which information is available. I will be considering these two levels because they are most applicable to my situation and the situation of California State University Monterey Bay students who will be using the undergraduate pathway.

LITERATURE REVIEW

This section reviews available literature on teacher education at the undergraduate level. I will present one of the leading issues in current undergraduate teacher education. This argument relates to the acquirement of content knowledge and pedagogical knowledge in the future teacher's education. Finally, I will discuss what scholars have revealed to be necessary courses to form content knowledge.

In current day, one of scholars leading concerns with teacher education both at the undergraduate and professional levels are subject matter preparation and acquirement of pedagogical knowledge (I will only be focusing on these two elements in concerns to undergraduate education, and only referencing professional teacher education when necessary). This issue may be of great concern because the art of teaching is comprised of the learning of information and the relaying of said information to up and coming generations. Universally, scholars agree that both subject content knowledge and pedagogical knowledge are vital in

teacher preparation. However, within these two necessities, scholars tend to have differences of timing, order, and the consistency of these two requirements.

Issues with Teacher Education

Primary schools are abundant with problems and complaints from parents, staff, community members, etc. Many of these problems such as funding, hours, curriculum, and healthy eating options are beyond the control of teachers, but teachers are able to affect particular dimensions of students learning. Because teachers closely work with students and affect their learning they often become a target for accusation of students' lack of mastery in academic disciplines. Holmes Group identified issues directed at teachers: "Most (problems of public education) are aimed at teachers: Institute merit pay; eliminate teacher education; test teachers to make sure they know eighth grade facts."² Robert Roth and Chris Pipho reference Johnson-Moore and Nelson's work. which more equally questions who should be blamed for the inadequacy of the public school system, and what it means to simply let the blame rest with finding no solution. They stated, "Shall we find fault—students, teachers, television, family dislocation? Shall we wistfully hearken back to the way schools used to be then give up? Blaming and complaining, however emotionally satisfying, will not confront the insistent issue: the future of our public schools. As in previous generations, the public schools are our future."³ Often issues in teacher education are overlooked by political figures, and some scholars, in favor of examining primary and secondary schools and their set backs. However, if only the products of the teachers' education are examined, the primary and secondary schools, the root of the issue

² Holmes Group, *The Holmes Partnership trilogy : Tomorrow's teachers, Tomorrow's schools, Tomorrow's schools of education* (New York: Peter Lang, 2007), 9.

³ Robert A. Roth and Chris Pipho, "Teacher Education Standards," in *Handbook of Research on Teacher Education: A Project of the Association of Teacher Educators*, ed. W. Robert Houston, Martin Haberman, and John Sikula (New York: Macmillan Publishing Company, 1990), 121.

the teacher's education is ignored. Holmes Group examines overarching issues that plague undergraduate students desiring to go into the profession of teaching such as badly taught courses in a variety of departments, weak pedagogy, preoccupation with intent focus on getting through the material, and an over concern with multiple-choice tests.⁴

Subject Content Knowledge and Pedagogy

The perspectives on subject content matter and pedagogy are concerned with knowledge and delivery of that information. Subject content knowledge directly refers to subjects of which teachers should have a sufficient understanding because they will be relaying this information to students. Elementary school teachers may be the first to ever present particular topics in mathematics, science, language arts, and history to these young minds. The information presented will be the building blocks which students build, mold, and renovate new information throughout their education and experiences. The manner in which educators teach, deliver, or present these subjects to students is pedagogy. Therefore, subject content matter and pedagogical knowledge are closely tied. Because these are the fundamentals of the teaching profession scholars have developed research on the two subjects both separate and related to each other. Solely within the acquisition of subject matter, there are two arguments. One argument is in favor of having an undergraduate education dedicated to an in depth study of a single subject matter. The alternative idea is to have a comprehensive undergraduate education of multiple subjects.

The Holmes Group claims that undergraduate education for teachers needs to be focused in a particular area of study; however, Robert Roth and Chris Piphio offer a counter argument on that approach. The Holmes Group suggests a restructuring of the format of undergraduate

⁴ Holmes Group. (2007), 11.

education. They suggest universities “organize academic course requirements and courses so that undergraduate students can gain a sense of the intellectual structure and boundaries of their disciplines, rather than taking a series of disjointed, prematurely specialized fragments.”⁵ An in depth structured approach to a particular field of study would help students to have a firm grasp on the material they would be teaching students. With the amount of time and dedication to a certain discipline, Holmes Group second recommendation follows that teachers should only offer education in fields in which they have a major or minor.⁶ By gaining a thorough understanding of a particular discipline, Holmes Group assumes that “Knowing the subject one is to teach in depth will make one a better teacher.”⁷ However Robert Roth and Chris Piphio offer a rebuttal to this general assumption. They claim, “Depending on what means by depth, there is little evidence to support this assertion. Teacher grade point average or number of courses taken in the subject taught do not appear to correlate with student performance on standardized tests—except in advanced high school classes.”⁸ Both these perspectives contain valid arguments. Qualified instructors who teach educators well should have all the necessary tools in that discipline to be effective teachers; however, it appears that, solely because a teacher has a personal mastery of a discipline, does not translate into their ability to educate students on the matter.

The alternative to having an in depth education in a single subject matter is to have a broader understanding of a variety of subjects. Because elementary school teachers do not solely teach a single subject scholars supporting depth in content knowledge may argue that these particular educators need to have an academic relationship with each of these different classes. Mary Kennedy speculates if the breadth of knowledge in subjects is reached then “what to do at

⁵ Holmes. (2007), 19.

⁶ Holmes. (2007), 15

⁷ Roth. (1990), 120.

⁸ Roth. (1990), 120.

any given moment should be obvious from the situation.”⁹ If a teacher is not familiar with a variety of subjects in which he/she is teaching, then it will not be obvious how to handle different situations that arise with students who have unique learning needs, or simply do not understand the material in the way a teacher presents it.

Using a different lens Darling-Hammond Arthur E. Wise, and Stephen P. Klein see the need for a teacher’s education because there are alternatives methods in becoming a teacher in which the breadth of the classroom experience can be avoided. They state, “professional teaching is undermined by alternatives [to licensing] that avoid preparation for teachers because the defining characteristics of a profession are that it is knowledge-based and client oriented—that is, committed to using the best available knowledge on behalf of the clients who are served.”¹⁰ This perspective indicates that knowledge of subjects is necessary because the occupation of teaching is based on two standards: knowledge and the imparting of knowledge to developing minds.

However, an education spanning many disciplines will forfeit in depth analysis of any one of these subjects. Pamela Grossman Alan Schoenfeld, and Carol Lee, suggest,

Although a smattering of survey courses across the liberal arts might convey some of the necessary content for elementary teaching, such an approach is unlikely to help prospective teachers develop the ways of thinking within any particular discipline; such a survey would provide a rhetoric of conclusions rather

⁹ Mary M. Kennedy, "The Role of Pre-service Teacher Education," in *Teaching as the Learning Profession: Handbook of Policy and Practice*, ed. Linda Darling-Hammond and Gary Sykes (San Francisco: Jossey-Bass, 1999), 54.

¹⁰ Linda Darling-Hammond, Arthur E. Wise, and Stephen P. Klein, *A License to Teach: Building a Profession for the 21st-Century Schools* (San Francisco: Westview Press, 1995), 16.

than a rhetoric of inquiry.¹¹

Grossman, et al suggests that both, a deep and wide understanding of material, are necessary for teachers' subject content knowledge: "We argue, then, for both depth and breadth of subject matter preparation—depth in a particular content area that is related to the elementary curriculum and breadth across the liberal arts."¹² This may be ideal for subject content knowledge acquisition because it infers a production of teachers who have a well-rounded thoroughly recognized grasp of the academic subjects they will be teaching to students. But as Roth and Piphio earlier stated, though teachers have a personal in depth understanding in a particular subject or even a variety of subjects there is no guarantee they will be able to adequately explain this knowledge to students.

Assuming the teacher has breadth and depth of subject content knowledge, the manner in which it is presented to students is pedagogy. In order to create strong pedagogy, the Holmes Group suggests a revamping of the undergraduate system that has professors with well-developed pedagogies, "so that future teachers can study the subjects they will teach with instructors who model fine teaching and who understand the pedagogy of their material."¹³ By learning from pedagogically proficient instructors, future teachers will have good models of reference for their own teaching.

The hallmark factor of subject content knowledge and pedagogy is that they are part of a combined effort. Both are simultaneously necessary for students to learn. However, universities do not necessarily construct courses based and building on a combination of subject content knowledge and strong pedagogy. For this reason Holmes Group speaks of a change that is

¹¹ Pamela Grossman, Alan Schoenfeld, and Carol Lee, "Teaching Subject Matter," in *Preparing Teachers for a Changing World*, ed. Linda Darling-Hammond and John Bransford (San Francisco: Jossey-Bass, 2005), 230.

¹² Grossman et al. (2005), 230.

¹³ Holmes. (2007), 19.

conducive to a positive change in both subject content knowledge and pedagogy: “Instead of our (departments of education) present (time) sprawling and often scattered courses of study, we need to devise coherent programs that will support the advanced studies in pedagogy required for solid professional education.”¹⁴ This suggestion for coherence in subject content matter will allow for strong pedagogy to emerge and thrive. If teachers achieved content knowledge and developed pedagogy, positive correlations occur in students’ performance in particular subjects. Darling-Hammond et al, “The importance for teacher effectiveness of preparation in both education and subject-matter courses shows up strongly in a number of specific fields that have been studied, including science, mathematics, and vocational education.”¹⁵ Knowing studies yield this correlation, further support is awarded to the development of both subject content knowledge and pedagogy in teachers. The correlation between teachers’ preparedness in subject content knowledge and pedagogy with the subjects of math, science, and vocational studies provides insight to student success in those subjects; however, other studies at the elementary level such as language arts and history have not yielded the same correlation.

Current Teacher Education Needs

Within the framework of subject content knowledge and pedagogical knowledge scholars offer more specific suggestions. These suggestions include ideas that need be obtained and classes that should be taken at the undergraduate level. The Holmes Group offers a solid yet obvious suggestion for all future teachers. It states, “Teachers must have a greater command of academic subjects and of the skills to teach them. They also need to become more thoughtful students of teaching, and its improvement.”¹⁶ The first half of their statement reaffirms the need for strong subject content knowledge in multiple disciplines addressed at the elementary school

¹⁴ Holmes. (2007), 19.

¹⁵ Darling-Hammod. et al, (1995), 19.

¹⁶ Holmes. (2007), 10.

level. There is also a call for a strong pedagogy in these subjects. In addition to content and pedagogical knowledge, they call for thought which I believe refers to reflection on how to improve their profession and remain up to date with the new developments in their field of study.

Through extensive research made recommendations for reform directly intended to change the traditional undergraduate pathway for future teachers, known as liberal education. Because of their belief in a strong development of subject content knowledge and pedagogical knowledge they suggest every undergraduate future teacher have a complete academic major in addition to a liberal studies education.¹⁷ Next, they recommend, “Organize academic course requirements so that undergraduate students can understand the intellectual structure of their discipline.”¹⁸ This will allow for the depth of knowledge within the discipline. They not only address the need for learning a particular discipline in depth but also gaining pedagogical competency that should be built along side the content knowledge. Holmes Group further suggests, “revise educational studies to focus on the study of schooling as an academic field; knowledge of the pedagogy of subject matter; the skills and understandings implicit in classroom teaching; dispositions, values, and ethics of education.”¹⁹

Directly relating to improving the liberal studies education and focusing on a The Holmes Group offers suggestions on improving the liberal studies education, but they also make a strong suggestion of each undergraduate having an additional major, or area of study. In addition to recommending changes in the liberal arts education and suggesting undergraduates have a major outside of liberal studies, some scholars offer suggestions of particular classes or ideas students should meet within the discipline study of choice. Holmes Group suggests a

¹⁷ Holmes. (2007), 113.

¹⁸ Holmes. (2007), 113.

¹⁹ Holmes. (2007), 113.

methods course that is based on academic research, clinical studies and practice.²⁰ Mary Kennedy speculates that “perhaps a child psychology course or ‘research on teaching’” may be of some value.²¹ Suggesting a child psychology course is not suggesting the undergraduate chooses Psychology as their academic discipline, but instead taking a course in child psychology to add to the breadth of subject knowledge. An additional benefit to taking a child psychology course is to gain insight into how a child’s mind gains, stores, and retrieves information. Ladson-Billings as well as Martin and Koppelman both indicate a need for future teachers to have a human relations course or training in diversity, social justice, and equity²² The suggestions offered by scholars include courses both within the academic discipline of choice such as a research methods course and a course addressing diversity, social justice, and equity. However, courses outside of the chosen major such as a course in child psychology may also be useful in creating a well-rounded undergraduate education.

An alternative to an undergraduate education of both breadth and depth across disciplines is to concentrate the undergraduate education to only courses of primary importance. In current times, the two predominate subjects of importance according to the state of California are literacy and mathematics. Pamela Grossman, et al indicate a mentality supporting this position, Teacher education could then provide greater attention to these two areas, helping prospective elementary teachers develop pedagogical content knowledge, including deep understanding of content standards and grade band curricula, and

²⁰ Holmes. (2007), 20.

²¹ Kennedy. (1999), 54.

²²Ladson-Billings. (1991), 94-95. & Renee Jeanne Martin and Kent Koppelman, "The Impact of a Human Relations/Multicultural Education Course on the Attitudes of Prospective Teachers." *Journal of Intergroup Relations* 18:1 (Spring 1991).

familiarity with students' common understanding and misunderstandings in these two content areas.²³

Since grade school students are expected to perform well in the subjects of literacy and mathematics at their different grade school levels, then, based on this frame of mind, it is better to prepare teachers in the subject content and pedagogical knowledge of these subjects

In order to maintain understanding in other subjects, Grossman. et al continue to suggest that "Teacher education could continue to provide opportunities to learn to teach science, social studies, and the arts; following an introduction to these content areas, prospective teachers then might choose to specialize within one of these areas."²⁴ To initiate these changes in the undergraduate curriculum, "cooperation is needed from the departments of, humanities, sciences, social sciences, and education."²⁵ This suggestion may be interpreted in choosing the undergraduate discipline of mathematics or literature while supplementing courses in science, social studies, and the arts, but what differs in the connotation of this suggestion from that of the afore mentioned scholars is "teaching to the test." Undergraduate students are concentrating their efforts on preparing themselves to teach the subjects on elementary school students' state tests. This occurs rather than the undergraduate forming a personal understanding of the concepts and teaching them based on those means.

THEORY

A way to explore the issues with undergraduate education is to review theories that can provide a diverse insight of solutions for the problem. This section will discuss two theories, Grounded Theory and Bloom's Taxonomy of Education, pertinent to deciphering the literature

²³ Grossman et al. (2005), 231.

²⁴ Grossman et al. (2005), 231.

²⁵ Holmes. (2007), 20.

on undergraduate education for future teachers. The two different theories, the first from the Social and Behavioral Sciences and the second from the field of Education will offer lenses for viewing the issue of constructing an undergraduate education. In this section, I will present the individual theory; then, I will relate the theory to undergraduate teacher preparation.

Anselm Strauss and Barney Glaser pioneered my initial theory of choice, Grounded Theory. Generally speaking, Grounded Theory uses a qualitative approach; Michael Quinn Patton defined qualitative data as “detailed descriptions of situations, events, people, interactions, observed behaviors, direct quotations from people about their experiences, attitudes, beliefs and thoughts and excerpts or entire passages from documents, correspondence, records, and case histories.”²⁶ In addition to being qualitative in nature, Grounded Theory takes an inductive approach. Inductive theories begin with specific facts working toward a more general conclusion; this contrasts deductive theories which begin with a broader base of fact that are whittled into a specific theory. These two components make it a unique methodology and theory when contrasted with other theories that are often deductive such as those arrived at based on the scientific method. Another interesting aspect of Grounded Theory is that the theory and methodology are interwoven. As the methodology begins so does the theory and as the methodology yields new and varying information the theory adapts.

Before I explain the components of Grounded Theory, it may be helpful to have background on its original founders. The two theorists who originally constructed Grounded Theory as a methodology and theory are Anselm Strauss and Barney Glaser. Strauss studied at the University of Chicago, a school deeply committed to qualitative research. This background coupled with the influence of men such as Robert E. Park, W. I. Thomas, John Dewey, G. H.

²⁶ Michael Quinn Patton, *Qualitative Evaluation and Research Methods*, 2nd ed. (Newbury Park, CA: Sage Publications, 1990), 22.

Mead, Everett Hughes, and Herbert Blumer influenced him.²⁷ In conjunction with his educational history, and the men who inspired him, he brought forth the following elements that contributed to the existing scholarly body of literature on theory:

- (a) the need to get out into the field, if one wants to understand what is going on;
- (b) the importance of theory, grounded in reality, to the development of a discipline;
- (c) the nature of experience and undergoing as continually evolving;
- (d) the active role of persons in shaping the worlds they live in;
- (e) an emphasis on change and process, and the variability and complexity of life; and
- (f) the interrelationships among conditions, meaning, and action.²⁸

His experiences, mentors, education, and way of thinking are visible in Grounded Theory.

University of Chicago was rooted in qualitative research; Grounded Theory's methodology is qualitative. The points mentioned above represent aspects of the steps in Grounded Theory including observation, experiment, and research repeated continually. These three steps require the researcher to be in the field observing the phenomenon on multiple occasions with increasing knowledge on the subject from experiment and research. The second theorist that contributed to the formation of Grounded Theory is Barney Glaser, trained at Columbia University. A strong influence in his studies was Paul Lazarsfeld, known as an innovator of quantitative methods²⁹

The hallmark of Grounded Theory as both a methodology and a theory is its fundamental development from the ground. William Trochim, states "The self-defined purpose of Grounded Theory is to develop theory about a phenomena of interest... Instead the theory needs to be

²⁷ Strauss. (1990). 24.

²⁸ Strauss. (1990). 24-25.

²⁹ Strauss. (1990).25

grounded or rooted in observation; hence the term.”³⁰ Because Grounded Theory is generated based on actual data collected, contrasting theories stylistically differ because they are developed conceptually then tested against empirical data.³¹

Anslem Strauss and Barney Glaser constructed Grounded Theory of three continually repeating steps. The initial step to Grounded Theory methodology is observation. In this step, “The observers enter the research situation with no hypothesis. They describe what goes on and from the observational data they develop a hypothesis.”³² After observation and the development of a hypothesis, “grounded theorists simultaneously address the process of research and the product of research; they are inseparable. As information emerges from the data, it is put into an original theoretical framework.”³³ The second step encompasses research, experimentation, and data collection all tied into a working theory. To check the researchers developing theory, “They ‘check their developing ideas with further specific observation’ and may do additional observations in other settings or on other issues.”³⁴ The theorists can continuously refine the theory in progress by means of observation, experiment, and research; this keeps the theory current and updated pertaining to present times. In the case of undergraduate teacher education, the researcher may have observed a lack of prepared teachers. From that, the researcher may have conducted surveys on teachers asking about their own educational experience. The results may have yielded the undergraduate education of the teacher as a reoccurring theme. Based on the experiment, the research may wish to consult text on the undergraduate teacher education and suggestions for the contents of teacher education. The researcher would then continue

³⁰ William M. K. Trochim, "Qualitative and Unobtrusive Measures," in *The Research Methods Knowledge Base*, 2nd ed. (Cincinnati, OH: Cornell University, 2001), 160.

³¹ Joseph A. Maxwell, *Qualitative Research Design: an Interactive Approach* (Thousand Oaks :Sage Publications, 1996), 33.

³² Isadore Newman and Carolyn R. Benz, *Qualitative-Quantitative Research Methodology: Exploring the Interactive Continuum* (Carbondale: Southern Illinois University Press, 1998), 61.

³³ Newman. (1998), 61.

³⁴ Newman. (1998), 61.

observation, experiment, and research. The question soon arises when is Grounded Theory methodology complete? The answer, there is no distinct end to Grounded Theory. William Trochim states, “Grounded Theory doesn’t have a clearly demarcated point for ending a study.”³⁵ When a theorist utilizing Grounded Theory reaches a point of completion, he/she will have gained, according to William Trochim, “presumably, an extremely well-considered explanation for some phenomenon of interest—the Grounded Theory”³⁶

Based on the instruction of Grounded Theory’s founders, there are outcomes a Grounded Theory must meet. Once the methodology of observation, research, and data collection have been constructed and repeated, a Grounded Theory emerges and is composed of four central criteria. According to Anselm Strauss and Juliet Corbin the four criteria are, “fit, understanding, generality, and control.”³⁷ According to Anselm Strauss and Juliet Corbin, “The purpose of Grounded Theory method is to build theory that is faithful to and illuminates the area under study.”³⁸ As long as the theorists formulate the theory based on the four principles in the criteria, any number of theorists may use the criteria and apply it to their disciplines.

If the Grounded Theory under construction follows Grounded Theory methodology than the Grounded Theory in itself should address the four criteria: fit, understanding, generality, and control. I will now define and explain each of these, in order to create a thorough understanding of Grounded Theory. The first criteria: fit requires, “If theory is faithful to the everyday reality of the substantive area and carefully induced from diverse data, then it should fit that substantive area.”³⁹ This means, if the theory is valid and reliable, as the authors of theories strive to make

³⁵ Trochim. (2001), 160.

³⁶ Trochim. (2001), 160.

³⁷ Anselm L. Strauss and Juliet M. Corbin, *Basics of qualitative research : grounded theory procedures and techniques* (Newbury Park: Sage, 1990), 23.

³⁸ Strauss et al. (1990), 24.

³⁹ Strauss. (1990). 24.

them. Then the data collected will fit in relation to other data collected in the discipline. If the data does not correlate, then the author may need to reconsider their hypothesis and conduct more observation and research on the subject. The second criterion is understanding or comprehension. The Grounded Theory constructed should be comprehended by those who practice in the discipline or are knowledgeable about the discipline of the Grounded Theory.⁴⁰ The third necessity to the composition of Grounded Theory is generality. The theory meets this “if the data upon which it is based are comprehensive and the interpretations conceptual and broad, then the theory should be abstract enough and include sufficient variation to make it applicable to a variety of contexts related to that phenomenon.”⁴¹

Finally, Grounded Theory must illicit control in relation to the action within the phenomenon.⁴² This means the theory must foresee the outcome of the phenomenon; the phenomenon must occur systematically, or to the point in which the Grounded Theory correctly identifies or can interpret the outcome. This final step justifies Grounded Theory as a theory not solely a methodology. George Ritzer defines theory as “a set of interrelated ideas that allow for the systematization of knowledge of the social world, the explanation of that world, and predictions about the future of the social world.”⁴³ Even though Grounded Theory differs from most theories because it is inductive and qualitative, it still adheres to the constraints set by the definition of theory.

With an understanding of Grounded Theory and its components, I will now relate it to undergraduate teacher education. Grounded Theory applies to undergraduate education for future teachers in the sense that there is a general outrage about the quality of teachers in elementary

⁴⁰ Strauss. (1990). 23.

⁴¹ Strauss. (1990). 23.

⁴² Strauss. (1990). 23.

⁴³ George Ritzer, *Contemporary Sociological Theory and Its Classical Roots: The Basics* (New York: McGraw-Hill, 2007), 5.

schools. This is due to students poor test scores which are supposed to reflect students' academic abilities. One possible reason for the teachers' inability to meet the par of excellence expected by scholars that ensures students perform well on state tests is their undergraduate education is not a sufficient foundation for their professional career. Though scholars discuss it, a wider public including parents, administration, the state, and fellow teachers complains about it. This is important because there is a widely recognized failure in the educational system; however, no solution has successfully been carried out to appease the general outcry or to increase students' test scores. What is lacking is the control because there is little information comparing teachers of varying undergraduate degrees to teachers with an undergraduate degree in the Liberal Arts which is the traditional undergraduate major of teachers. These all operate under the context of observation and research. I have observed elementary school environments, spoken with teachers and parents, have seen reports, discussed the situation with my peers, and have researched literature on the situation. Based on this information I could begin to construct a Grounded Theory on the matter. Yet, this is a weak beginning to constructing a Grounded Theory on undergraduate education because I have yet to explicitly or systematically defined the issue, nor have I concisely analyzed the data.

A deductive theory, operating within the discipline of education, Bloom's Taxonomy of Education (For a visual of Bloom's Taxonomy, see Appendix, Figure 1) offers an alterative theoretical framework in which to understand undergraduate education of teachers. Bloom's Taxonomy is used to provide educators with a systematic classification of the process of thinking and learning.⁴⁴

⁴⁴ Mary Forehand, "Bloom's Taxonomy Original and Refined," *Ebook: Learning, Teaching and Technology* (2005): 4, <http://eit.tamu.edu/jj/DE/BloomsTaxonomy.pdf> (accessed December 01, 2009).

Bloom's Taxonomy takes on the form of a six stepped pyramid. The bottom of the pyramid is the basis of growth; each ascending portion of the pyramid may only be realized by students once the steps below have been mastered. The cornerstone on which the rest of the pyramid lays is knowledge. Building upon knowledge is comprehension, above this is application, then analysis, after synthesis, and finally, at the top of the pyramid, evaluation.⁴⁵ The order of these steps is important and must be completed in this order from bottom (knowledge) to top (evaluation). I will now discuss each step in depth and express how these steps build upon each other. At the base of the pyramid shaped taxonomy is knowledge. M. Francis Reeves calls knowledge, "a personal data base or file which students can recognize or recall" all the other elements in the taxonomy are built.⁴⁶ In the taxonomy, knowledge is "rote memory ranging all the way from recalling specific facts to abstract patterns and theories."⁴⁷ Knowledge is a basic understanding of the subject matter as it appears and is presented.

Benjamin Bloom, Engelhart, M. D., Furst, E. J. Hill, W. H., & Krathwohl, D. R. place comprehension directly above knowledge. Comprehension is defined by meaningful-integrated learning. In this step, "students make the given information part of their own frame of reference and are able to solve problems similar to those studied in the class. At this lowest level of understanding they show evidence of knowing what is communicated and are able to make some limited use of it."⁴⁸ Students are now capable of doing more than simply repeating what they learned in the knowledge facet of learning. They are now able to address issues that resemble,

⁴⁵Benjamin S. Bloom, (Ed.), Engelhart, M. D., Furst, E. J. Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 1: Cognitive Domain*. New York: David McKay

⁴⁶ M. Francis Reeves, "An Application of Bloom's Taxonomy to the Teaching of Business Ethics," *Journal of Business Ethics* 9, no. 7 (July 1990): 610, <http://www.jstor.org/stable/25072076> (accessed November 3, 2009).

⁴⁷ Reeves. (1990), 610.

⁴⁸ Reeves. (1990), 610.

yet are not identical to, the original problem. Students may begin to use basic jargon of the subject matter.

Comprehension is composed of three stages: translation, interpretation, and extrapolation. Translation occurs “when students can integrate abstract material into their own ordinary language without the loss of the essential meaning.”⁴⁹ Building on translation, individuals reach interpretation when they are able to provide an outline or overview affixed in their personal experience; they are able to see the whole picture and how some aspects relate.⁵⁰ Individuals are able to see the idea as a displayed whole; they are also able to see some links that comprise the whole idea. In the third stage of comprehension, extrapolation, students’ acquire abilities to predict probable consequences or trends; by doing this, students display awareness of value judgments and their possible influence on predictions.⁵¹ As seen by Bloom et al, comprehension is the object of predominant focus emphasized in schools and colleges.⁵² These first two levels, knowledge and comprehension, are thought by M. Francis Reeves to be of lower-order. Not only because these are the base of the scaffolding process but because of their possible adverse affects, “...the research indicates that lower-order questions (i.e., knowledge or comprehension level on the Bloom et al taxonomy) facilitate intentional learning at the expense of incidental learning.”⁵³

In contrast to the lower order tasks, the next four levels (application, analysis, synthesis, and evaluation) are higher level and grouped together by critical or creative thinking, insight, or problem solving.⁵⁴ Application houses abstract empirical generalizations and scientific rules for

⁴⁹ Reeves. (1990), 610.

⁵⁰ Reeves. (1990), 610.

⁵¹ Reeves. (1990), 611.

⁵² Reeves. (1990), 610.

⁵³ Reeves. (1990), 112.

⁵⁴ Reeves. (1990), 611.

procedure.⁵⁵ It “includes the use of abstractions and theories to solve new problematic situations or to find new slants to old problems.”⁵⁶ Application is demonstrated when students are able to reorganize the material into a familiar setting then successfully solve it. Because application is scaffolded upon knowledge and comprehension, both knowledge and comprehension are needed for a individuals to make use of application.

Students can encounter an unfamiliar problem; restructure it from their fund of knowledge (rote memory knowledge) into a familiar context or classification (comprehension). Then they can solve the problem by selecting or creating and applying appropriate theoretical material. The application may not be correct, but practice makes perfect.⁵⁷

Application is the predecessor to analysis. “Bloom et al thinks of analysis as various means to breakdown the theoretical material into parts and to consider their relationships and organizational structure.”⁵⁸ At the level of analysis, Bloom feels the individuals understand the material well enough to be compartmentalized in a molecular fashion, or the whole is able to be segregated and broken into smaller pieces; from this understanding, relationships between parts individuals organized and structure emerges. Bloom et al stresses three aspects of analysis. In the first, “there is the analysis of the ‘elements.’ This involves recognizing unstated assumptions, distinguishing factual from valuative statements, identifying motives of persons and groups, and separating conclusions from supporting evidence.”⁵⁹ The individual recognizes and understands abstract, non-concrete, ideas. At this time the individual’s biases play a role and can be distinguish between positive and normative claims. The second key understanding of analysis is

⁵⁵ Reeves. (1990), 611.

⁵⁶ Reeves. (1990), 611.

⁵⁷ Reeves. (1990), 611.

⁵⁸ Reeves. (1990), 612.

⁵⁹ Reeves. (1990), 612.

about relationships including consistency, causality, logical fallacies, and relevancy.⁶⁰ The third feature demonstrated in the use of analysis is one's ability to manage ideologies, points of view, and the structure or arguments. These components make up what is known as "organizational principles."⁶¹ Analysis is the first in the taxonomy to address abstract thought and draw from critical thinking skills.

Ascending Bloom's Taxonomy, synthesis builds on critical thought by combining the previously learned techniques into an integrated whole. At this point, assessment is of student's creative abilities to make the whole, the entire concept, more than the sum of its parts.⁶² From the previous steps, the parts have been established and developed by the student's and teachers; at the synthesis level, the learner fills the gaps linking these notions based on his/her personal experience and understanding. M. Francis Reeves indicates "an important part of synthesis includes a "unique communication" that produces "a plan or proposed set of operations."⁶³

At the peak of the taxonomy resides evaluation. At this stage the student has acquired knowledge, comprehension, application, analysis, and synthesis, and he/she is expected to have a firm grasp of the components of the subject matter, both the concrete facts as well as the biases, values, and assumptions associated with it. The student should also be able to distinguish between these. Bloom provides a simple definition of evaluation, "making a judgment about the value or worth of something."⁶⁴ Students understand the concept well enough to give it worth in their own minds and by their own values. Because they have reached the level of evaluation they should also recognize that these are their personal values imposed on the subject which may differ from another person's values. However, because people cannot refrain from surface level

⁶⁰ Reeves. (1990), 612.

⁶¹ Reeves. (1990), 612.

⁶² Reeves. (1990), 612.

⁶³ Reeves. (1990), 613.

⁶⁴ Reeves. (1990), 613.

evaluation, Bloom acknowledges these as “common evaluations” and deemed them opinions rather than judgments; judgments or evaluations as in the taxonomy are grouped differently because they are educated and conscious judgments.⁶⁵

The four higher-levels of learning (application, analysis, synthesis, and evaluation) contrast with the two lower levels of learning (knowledge and comprehension) because they improve intentional learning, but do not have any negative impact on learning occurring incidentally.⁶⁶ This is one of the reasons application, analysis, synthesis, and evaluation constitute as higher- levels of learning. However, teachers and students cannot dismiss knowledge and comprehension because they are of lower-order thinking. These two are a necessary foundation on which the student builds and develops their higher-order skills.

At each level of education elementary school, middle school high school and college students are developing Bloom’s Taxonomy for different subjects and problems within those subjects. Elementary school students are relatively new at ascending the hierarchy, but as the student begins to escalate in number of years in school, they more easily ascend through knowledge and comprehension because many subjects are repeatedly taught and the skills are continually practiced by the students. Building on the preceding years of education undergraduate students have had a significant amount of time dedicated to education and most likely enter the university classroom with a sturdy base of knowledge and comprehension coupled with personal experiences. Knowledge and comprehension create the basis of subject content knowledge for the undergraduate teacher. The other four facets of Bloom’s Taxonomy focus on an additional understanding of content knowledge, but they also lend themselves to

⁶⁵ Reeves. (1990), 613.

⁶⁶ Glover, J. A., & Corkill, A. J. (1990). The Implications of Cognitive Psychology for School Psychology. In T. B. Gutkin Ph.D & C. R. Reynolds Ph.D. (Eds.), *The Handbook of School Psychology* (112). New York: John Wiley & Sons .

developing pedagogy. At the level of application, the undergraduate modifies his/her understanding of the subject content knowledge learned prior to and in college. The modification of this knowledge may also be useful in the undergraduates development of pedagogy because the new understanding accompanied with a new explanation may be easier understood by the elementary school students. When the undergraduate begins analysis of subject content knowledge, they will be separating factual evidence from opinions in discussions, lectures, books, and journal articles. Pedagogical development in analysis would entail the undergraduate recognizing the bias in the manner information is presented to them. In analysis, the undergraduate is also breaking down, or simplifying concepts that contribute to the whole of subject content knowledge and pedagogy. When the undergraduate reaches synthesis, they recompile what was drawn a part in analysis, but in a new manner. The undergraduate ascends the taxonomy ending with evaluation. During evaluation, the undergraduate implements their own personal biases and judgments on the subject content knowledge, and their own personal preferences in pedagogy. Undergraduate students should be able to distinguish the facts of the subject content knowledge from the biases of the authors, instructors, and society. They should also understand their personal biases. While these are being identified and when these are separated, the undergraduate is able to develop their own type of pedagogy and incorporate these different parts into the delivery of the information to students.

Both the content and the pedagogy of a subject contain fact and biases. If the undergraduate is able to successfully build on each of the scaffolded steps they should be able to enter a credentialing or professional program knowing the material, its facets, and where they stand on the subject. After the undergraduate degree, professional education, and credentialing

program are completed, future teachers should be able to enter the professional world they will be helping students ascend the taxonomy.

By viewing the undergraduate process from lens of different disciplines, multiple angles of an undergraduate's experience are addressed which may not have occurred if only theories from the same discipline are applied. This is important to consider because when generating a solution to the undergraduate teacher education process, we are best advised when consulting theories, scholars, and people from different disciplines and walks of life in order to have a well-rounded choice of possible solutions.

METHODOLOGY

In this section, I will review the methodology I used in creating my capstone research project. I will discuss the type of data I needed to create my capstone and how I collected the information.

In the composition of my capstone, I have utilized qualitative methodological components including observation, informal communication, and personal experience, but the solid foundation of scholarly material has arisen from in depth research. Being an individual with a professional desire to become an elementary school teacher, I made myself aware of the requirements for entering a credential program. I also personally reflected on my own educational experience and attainment. With this knowledge in hand, I set about my educational career. In my third year of college, the notion of the importance of the undergraduate education as a key component in becoming a teacher occurred to me. From here, I concluded that I should conduct my capstone project on the basis of scholars' suggestions as the best route, method, and

courses for an undergraduate to take prior to being fully immersed in the profession of teaching.. The fruits of my research are seen in the *Literature Review* section.

As a historian, I utilized the historical method to compose the base of my studies. Susan Griggs, defines the United States historical method in three steps. These are, “research, or the identification and location of sources and the selection of evidence from them; analysis, usually divided into external and internal criticism, and synthesis, or interpretation.”⁶⁷ The beginning step is to conduct research. In order to do so, the researcher must locate the material he/she will be drawing evidence from. In this step, I consulted individuals with knowledge on the subject for direction in terminology. They suggested the terms, ‘teacher education,’ ‘subject content knowledge,’ and subject matter preparation. Using these terms, I scouted many secondary sources in the forms of books and journals found in the Tanimura and Antle Family Library and on the California State University Monterey Bay (CSUMB) Library website which allows students to access scholarly journals. After having a body of literature to consult, I began to review the material. In reviewing the material, I found two concepts articulated on by the scholars, subject content knowledge and pedagogy. With these two terms, I refined my research to undergraduate teacher education in the matters subject content knowledge acquisition and the development of pedagogy. A more specific group of literature in hand, I began to examine the materials content. Following historical methodology, the second step is to analyze the sources. I gathered the relevant information to my topic on undergraduate teacher education; then, I divided it into similar ideologies on subject content knowledge and pedagogy. The assembled groups based on the suggestions of scholars are, in depth content knowledge in a particular discipline, subject content knowledge acquisition across disciplines (breadth), and the acquirement of both

⁶⁷ Susan Grigg, " Archival Practice and the Foundations of Historical Method ," *The Journal of American History* 78, no. 1 (June 1991): page #s, <http://www.jstor.org/stable/2078095> (accessed December 18, 2009).

depth and breadth of subject content knowledge. In my section entitled *Analysis*, I examine the implications of the implementation of these scholarly suggestions, and the feasibility of the suggestions in the real world using changes at CSUMB as a starting point.

In addition to my research, I conducted an assessment of the Social and Behavioral Sciences (SBS) pathway as to its effectiveness in preparing undergraduates to become elementary school teachers. This assessment occurred in coordination with the research on scholars suggestions of what subjects on which future teachers should be well versed. In addition to the assessment, I offer suggestions of which courses should be supplemented from other disciplines to be in accordance with scholarly suggestion and meet the requirements of CSUMB. This will be further explained in the *Analysis* section. The combination of research, assessment and action is the content of my capstone.

ANALYSIS

In this section, I will briefly offer a history of the evolution of teacher education in the United States. I will then further discuss the main points and debates composed by scholars as seen in my *Literature Review* including subject content knowledge in a single discipline, subject content knowledge across multiple disciplines, pedagogy, the relationship between subject content knowledge and pedagogy, and the specific recommendations of courses by scholars. After offering more insight and perspective to the authors' argument, I will offer how the SBS major at CSUMB applies directly, and at times offers a possible solution. I will then address my personal biases as well as gaps in the literature.

HISTORY OF TEACHER EDUCATION

Education has a history and an evolution into the present. In order to comprehend the current state of undergraduate teacher education, it is necessary to know where it began and how

it has changed over time. I will begin with literature offered about the Colonial Era in America in regards to teacher education; from there, I will examine key times and changes in teacher education leading to current teacher education.

In the colonial era of the United States teachers were educated in much of the same way as students. Education occurred in the context in which the individual lived; the predominant educators were the family, community, and church.⁶⁸ Because education occurred within the framework of daily life those teaching did not view teaching as their primary occupation.⁶⁹

When formal education of students began, teacher education requirements consisted of comprehending and modeling the subjects in which the students would be taught such as reading, writing, and counting. Additional requirements unrelated to subject matter included “being of high moral character and orthodox religious beliefs.”⁷⁰

Early formal teacher education facilities were deemed normal schools. Prior to 1900, these normal schools carried out the tradition that teachers needed to be skilled in the same subjects as their students. To graduate from a normal school, “students had to show mastery of reading, writing, spelling, geography, grammar, and arithmetic for admission to regular professional courses.”⁷¹ Though teacher education was available, only a small percentage of teachers attended normal schools introduce quote. Let’s get the scholars names in the lit review. “approximately 25 percent of those teachers in urban areas (with graded schools) possessing a normal school diploma. Since normal school training took place at the secondary level, urban

⁶⁸ Wayne J. Urban, "Historical Studies of Teacher Education," in *Handbook of Research on Teacher Education*, ed. W. Robert Houston, Martin Haberman, and John Sikula (New York: Macmillan Publishing Company, 1990), 60.

⁶⁹ Urban. (1990), 60.

⁷⁰ Urban. (1990), 60.

⁷¹ Urban. (1990), 62.

teachers at best had a high school diploma.”⁷² Also at this time (post-Civil War), universities developed and created teacher education programs, generally geared at training high school teachers, which offered an additional schooling approach for teachers other than normal schools.⁷³

At this time Education as a developing field aligned itself with other developing social sciences such as psychology.⁷⁴ The university professors of education taught to those who desired to become teachers, philosophy and within that context educational theory was taught.⁷⁵

From the early 1900’s through the 1960’s a severe chasm between normal schools and universities emerged. Prior to this time, graduates of normal schools were able to find jobs teaching in elementary schools; however, when university graduates transitioned not only seeking high school teaching positions but also elementary school positions, normal school graduates began having greater difficulty finding work because they unlike their university counterparts did not have a degree.⁷⁶

During this time frame, components of teacher education were being shaped by vents such as the cold war and space race. The United States inability to outperform the Soviet Union caused discontent with the public and their opinion of the primary and secondary educational systems. Teacher education programs responded to this outcry: “Teacher education became directed toward helping prospective teachers learn to understand and use the emerging curricula in mathematics and science.”⁷⁷

⁷² Gloria Ladson-Billings, "Preparing Teachers for Diversity: Historical Perspectives, Current Trends, and Future Directions," in *Teaching as the Learning Profession: Handbook of Policy and Practice*, ed. Linda Darling-Hammond and Gary Sykes (San Francisco: Jossey-Bass, 1999), 88.

⁷³ Urban. (1990), 63.

⁷⁴ Urban. (1990), 63.

⁷⁵ Urban. (1990), 63.

⁷⁶ Urban. (1990), 65.

⁷⁷ Ladson-Billings. (1999), 88.

Normal school teachers may have had difficulty finding jobs during this era not only because they did not have degrees, but also because of the material learned in their education. Particular dissatisfaction during this era emerged on the grounds of teacher education not being geared to serve problems that would exist in reality. These include,

First the nonmethods studies in teacher education, mainly history of education, philosophy of education, and educational psychology, tended to be based on the concerns of the parent discipline from which they were taken rather than on the real problems in teaching. Second, teacher education curricula tended to take the existing social reality as a given and attempted to adjust the actions of the teachers and the schools to reflect that reality.⁷⁸

Teacher education has long since modified by time, social needs, states, teachers, and students. The consistency of the current undergraduate education is now one of the concerns of scholars and the future teachers themselves. Because the current system of teacher education is not yielding completely successful elementary school students according to state tests, undergraduate students and universities need to make changes in the undergraduate curriculum for future teachers.

During the undergraduate educational process for future teachers, students are expected to acquire a set of subject content knowledge. The debate amongst scholars stems between study of a particular discipline or an education composed of multiple subjects. If a future elementary school teacher is submerged into a single discipline for the extent of their education, they are expected to have a developed understanding of their major. This is a reasonable request because academic time and focus are geared toward a central location and outcome. On the other hand, following these same suggestions the individual would only be permitted to teach the subjects in

⁷⁸ Urban. (1990),66.

which they have a major or minor in.⁷⁹ This would adversely affect elementary school teachers because they teach a variety of subjects to a particular set of students. If they were limited to only teaching classes within their previous field of study, elementary school students would have to rotate classrooms as done in high school, or teachers would need to acquire majors or minors in Language Arts, Mathematics, Science, History, and any other subjects that may be offered.

An additional rebuttal is that there is little evidence that a teacher's understanding of a subject translates into his/her students' comprehension or performance in the subject.⁸⁰ If a teacher dedicates their undergraduate education to a single discipline, there is no guarantee of their elementary school students' success. If the students do not comprehend the information presented by the teacher then an onlooker may question the value of the undergraduate education of the teacher, what purpose did it serve if his/her students are not learning the information?

An alternative to an in depth education in a single discipline is an education of spanning subjects. The profession of teaching is knowledge-based.⁸¹ An elementary school teacher requires a large knowledge base of a myriad of subjects; therefore, breadth of subjects must be acquired. However, when such breadth is achieved, depth in any one of these subjects may be compromised because no extent of time is dedicated to exploring the boundaries or levels of the particular discipline.⁸²

Contrasting solely depth of knowledge, or breadth of knowledge, a more ideal model would be to gain both breadth and depth in subject matter. The depth would stem from a particular content area and the breadth from a liberal arts education.⁸³ This would better serve elementary school teachers allowing for proficiency not only in one subject but in different

⁷⁹ Holmes. (2007), 15

⁸⁰ Roth. (1990), 120.

⁸¹ Darling-Hammond. (1995), 16

⁸² Grossman. (2005), 230.

⁸³ Grossman. (2005), 230. & Holmes (2007) 29.

subjects they will be teaching. Though this is an attractive approach, there are some necessary considerations. When considering the average cost per year of a public university which is 7,020 dollars a year and the most popular notion is that one should acquire a bachelor's degree in four years time.⁸⁴ Some of the scholarly recommendations towards subject matter acquisition and pedagogy are unlikely to be feasible for students. When reviewing Holmes Group and Pamela Grossmans' et al suggestion for undergraduates to complete an in depth education in a subject other than education coupled with a liberal arts education, it does not seem financially sound or wise in matters of time. This is because in the current day meeting these recommendations would be the equivalent of pursuing two degrees. Couple those with Robert Roth's and Chris Piphos statement that a teacher can be well versed in subject matter and yield impressive grades yet this is not a predecessor for their teaching abilities or their students' success at the elementary level. In short, the undergraduate could put the money and time forth to have a specific degree and a liberal arts degree and still not be a qualified teacher.

A possible solution that would allow for an in depth study of a particular subject matter as well as gaining breadth across subjects at CSUMB would be for students to major in SBS and supplement Liberal Studies courses when necessary or applicable. The Social and Behavioral Sciences (SBS) have yet to be explained or discussed. I will now describe what SBS entails, and what specifically CSUMB's major in SBS offers.

Anthropologist, Immanuel Wallerstein defined the Social and Behavioral Sciences as, "attempts to construct our modern world, to develop systematic, secular knowledge about reality

⁸⁴ College Board, "Pay for College," CollegeBoard: for Students, <http://www.collegeboard.com/student/pay/add-it-up/4494.html>(accessed December 1, 2009).

that is somehow validated empirically”⁸⁵ Additional constraints to the definition of SBS by Immanuel Wallerstein are,

intellectual categories—modes of asserting that there exists a defined field of study with some kind of boundaries... and some agreed-upon modes of legitimate research. In this sense they are social constructs whose origins can be located in the dynamics of the historical system within which they took form and whose definitions may in fact change over time.⁸⁶

This translates into SBS in the context of the broader world are a compilation of disciplines that examines the modern world with modes of legitimate research to methodologically develop worldly knowledge about reality.

California State University, Monterey Bay (CSUMB) offers an undergraduate degree in SBS. Students obtaining a SBS degree will, “lets you explore innovative and alternative solutions to human problems using social-science and critical-thinking skills. In the process, you will learn how to contribute to your community and effectively and ethically advocate, while developing valuable skills that will make you highly desirable to employers and graduate schools.”⁸⁷

⁸⁵ Immanuel Wallerstein, *Open The Social Sciences: Report of the Gulbenkian Commission on the Restructuring of the Social Sciences* (Stanford University Press, 1996), 2, http://books.google.com/books?id=RPEIZjvMK94C&printsec=frontcover&source=gbs_navlinks_s#v=onepage&q=publisher&f=false (accessed December 16, 2009).

⁸⁶ Immanuel Wallerstein, "Anthropology, Sociology, and Other Dubious Disciplines," *Current Anthropology* 44, no. 4 (August-October 2003): 453, https://docs.google.com/a/csumb.edu/gview?a=v&pid=gmail&attid=0.1&thid=1256b999b49f1415&mt=application%2Fpdf&url=https%3A%2F%2Fmail.google.com%2Fa%2Fcsumb.edu%2F%3Fui%3D2%26ik%3D1ebdd6c935%26view%3Datt%26th%3D1256b999b49f1415%26attid%3D0.1%26disp%3Datt%26realattid%3Df_g2xwq5bu0%26zw&sig=AHIEtbRau6NDUkv3n1n2EGAA-07UxECpkw&AuthEventSource=SSO (accessed December 10, 2009).

⁸⁷ California State University Monterey Bay, "CSUMB Catalog: Social and Behavioral Sciences B.A." California State University Monterey Bay, <http://catalog.csumb.edu/site/x594.xml> (accessed December 6, 2009).

SBS addresses human issues with social science theory, methodology, and the skill sets that contribute to the composition of the social sciences. While obtaining these skills the CSUMB SBS students will contribute to their community, and ethically advocate for people. The Social and Behavioral Sciences (SBS) is an interdisciplinary study of humanity, its facets, and problems. It builds on the disciplines of anthropology, archaeology, political science, Geographic Information Systems (GIS), and sociology, and social history..⁸⁸ With the knowledge and skills acquired within the major and the combination of these individualized studies that generate the SBS the student will be able to generate solutions to human problems.

The SBS major provides you with the skills and knowledge you need to create and apply innovative and alternative solutions to human problems... You will use these skills to design and carry out projects that address real-life social problems faced by human communities locally and globally. The SBS major prepares you for effective and ethical social intervention and advocacy..⁸⁹

The elementary school system is a social construct and contains flaws allowing it to rest within the realm of the Social and Behavioral Sciences. However, the education system is not the primary focus of this major, but breadth extending into other subjects related to education may be reached considering the meeting of the University Learning Requirements (ULR) and 30 units of electives that contribute to the completion of the SBS degree. The ULRs span across disciplines and offer introductory breadth to subjects in which a future teacher will be educating his/her students. The additional 30 units may be dedicated to a deeper understanding of subjects into which the college student wishes to have greater insight; this may include earning a minor in

⁸⁸ California State University Monterey Bay, "Social and Behavioral Sciences B.A. ~ Typical Course Pathways," California State University Monterey Bay: CSUMB Catalog, <http://noodletools.com/noodlebib/defineEntryCHI.php> (accessed December 6, 2009).

⁸⁹ California State University Monterey Bay, "Social and Behavioral Sciences B.A. ~ Overview," CSUMB Catalog, <http://catalog.csumb.edu/site/x595.xml> (accessed December 1, 2009).

the subject, or it may be to build strength in a previously weak subject. By gaining a degree in SBS, the student is able to build a strong understanding of a particular discipline. By supplementing Liberal Studies (LS) courses and courses in other subjects when necessary, applicable, or desired, the student will be building breadth.

In addition to knowledge of subjects is the delivery of the information to the students. This is the acquirement of pedagogy. Developing pedagogy at the undergraduate level may come from learning from instructors who model strong pedagogy. The undergraduate student is learning different methods in which a subject can be explained or viewed; the subject content knowledge and the method of presentation are learned and added to his/her knowledge base. The undergraduate acquisition of pedagogy is at its infantile stages and further developed at the professional level of education.

SBS students acquire multiple examples of pedagogy by studying subjects through multiple professors who offer their individual lenses for viewing based on their experiences, but they also acknowledge and offer additional lenses and methods for understanding and acquiring knowledge. These are then coupled with the individual student's goals and experiences and those of the class body.

Scholars call for a greater command of the subjects they will be teaching as well as being better prepared as to how to teach them; however, scholars are reluctant to lay out direct advice as to what courses should compose an undergraduate major. But some scholars offer a few suggestions directly related to course choice. These are a methods course based on academic research, a course in child psychology, and training in diversity, social justice, and equity.

In my opinion, based on the layout of the SBS department at CSUMB students may meet these scholarly suggestions, while pursuing their degree and graduate within the allotted time.

The SBS department offers two types of classes in regards to research methods. SBS 366 is a research methods course which focuses on quantitative methods, and SBS 362 is an additional research methods course; however, it emphasizes qualitative methods.⁹⁰ The subject or topic in which the deliverable is based upon is of the student's choosing. He or she may wish to use this opportunity to research a topic related to the field of education. By doing this he/she will be gaining a SBS approach to the field of education which may instill a different way of viewing the material or the subjects. Students will also be working toward completing Major Learning Outcome II (MLO II) which is a requirement specifically pertaining to the acquirement of skills in quantitative and qualitative methodology supported by proof of these skills in the form of two deliverables one representing quantitative methodology the other qualitative methodology.⁹¹

Because SBS offers flexibility and availability to take courses that are not directly within SBS, as stated earlier in the analysis, students may take a child psychology or child development course. Though the SBS department does not offer these courses, they are still in the realm of the Social and Behavioral Sciences. Classes offered at CSUMB that may meet this suggestion are PSY340: Developmental Psychology in which developmental psychology not only of childhood but infancy, adolescence and adulthood are included.⁹² Another option would be for the student to take HDEV 260 or HDEV 360 both being child development courses.⁹³ Both PSY340 and HDEV 260/360 offer insight to the development of the undergraduates future

⁹⁰ California State University Monterey Bay, "Social and Behavioral Sciences Descriptions: For catalog cycle Fall 2007 to Spring 2009," California State University Monterey Bay: Course Descriptions, <http://schedule.csUMB.edu/classes/spring2010/SBS/descriptions> (accessed December 18, 2009).

⁹¹ California State University Monterey Bay, "MLO 2: Research Methodologies, Information Management, Retrieval and Analysis," California State University Monterey Bay: Division of Social, Behavioral, and Global Studies, <http://sbgs.csUMB.edu/site/x20884.xml> (accessed December 18, 2009).

⁹² California State University Monterey Bay, "Psychology Descriptions: For catalog cycle Fall 2009 to Spring 2011," California State University Monterey Bay: Course Descriptions, <http://schedule.csUMB.edu/classes/spring2010/PSY/descriptions> (accessed December 18, 2009).

⁹³ California State University Monterey Bay, "Human Development Descriptions: For catalog cycle Fall 2009 to Spring 2011," California State University Monterey Bay: Course Descriptions, <http://schedule.csUMB.edu/classes/spring2010/HDEV/descriptions> (accessed December 18, 2009).

students. One class focuses predominately on the mental aspect and the other class focuses on the physical as well as the mental development.

Both the ULRs and one of the SBS major's Graduation Learning Outcomes (GLOs) address Culture and Equity.⁹⁴ Through this standard, students follow scholarly suggestion and gain insight into culture, equity, diversity, and social justice. Many courses address this requirement; however, SBS 300 the major professional seminar directly addresses it in the SBS major.⁹⁵

The teaching profession is knowledge and people-based. Based on the suggestions of scholars, the apparent solution to creating an effective undergraduate education is to generate an undergraduate curriculum that allows for students to gain depth and breadth of subject content knowledge while acquiring an introductory and strong pedagogy. The afore mentioned should be accomplished as well as, working within the constraints of time, money, additional scholarly suggested courses, university requirements, and credentialing program requirements. It is my strong belief that all of this may be accomplished via the attainment in a degree in the Social and Behavioral Sciences.

In my opinion, these goals are attainable because it is the embodiment of my undergraduate education. But because it is my experience it also renders my bias. My professional goal is to become an elementary school teacher. I chose the undergraduate major of SBS with a concentration in Social History and a minor in Psychology. I have completed this work while supplementing additional courses in three and half years. Concordia University in

⁹⁴ California State University Monterey Bay, "CSUMB Catalog: Social and Behavioral Sciences B.A." California State University Monterey Bay, <http://catalog.csUMB.edu/site/x594.xml> (accessed December 6, 2009).

⁹⁵ California State University Monterey Bay, "Ethics," California State University Monterey Bay: Ethics ULR, <http://schedule.csUMB.edu/classes/spring2010/UETH>(accessed December 18, 2009).

Irvine, California. has also accepted me into its Masters and Multiple Subject Teaching Credentials Program. Because of my experience I do believe it is possible for an undergraduate individual intending on becoming an elementary school teacher to have a major in the Social and Behavioral Sciences while supplementing additional courses to gain the depth and breadth in subject content knowledge, and meet the scholarly suggestions, and achieve their degree within four years. However, because I have not yet entered teaching as a profession, I cannot indicate a correlation between my undergraduate degree and my teaching abilities. But my intention is this: the Social and Behavioral Sciences may offer an additional method to a degree in the liberal arts for students to become elementary school teachers. This may also prove to be a healthy change because teachers will have a more diversified background enabling them to use different methods to aid students. I do not expect this to be the only method of study nor is it necessarily the ideal, but if undergraduate students understand their wants, needs, and gaps in their education, they do have choices they may pursue.

When reading this Capstone Paper, it is important to remember that this is an incomplete study and that there are many holes in the literature. Scholars' overwhelming main concern in regards to the educational development of future teachers is at the professional level, when pre-service teachers are gaining teacher credentials and at times Masters in education; however, when scholars place strong focus on what is learned and developed at the professional education level then the information and experience gained at the undergraduate level and prior is forgotten, dismissed, or simply not given its rightful attention. The metaphorical idea that elementary students are "blank slates" their teachers write on and fill has been refuted and deemed false by the academic world on the grounds that children enter the classroom full of personal experience and knowledge from outside the educational realm. If we no longer believe

that children are “blank slates” or “empty books” with pages to be written on, then why should it be believed that those with bachelor’s degrees are open for molding at the professional level of schooling? The undergraduate education can be steered and guided via curriculum in preparation for the professional education. In keeping to the book metaphor, a chapter on the undergraduate education and experience can be outlined by scholars and each student may write that chapter in their own life following the guidelines. By steering the undergraduate education, students may be more prepared for their professional educational experience and for early years within the profession.

In studying at the professional educational level, I aim to continue my research of the topic of undergraduate education. In my future studies, I will interview current teachers of varying undergraduate majors, I will gain their perspectives on elements of the undergraduate education they found helpful, hindering or wish they had a greater understanding; then I assess their performance based on their students test scores. By doing this, I will have a comparison of how students are fairing based on a part to their teachers education and pedagogy strong correlations may not be found, but this is still a topic that needs further exploration.

CONCLUSION

In this capstone research paper I attempted to answer the research question: what is most effective and efficient undergraduate education a student can receive in order to be a proficient teacher? In order to answer this question, I examined a brief history and evolution of teacher education which has highly changed since its Colonial debuting, but what remains the same is that teachers must be well versed in the subjects they are presenting to their students. Scholars refer to the learning of these subjects and how to teach them are considered subject content

knowledge and pedagogy. Both of these are the basis of teaching, however, alone neither of these two will help students; it is their combination, coordination and adaptation that helps elementary school students learn. Theories of different disciplines can assess issues in the educational system. By using different disciplines to view a problem, different leading struggles emerge and can be solved through the varying perspectives. I collected and composed this information with the intention of presenting a clear-cut solution for undergraduate students. However, though I have learned much in my research, I cannot offer precise solution. More research needs to be conducted in part by interviewing current teachers and gaining their perspective on the importance of their undergraduate education, and how well their students understand the subjects their teachers present to them. However, I have found that at the undergraduate level, students may develop strong subject content knowledge skills so when they begin to develop personal pedagogy styles they understand the subject on multiple levels as Bloom's Taxonomy describes. Students may also enrich their experience by taking a research methods course, a child psychology course, and a course in social justice, diversity, and equity. These items can all be offered through a degree in the SBS.

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APPENDIX

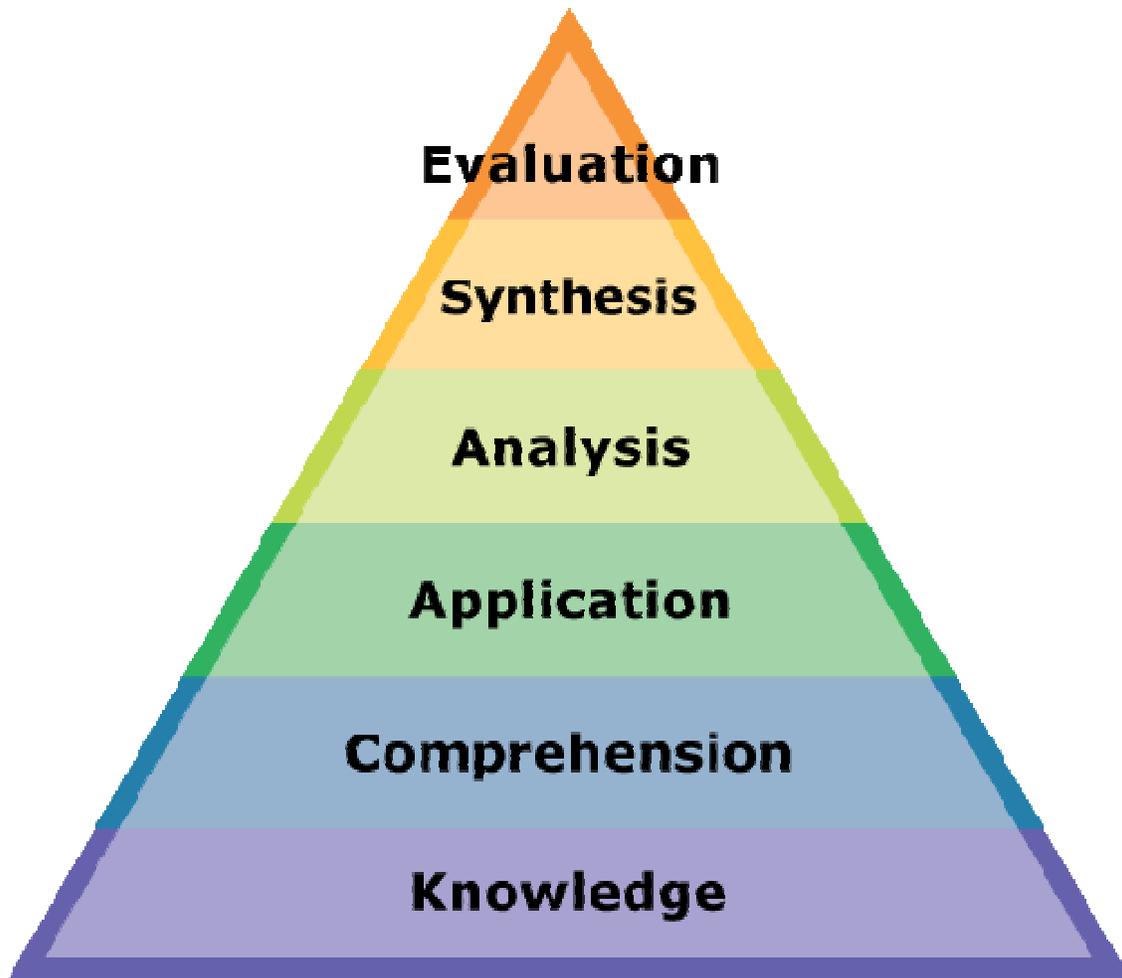


Figure 1 "Original Bloom's Taxonomy," chart, Learn NC,
http://www.learnnc.org/lp/media/misc/2008/blooms_old.png (accessed November 18, 2009).