Constructivist model for career internships: Integrating contextual learning and critical thinking

Deborah Scott-Toux

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CONSTRUCTIVIST MODEL FOR CAREER INTERNSHIPS:
INTEGRATING CONTEXTUAL LEARNING AND CRITICAL THINKING

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Interdisciplinary Studies:
Integrative Studies

by
Deborah Scott-Toux

September 2001
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Approved by:

Dr. Sam Crowell, Chair,
Interdisciplinary Studies

Dr. Joseph Scarcella, Second Reader
ABSTRACT

This project grew from a desire to help students draw meaningful connections between education and future career aspirations. The literature review covers many topics: the history of career education, constructivist theory for meaningful learning, and the benefits of critical thinking.

The process of career decision-making and planning is lengthy, complex and personal. Career awareness and self-awareness should be integrated into academics in early years. Contextual learning through real-world experience should be a significant component of the program. Internships are the most effective contextual learning technique. In order to enhance learning, students should be encouraged to reflect upon their observations and apply critical thinking skills to extract meaning from their experience.

The curriculum is designed for Home Economics students, who have already completed career exploration and specific content area coursework. Their Internship would provide an opportunity to apply academic and vocational standards to real-world projects.
ACKNOWLEDGMENTS

I sincerely thank my sons, Christopher and Alexander, for their patience and understanding. You have been supportive during the hard times, encouraging during my weaker moments, and forgiving during the stressful times. I hope you have grown in your understanding of commitment, to family, to community, and to whatever profession you eventually choose.

I would also like to acknowledge my professors, Dr. Bob London and Dr. Sam Crowell. Thank you for teaching your students to appreciate the beauty and excitement of learning. Although this program is now completed, I have only begun to incorporate everything you have shared. My students and I will be thanking you for years to come.
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CHAPTER ONE

INTRODUCTION

Context of the Problem

At a very early age children begin to dream about their futures, their future careers and their future families. They seem to intuitively see the connectedness of their personal lives and future careers. It is only logical that children imagine their futures based on their personal life experiences. These dreams may be richer and/or more realistic for advantaged students than for other students, who grow up with less academic support or less exposure to career options. Expanding young people’s self-awareness and real world experience offers them a wider variety of choices, clearer and more accurate perceptions of occupations, and endless lifestyle choices.

The concept of infusing career education into the classroom was first proposed in the 1970’s and has been gaining support ever since. I am not alone in believing that career awareness can and should be addressed periodically at every age level and across the curriculum, helping students see connections between content and skills to various career fields and occupations. “What am I going to be when I grow up?” provides a hook to engage
all students in learning and give them power to construct their futures and establish challenging goals for themselves.

Current research on learning and career development demonstrates that students benefit from career exploration as early as elementary school and not later than early adolescence. Most individual attitudes are formed in early adolescence (Toepfer 1994, p.61). Many adolescents have limited aspirations based upon lack of awareness or sex stereotypes (Silverman and Pritchard 1994). Unrealistic expectations also lead to being unprepared academically, because most adolescents fail to see the relevance between academics and careers (Wells & Gaus, 1991). A National Center for Education Statistics survey of 23,000 eighth graders found that 60% of students plan to go to college but only 25% take college prep (Kerka, 1994). An even more recent study shows that, while more than half of high school freshmen plan to attend college, only about 20% of high school graduates move immediately to college; and only half of those earn a degree within a six year period (Bolt, 1997, p. 82). Obviously there is great disparity between what students think, say and do. Increased awareness of the world, career opportunities, workforce demands and self-concept help students make more
consistent, proactive choices in terms of career and educational goals.

While vocational preparation is not always considered a central educational purpose, young adolescents do need to think about their futures, the nature of careers, and how school relates to their futures, in order for them to take some responsibility for academic and career choices. Vocational education for young adolescents should include self-understanding, social understanding, goal development, and an exposure to a wide variety of careers. An early start in awakening career curiosity and self-awareness will enable all students to maximize their potential. The career planning process is a complex, thought-provoking process, which people engage in more lengthily and more frequently today than ever.

All agree that many years are consumed during which the individual goes through a succession of stages, phases, or periods in transition from a child to an adult who is meaningfully and satisfactorily employed (Isaccson, 1977, p. 423).

We also know that much learning is the result of unconscious processing. We need to provide curriculum and activities, which encourage continued processing (Caine and Caine, 1990, p. 26). Learning may not occur until
months after a particular class. Therefore, the career-planning process should not be delayed until the junior or senior years of high school. Neither should it be the sole responsibility of guidance counselors who see hundreds of students, sporadically, for short periods of time.

What do we want most of schools? David Perkins boils it down to retention of knowledge, understanding of knowledge and active use of knowledge. "Generative knowledge doesn’t set there but functions richly in people’s lives to help them understand and deal with the world" (Perkins, 1992, p.5). Current views define education as the transmission of knowledge and the cultivation of wisdom. Wisdom is defined in the dictionary as knowledge and judgement; judgement is defined as forming wise conclusions. Good judgement depends on sound critical thinking skills. As a part of the educational process, we must offer students opportunities to apply critical thinking skills, along with their knowledge of themselves and the world, to the age old questions of: Why am I here? What am I going to do with my life?
Statement of the Problem

Preparation for work is only one of several goals of education, however it does serve a very meaningful role in the student's total life plan. Unfortunately for many students, career development is not addressed until high school. Many school districts offer a variety of vocational education courses within the departments of: business, home economics, industrial arts, etc. When offered, career-planning classes are frequently reserved for juniors and seniors and they often focus primarily on job seeking and employability skill rather than life planning.

Most districts are beginning to offer more career education and at an earlier age. Many have implemented Career Days in elementary schools. Parent volunteers speak to classes about their particular careers. Consequently, the scope of careers represented is dependent upon the available community resources. As of a few years ago, Rialto Unified began requiring freshmen to take a "Career Connections and Study Skills" class. I helped developed the curriculum and have taught it for seven years. In this course, students take a wide variety of surveys, which assist them in discovering areas of career interest. They are then assisted in applying a
decision-making model to choose a career field of interest. They research that career and determine short and long-term goals, including 4-year high school plan and plans for post secondary education. Every student maintains this project in a portfolio in the Career Center. Ideally students are to review their portfolios periodically to update their experience or academic achievements. These portfolios provide students an opportunity to reflect on their achievements and hopefully motivate them to proactively engage in the necessary steps to realizing their goals.

After seven years of teaching this course and trying various strategies to better motivate my students, I wanted to know if it was effective and what else could be done to continue its effect throughout the student’s remaining years of high school. I requested data from Information Systems at the district office and compared former students’ test scores and grade point averages. Results showed positive effects in terms of increases between freshman and senior years. I also informally interviewed my former students to determine what they appreciated about the class and what changes they might suggest. Most students agreed that the class had helped them to imagine themselves in a given career field.
Others, who entered the class with a general idea of what they wanted to do, said they learned about the specializations within the fields. Surprisingly, most were still interested in the same field, three or four years later; but they had gained no further awareness or experience relative to that career. Some had tried to find work experience opportunities but were unable to locate opportunities related to their vocational interests. Others had been able to make contacts related to their interests, job shadowing a professional or working at an entry-level job indirectly related to their future goals. A few had been fortunate to arrange internships but had not taken advantage of the opportunity for meaningful research/reflection.

Purpose of the Project

As a Vocational Education teacher for ten years, I have been intrigued by the possibility providing students opportunities to apply their knowledge and skills to real work situations. In addition to Career Connections and Study Skills I teach Interior Design, Fashion Textiles, and Consumer Economics. My Home Economics students accumulate a wealth of content knowledge and industry skills that directly apply to many vocational fields.
Through the Home Economics student organization we have become involved in various real world projects, community service and/or business enterprises. Students interested in Interior Design have worked with Habitat for Humanity as well as a local travel trailer manufacturer. Fashion Design and Merchandising students have altered, sized, and coordinated donated clothing for a local thrift shop, to display appropriate attire for job interviews. Students preparing for their first interviews were counseled and given free outfits. Child Development students have worked in neighborhood preschools and as volunteer tutors.

I believe our program needs a curriculum process through which students identify the knowledge and skills they demonstrate through the services they are providing to the community, evaluate themselves accordingly and develop a professional portfolio. In this thesis, I have set out to establish a curriculum unit, which could facilitate students working through internships and volunteer projects. I plan to address the needs of the students and their evaluators in terms of: in-depth research, self-reflection and assessment, critical thinking skills, and the evaluative responsibilities of the teacher/mentor in terms of student performance per academic, vocational, as well as SCANS standards. I hope
to develop a working module that can be used by Home Economics teachers and adapted by other teachers to their particular areas of interests.

Definition of Terms

In Chapter two I have reviewed literature in a variety of areas: career education, constructivist theory, brain-based research, contextual as well as experiential learning, and critical thinking. In researching past studies done in career education, I discovered surveys, which provide insights into how and why this topic is essential for young adolescents. The constructivist theory and brain-based research reveal how we learn and make meaning from our experiences. This gives evidence for the benefits of contextual and experiential learning. The critical thinking skills, self-reflection and decision-making processes, are methods for students to create personal meaning for their lives. The career development standards referred to reflect recommendations of the Secretary’s Commission on Achieving Necessary Skills report, U.S. Department of Labor, What Work Requires of Schools: a SCANS report for American 2000 (SCANS, 1991).
CHAPTER TWO

LITERATURE REVIEW

Career Development

Various studies show that teenagers, from 13 year olds to high school seniors, lack the maturity and skills to make successful decisions about their futures. In 1977, Roger Aubrey published Career Development Needs of 13-Year Olds: How to Improve Career Development Programs through the National Advisory Council for Career Education. He documented very unrealistic and self-defeating perspectives in four areas: self-perception, efforts to improve their abilities, methods of improving, and planning for their futures.

In terms of self-perception, most 13-year olds could identify at least two strengths and limitations. Most males described interests and skills related to sports. Girls' interests and abilities were more evenly distributed among a variety of activities. In general, students from lower parent education levels scored lower. His implications were that students need experience, community-based and classroom activities, to broaden their self-perceptions.
In terms of efforts to improve abilities, almost all students could identify something they would like to do better in, but only % had tried to find out how to improve. Again students with parents of lower educational levels were less able to identify resources for self-improvement.

For methods of improving, group and individual sports were selected as the most useful in obtaining jobs. School, or academic subjects, ranked near the bottom of those selected. Most males envisioned their future jobs as similar to their current sports or hobbies, while girls most frequently chose teaching. Only % associated current academic work with usefulness in obtaining future jobs. Of eleven school areas, math was associated with work more than the sum total of all other areas. A serious implication is that students need to see a relationship of school to their futures in order to make education meaningful.

In terms of planning for careers, most 13-year olds do think about their future career goals. The predominant first choices all tended to require lengthy degrees beyond high school. Most see themselves in occupations filled by small populations of the workforce. Few see themselves in jobs related to the bulk of the workforce. Although it is
true that the workforce is in a constant state of change, it is clear that students would benefit from greater career awareness.

Another study was conducted on vocational maturity during the high school years (Jordaan, Hyde 1979). Most boys were not prepared for prevocational choices at 9th through 12th grade. They were even less prepared for the immediate choices to be made in 12th. More 9th graders were likely to use career planning resources available. The decline in 12th grade resourcefulness was attributed possible to a greater independence and rejection of adult authority (p. 172-173). Most made substantial changes in their plans, yet there was no measurable increase in implementation of career plans from 9th to 12th grade. Half of the students in each of the grade levels held unrealistic goals, without setting specific goals to achieve them, which kept them from exploring any other opportunities. This study also determined that these students knew more about the entrance requirements of their occupation of choice than the psychological requirements. Still, a significant discovery was that those students who were more self-aware were also more likely to inquire about the psychological/personal characteristics of their preferred occupation. This
points to the need for self-concept awareness in successful life planning programs.

As a result of these findings, Jordaan and Hyde advocate career exploration within the first year of high school. They also suggest subject matter teachers provide specific opportunities for career exploration and help students assess their skills and interests at regular intervals.

More recently, the concept of career maturity has been modified to reflect the rapidly changing world and thus our need to be adaptive to changes in the environment, including workforce demands. Current leading researchers employ the term "career adaptability" to describe the degree to which one can change as a result of new situations or changes in the environment (Goodman, 1994; Herr, 1997; Super, 1984; Savickas, 1997). The exponential rate of change brought on by technology and global markets require people to adjust their roles on a continual basis. Rather than 5-7 career changes within a lifetime, today's workforce faces 10-11, requiring today's students to be life-long, self-directed learners.

What Do We Want Most of Schools? D. Perkins suggests: retention of knowledge, understanding of knowledge and active use of knowledge (Perkins, 1992). "Generative knowledge doesn't set there but functions
richly in peoples lives to help them understand and deal with the world” (Perkins, p. 5).

With dual income family now the norm and with the rise of single parent households, most will agree that all of today’s students, both male and female, need to plan on a career. It is a major life decision, which influences many other areas of one’s life and lifestyle. “Distinction between work and personal life are blurring, and the only relevant meaning of “career” is that one’s life is one’s career” (Peavy, 1994, p. 124). Ken Hoyt’s definition of career education is even more far-reaching.

Career education is the total effort of the educational system and the broader community to help all individuals become familiar with the values of a work-oriented society, to integrate those values into their personal value systems, and to implement them in their lives in such a way that work becomes possible, meaningful, and satisfying for each individual. (Hoyt, 1996, p.1)

Constructivism

Constructivism is a learning theory, which directly supports career education and the integration of
vocationally based projects into the classroom curriculum. A basic premise of constructivism is that knowledge is not effectively transmitted in the form of abstract concepts, to be assimilated by the learner through traditional directed teaching methodologies. Dale Parnell describes teacher-directed instruction as the "freezer" approach to teaching and learning. "Just put this in your mental freezer. You can thaw it out later should you need it" (Parnell, 1996, p. 18)

Piaget's research in intellectual development offers insights into why this form of instruction isn't effective for many students. According to Piaget's theory, "all normal subjects attain the stage of formal operations no later than 15-20 years. However they reach this state in different areas according to their aptitudes and their professional specializations" (Piaget, 1972, p. 10). The adolescent is capable of but doesn't always use formal operations because of fatigue or boredom. "There is, however, another possible interpretation, which Piaget favors. Perhaps adolescents and adults use formal operations only in situations which are compatible with their interests and professional concerns" (Gingsburg, 1979, p. 202). What a perfect justification for integrating career-related projects into the school
curriculum! It has the potential of increasing student interest and intellectual development level.

Learning is an organic process of invention, rather than a mechanical process of accumulation. Learner must have experiences with hypothesizing and predicting, manipulating objects, posing questions, researching answers, imagining, investigating, and inventing in order for new constructions to be developed" (Fosnot, 1989, p. 20).

Constructivism has its roots in Piaget's theories of how children build cognitive structures based on early experience and then accommodate, or adjust that schema, when new situations arise which don't fit the original schema. Fosnot identifies four major principles of constructivism.

1. Knowledge consists of past constructions.
2. Constructions come about through assimilation and accommodation.
3. Learning is an organic process of invention, rather than a mechanical process of accumulation.
4. Meaningful learning occurs through reflection and resolution of cognitive conflict, and thus serves to negate earlier, incomplete levels of understanding" (Fosnot, 1989, p. 19-20).
Therefore, rich experiences are essential to deep understanding, and complex projects related to real life provide the ideal contextual learning environment. Activities which promote schema construction, application of knowledge, and opportunity for shared meaning are natural tools of the vocational world: case studies, hierarchical concept maps, and Vee diagrams (Alvarez & Risko, 1989, p. 2).

Constructivism holds that human beings construct their knowledge in the very process of adapting and that knowledge only has meaning to the extent that it resolves problems encountered while attending various goals or the accomplishment of various projects (Pepin, 1998, p. 180).

The fact that knowledge is constructed through a process of adapting schema to the resolution of problems lends even more support for the potential benefits of career education. Learners are more likely to be motivated through personally meaningful questions to resolve. One of the roles of teachers is to provide catalysts of inquiry and experience through which students can create their own meaning.

Designing, thinking, changing, evaluating—most particularly in response to a felt need—create
interest and energy. Cognitive processes work to address affectively driven issues. Helping students to clarify for themselves the nature of their own questions, to pose their questions in terms they can pursue and to interpret the results in light of other knowledge they have generated is the teacher's main task" (Brooks & Brooks, p. 30).

Many studies confirm benefits of conflict and controversy in the classroom. Cognitive development increases through interpersonal controversies and conflict situations, when groups of students are motivated to compete for the best solution (Johnson and Johnson, 1979, p. 55). Others refer to positive uncertainty, a non-threatening yet thought-provoking environment that creates in students a need to thoroughly engage oneself. Piaget describes how moral schema are constructed through disequilibrium, as egocentric behaviors come into conflict with adult rules of social behavior. This accommodation of moral structure is essential in character development and interpersonal relationships.

Because this theory advocates total involvement of the individual within holistic real-world context, constructivism offers students additional personal
benefits, which help them adjust to a changing world. The old model of education is for students to be passive receptive of information. Today students need to be creative and analytical, self-motivated, cooperative, empowered, flexible, life-long learners.

Brooks and Brooks offer nine descriptors of the constructivist classroom:

1. Constructivist teachers encourage and accept student autonomy and initiative.
2. Constructivist teachers use raw data and primary sources, along with manipulative, interactive, and physical materials.
3. Constructivist teachers use cognitive terminology such as “classify,” “analyze,” “predict,” and “create.”
4. Constructivist teachers allow student responses to drive lessons, shift instructional strategies and alter content.
5. Constructivist teachers inquire about students’ understandings of concepts before sharing their own understandings.
6. Constructivist teachers encourage students to engage in dialogue, both with the teacher and with one another.
7. Constructivist teachers encourage student inquiry by asking thoughtful, open-ended questions and encouraging students to ask questions of each other.

8. Constructivist teachers seek elaboration of students’ initial responses.

9. Constructivist teachers engage students in experiences that might engender contradictions to their initial hypotheses and then encourage discussion (Brooks and Brooks, 1993, p. 103-112).

Constructivism encourages the use of dialogue, reflection, hypothesis, and project-based learning. These activities teach students valuable skills much needed in the workforce and in life in general. SCANS Skills, developed in the 1980’s, are guidelines for what employers are looking for in entry through professional level employees. They include academic foundations, personal and interpersonal skills, as well as higher order thinking skills. Constructivist classrooms are more effectively preparing students for their futures, for life.
Contextual Learning

The importance of context: authentic experience, concrete data, real problems is an essential tenant of constructivism. Contextual learning is learning that occurs in the most effective and natural manner, associating classroom theory with real-world application. Whereas traditional curriculum is either content or competency driven, contextual learning insures that students make connections. Curiously enough, Socrates recognized this when he stated, "Not I but the city teaches" (Gross, 1992, p. 135). It is more consistent with reality, which is why students appreciate the realness and significance work-related projects.

Learning occurs most effectively when information is acquired in the context of its natural use. Conversely, education often tends to be overly organized and compartmentalized from work. Furthermore, curriculum decisions are made separate from instructional decisions, disciplines are taught in isolation...Contextual learning seeks to reconnect work and education,...learning is a conduit to applied knowledge" (Bolt, 1997, p. 81). Contextual learning is often project based, disorderly and messy, but so is real life. The contextual
learning environment is characterized as busy and noisy, full of projects and supplemental equipment. A study of 350 high school students in five Oregon high schools showed contextual learning improved student performance. There was marked improvement in attendance and productivity, which are two significant standards of the workforce. Although there was no significant differences between the contextual and control students, average test scores of the contextual groups were as good or better than the national averages. The most interesting results were the significantly more positive student responses from the contextual classes, demonstrating their awareness of other "stuff" they had learned that they would be able to use later (Parnell, 1999, p. 3). Educational outcomes cannot be measured exclusively by test scores. These students were aware of real, however unmeasured, learning taking place; and they demonstrated signs of developing the essential habits of life-long learners. I believe the results of this study demonstrate very impressive gains in terms of increased work ethics and metacognitive skills while maintaining content standards as well.

The fact that these students performed about average on their test scores but out-performed the control group in motivation, engagement and productivity, brings up
another positive aspect of constructivism and contextual learning. It appeals to and engages all students. "Many students are labeled as learning disabled when they are actually experientially deprived" (Bimonte, R., 1998, p. 18). Our high schools are doing many students a great disservice by emphasizing academics and college prep courses as the ideal pathway for all, when a majority of students are more successful in alternative post secondary educational programs. However contextual learning is not to be reserved for the non-formal operations students. Constructivism advocates contextual learning for all students, integrating cognitive skills, higher order thinking skills and critical thinking, into all student work.

Because of radical changes in the workforce coupled with globalization of the marketplace, decision-making skills are now required for even entry level employees. Contextual learning strategies teach students high level cognitive skills desperately needed in business: task analysis, organizational structure, trend-analysis and performance assessment (Bolt, 2001, p. 81-83). The SCANS Report documents the demand for these skills within the business community.
Experiential Learning

Experiential learning techniques allow students to learn from their own experience and take responsibility for their own learning. Through experience and reflection, students find examples and applications that illustrate meaningful abstract concepts. The students learn how to extract meaning so that the concepts become real. David Kolb's experiential learning theory takes into consideration the complexity of experiences and the multidimensional aspect of the learner. His is a four-stage cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Each of the processes relates to a unique learning environment and particular learning skills (Kobl, 1986, p. 103.) Internships rank highest across the chart. They are strong in concrete experiences, which enhance observation and reflection. They are also strong in active experimentation, which teaches responsibility, risk-taking and goal setting. In this learning environment students apply knowledge to solve real problems. They can also develop professional skills: planning, scheduling, writing, preparing presentations, taking responsibility for their own actions.
John Dewey, however, issues a warning against non-educative or mis-educative experiential learning. He advises against over emphasis on activity, stressing the need for intelligent activity. Observation or experience alone is not sufficient. Purpose and reflective process are essential for the students to learn effectively. Dewey advocates the formation of purpose in order to counteract impulse. His three-step process for the formation of purpose suggests the need for experiential learning curriculum to include research, reflection, and evaluation.

1. Observation
2. Knowledge of what has happened in the past through: recollection, advice and warnings of those with greater experience

Essential elements must be included in order to maintain the integrity and educational value of an experiential learning program; yet each element must be designed for flexibility. Real life situations are multi-faceted, as are learners, so alternatives must be available for varying situations and students. Evaluation methods need to be appropriate to the experience and to
the skills being measured. Eisner's framework for evaluation consists of eight criteria consistent with experiential learning.

1. Reflect real world needs, by increasing students' problems-solving abilities and ability to construe meaning;

2. Reveal how students solve problems, not just the final answer, since reasoning determines students' ability to transfer learning;

3. Reflect values of the intellectual community from which the tasks are derived, thus providing a context for learning and enhancing retention, meaning, and aesthetic appreciation;

4. Not be limited to solo performances, since much of life requires an ability to work in cooperation with others;

5. Allow more than one way to do things or more than one answer to a question, since real-life situations rarely have only one correct alternative;

6. Promote transference by presenting tasks that require students to intelligently adapt modifiable learning tools;
7. Require students to display an understanding of the whole, not just the parts; and

8. Allow students to choose a form of response with which they are comfortable (Eisner, 1993, p. 226-232).

Brain-Based Learning

Research on the brain and how it works has lead to surprising discoveries, which support constructivist theory and contextual learning. Ironically as it may seem, our brain is not designed for "instruction!" We now know that the brain does not simply operate on stimulus and response, as the behavioralist theory espoused. Nor does it function like a computer ready to be programmed. Dr. Sperry's left brain, right brain model suggested the idea of different hemispheres for specific functions, which appears now to be part of the truth (Sperry, 1960). MacLean proposed three overlapping hemispheres and pointed to the significance of environment, challenge, and emotion on learning. In his model, the emotional cognitive brain supervises emotions and learning, knowledge and comprehension.

A key discovery is that we learn in relationship to our emotions. One implication is that a rich environment
encourages learning, whereas a threatening environment minimizes learning potential. Another realization is that the human brain is not designed for traditional instruction but for making its own meaning in relationship with its environment and experiences. This holds tremendous implications for the future design of our educational systems and supports the case for constructivism.

In *Understanding a Brain-Based Approach to Learning and Teaching*, Renate Caine and Geoffrey Caine have outlined twelve principles for brain-based learning and applied them to education (Caine & Caine 1990). Principle one is that the brain is a parallel, multi-modal processor, simultaneously processing emotion, thoughts, and imagination. Learning is maximized through experiences, which engage feelings and imagery. This supports the constructivist theory. Contextual learning provides a whole, complex environment, with relevant application of knowledge and skills and human interaction.

A second principle is that learning engages the entire physiology. We learn naturally through multiple contexts, when exposed to a variety of modalities, and when allowed to express ourselves through a variety of media. Career related projects naturally engage students
in multiple cognitive and affective processes. Projects are often done in cooperative teams, so that students integrate various content skills with communication skills, problem solving skills and organizational skills.

The third principle is that the search for meaning is innate. Others have proposed similar theories to the Caines' innate search for meaning. “Fundamental human motivation is the search for meaning...the distinguishing human qualities of mind and spirit are the clue to human motivation” (Phenix, 1964, p. 344). We were created with the need and desire to discover meaning in our lives! The popularity of spiritual beliefs attests to this. People are constantly constructing meaning of their experiences, naturally employing processes of discovery, searching for novelty.

Educational programs need to tap into this natural curiosity and meaning making by providing relevant projects that stimulate curiosity and discovery. Few students have a realistic idea of the relationships between academics and the world of work. I have witnessed many students' amazement at the application of geometry and algebra in the fashion and interior design fields. In the middle of an activity, I hear a wave of students recognizing the mathematical concepts they are required to
draw upon, and frequently they admit that they finally understand the rationale and formula. These are the contextual learners, who hadn’t reached formal operations and consequently were lost in math class but suddenly understood the concepts when presented with real applications.

The fourth principle describes the patternning process of searching for meaning. The brain naturally organizes input into patterns and creates patterns of its own. The significance of this principle is that all students respond to meaningful, challenging learning environments and experiences. Students naturally create patterns, neural maps, in a rich environment; but they resist meaningless, unconnected teaching. Students may have varying strengths with regard to multiple intelligences; however effective teaching necessitates the purposeful use of appropriate patterns of instruction. In his book, Realms of Meaning, Philip Phenix identifies distinctive subject specific symbolic realms of meaning. “The method of teaching for any discipline is to provide experiences that encourage the student to engage actively in inquiring according to the patterns of discovery and validation characteristic of the discipline being studied” (Phenix, 1986, p. 339). Consequently contextual learning is not
only adaptive, even ideal for all subjects and disciplines.

The fifth principle states that emotions are critical to this patterning process. Emotions influence what we learn and impact memory storage. Consequently the emotional climate of the classroom and teacher-student relationship need to be respective, cooperative, and sincere. With project-based classrooms and teachers as facilitators, there is naturally a more open, more cooperative relationship between students as well as between students and teacher. Teachers need to encourage dialogue and ask for elaboration. Brooks and Brooks relate a story of a student who responded to a teacher's question, and then changed his response when the teacher asked him why he thought that. When the teacher asked him to explain his second response, the student felt really challenged and confused. The teacher proceeded to ask him which answer he felt was correct. After pausing, the student gave both answer and explanation. The class tested his hypothesis and proved it to be correct. That day the entire class learned that questions are not confrontational challenges, but challenges to think (Brooks & Brooks, p. 66). Students need to learn this if
they are to become confident, articulate, proactive members of the workforce.

Principle six states that every brain simultaneously perceives and creates parts and wholes. Left and right hemispheres interact in perceiving, processing, and learning. Consequently learning is enhanced to the degree that both sides of the brain are addressed, such as through project-based and cooperative learning.

According to the seventh principle, learning involves focused attention and peripheral perception, even subtle visual or auditory stimuli. The brain responds to the entire context of an environment. Music and peripheral visuals such as charts or works of art should be planned and purposefully organized to support learning in the classroom. In addition, students need opportunities to learn within the community, through internships, job shadowing, or community service projects. The stimuli of the real world environment adds richness and dimension to the activities and processes engaged in, which we now know translates into deeper meaning. These experiences teach subject matter and skill relationships, roles and responsibilities within society, communication and interpersonal skills. Once again we recognize how we can help students attain the SCANS skills.
The eighth principle claims that learning always involves conscious and unconscious processes. Since much of what we learn is unconscious, we need to find a way to tap into and exploit this power of unconscious learning. Contextual learning and reflective processing take advantage of the unconscious learning as students actively participate, naturally process experience and create personal meaning. Encouraging students to reflect upon their experiences, thought processes, and feelings are highly effective tools for learning and memory retention. Brooks points out the need to encourage dialogue, to probe and to give students permission to change their minds without feeling threatened. "Changing one’s mind is an invaluable element of the learning process" (Brooks and Brooks, 1993, p. 42). Our future will be better for this, the inventors, the politicians, the leaders of tomorrow possessing an inquisitive, humble, open-minded nature.

Principle nine refers to two types of memory systems: spatial and rote learning. Spatial memory is the more natural system of remembering experience and environment. This system is always engaged and can be enhanced with novelty. Ausebel drew a distinction between the cognitive drive, the desire for knowledge, as opposed to rote
meaning. He argued that it has greater potential for meaningful learning because its reward is intrinsic and consequently self-motivating (Ausubel, 1968, p. 365). As educators we need to increase our use of this system to the advantage of learning in the most natural manner possible. The rote memory system involves learning unconnected pieces, not wholes, without context. Unless imbedded in a context, rote memorization is a highly ineffective and inefficient form of learning. Facts may be learned but difficult to retrieve and very little transfer of knowledge occurs.

The tenth principle confirms that the brain understands and remembers best when facts and skills are embedded in natural, spatial memory. Ideally, learning takes place in experience, real life activities, projects, visual imagery, and interaction of other subjects. Classrooms need to incorporate more interactive and interdisciplinary activities that are relevant and meaningful, with greater use of cooperative group projects. Field trips, guest speakers, job shadowing, community service involvement, internships are essential. If transportation is a difficulty, community-based projects can be virtually accessed, with communication to community mentors through the Internet at Telementor.org.
Principle eleven states that learning is enhanced by challenge and inhibited by threat. A state of relaxed alertness needs to be created in order to reduce threat and yet increase challenge. The novelty and vitality of community based projects and business professionals as mentors add a dimension of challenge. Students must be adequately prepared and encouraged by their teachers, yet expected to perform according to real world standards.

The twelfth principle refers to each brain being unique, multi-faceted and full of choices. All students are unique in their learning styles as well as their areas of multiple intelligences. Their individual career interests are a reflection of this uniqueness, and this should be encouraged and celebrated. Students deserve learning environments and teaching strategies, which will optimize their personal construct of meaningful, satisfying lives.

Search for meaning or motivation may be natural, but the question still remains: "How do we nurture it?" We all know students who are "underachieving" or checking out of school. This is not a new phenomenon. Although more than half of freshmen plan to attend college, only about 20% of high school graduates move immediately to college, and only half of those earn a degree within a six-year
period (Bolt, 1997, p. 82). As early as 1968, we have realized that students must see connections to subject matter and that subject matter must be related to felt needs in order for meaningful learning to take place and be retained (Ausebel, D. 1968 p. 366).

The old conception of school as a place for accumulating knowledge to be used over a lifetime is no longer appropriate, for much of the knowledge that will be needed in the future is not yet discovered at the time the students in school, and much of what he may acquire there will soon be obsolete. If schooling is not to become an exercise in futility, it is imperative that materials for instruction be selected so as to minimize these effects of cultural change. One promising way of achieving this is by teaching methods of inquiry (Phenix, 1964, p. 334–335).

Thinking Skills

The National Assessment of Educational Progress (NAEP) shows that student scores in basic skills have improved in the past few years, but higher level thinking skills have not. Students demonstrated lowest level, concrete cognitive levels and failed to master abstract
levels (French, 1992, p. 5). Definitions of thinking are far-ranging, from simple response to stimuli...to complex, dynamic, reflective, creative, purposeful operations. All are based upon active engagement of the thinker. Thinking depends upon and responds to context, physical and personal. The physical refers to the body and brain; whereas the personal entails the person's likes and dislikes (French, 1992, p. 13). The implications of these aspects of thinking point out how individualized the process is, and again gives me confidence that career education naturally inspires students to develop their thinking skills.

In *Teaching Thinking: An Agenda for the 21st Century*, Dr. Gross emphasizes how we need to think together and learn how to improve our own thinking abilities (Gross, 1992, p. 135). He outlines ten mega-trends, which point to the urgency of life long learning.

1. We learn throughout our lives. Half the knowledge of many given fields will be obsolete within five years. Average person changes occupation 6-7 times during their lifetime.

2. Colleges and universities will no longer monopolize education. The education and training
available through corporations dwarfs post secondary schools.

3. Learning should be needs driven. National Coalition of Independent Scholars demonstrates that there is no limit to self-directed learning.

4. Whole brain learning is most effective: simulation, dialogue.

5. Learn together through collaborative thinking on problem-solving task forces.

6. Multiple media, technology, virtual classrooms and online courses.

7. Self-directed thinking and learning.

8. Learning by teaching.

9. Formal education systems must change radically, teach how to learn, the joy and love of learning.

10. Learn how to learn: proactive attitude, awareness of learning styles, self-knowledge and self-strategy performances.

Students need to be familiar with a variety of modes of thought and investigation. They must be better able to cope with change, adjust to new methods, and become life-long learners. By using instructional strategies that teach inquiry, students learn content and learning methods
simultaneously, which promotes greater understanding and the likelihood for life-long learning.

There are varieties of thinking realms, patterns and applications of thinking. Aristotle outlined three areas of knowledge: theoretical (scientific), practical (decision), and productive (design). Sadly enough, today there is less focus on the relationship between thought, action, personal behavior, and character or values. Yet these are the essential applications of thinking. Far too many students still sit in classrooms that are fact-filled, yet void of context for applying and motivating thinking to create meaningful learning (Howard, 1990, p. 5).

As early as 1933 Dewey was advocating problem solving as a central focus of education. He suggested orienting teaching around real needs of the students, using real resources of the culture to develop habits of adjusting to life situations. He defined various realms of meaning, each with its own particular symbolic realm.

The organization of instructional materials varies:

- Symbolically: analysis of symbolic systems
- Empirically: descriptive, theoretical organization
- Esthetically: pattern of personal understanding
Normatively: past, general interpretation

Choice depends upon the teacher's purpose: to communicate, to describe, to create interesting perception, to gain personal insight, etc. An effective teacher selects the most appropriate patterns based upon the intended purpose.

The method of teaching for a discipline is to provide experiences that encourage the students to engage actively in inquiry according to the patterns of discovery and validation characteristic of the discipline being studied (Phenix, 1933, p. 339).

Still, learning is more than a consequence of thinking (Perkins, 1992, p. 104). It is a change in behavior, a move from one behavioral condition to another (Guilford, 1967 p. 312). Motivation for creative thinking is epistemic curiosity, which is driven by conflict in beliefs, values, attitudes, and thoughts (Berlyne, 1962, p. 27). Learning doesn't occur unless previous knowledge is not working, has either failed or is determined insufficient. Without failure, status quo is reinforced. Recognition of failure creates the heed for inquiry, problem-solving, and eventual accommodation.

Art Costa's circular model of the inquiry process demonstrates how teachers can organize activities, which
develop higher order thinking skills and meaningful learning. Data can be generated from a variety of sources: research, observation, or experimentation. Data processing involves the organization of raw data into meaningful and useful groupings; the organizational principle can be comparative or sequential, for example. Theory building requires the process of explaining the data groups by generalizing or inferring relationships. The emerging meaningful theory can be a finished working model or a new hypothesis upon which predictions and new inquiries can be launched.

Following this model ensures the teaching of both inductive and deductive thinking. Inductive is data management from the bottom up; deductive is application of principles from top down. Students need both skills in order to understand and productively contribute to the complexity of the world.

Metacognition deals with how we think, thinking about thinking. More than thinking skills, it includes conceptual images and transfer (Perkins, 1986, p. 102) outlines four levels of metacognitive knowledge:

- **Tactic learner:** unaware of metacognitive knowledge
- **Aware Learner:** knows some things they do but not strategies
• Strategic Learner: organizes thinking by using problem-solving and decision making strategies
• Reflective Learner: strategic and reflective on thinking in progress, evaluates strategies and revises them.

Metacognition is not a separate curriculum. It is fused into the content through: higher level thinking orders, verbal and written expression of thinking, graphic representation, teaching for transfer, etc. We must provide students with experiences as well as the processes of inquiry and reflection, to help them move from tactic to reflective learners.

Thinking together, learning how we can improve our own thinking abilities, and using technology to expand our intelligence are most important thinking activities adults will engage in the coming years" (Gross, 1992, p. 133). He has defined ten mega-trends, significant changes in the way we think and learn:

• We will learn throughout our lives.
• We will learn in organization and association.
• We will focus on real needs. Learning will be need-driven.
• We will learn with our whole brains.
• We will learn together in collaboration.
• We will learn via multiple media technology.
• We will direct our own thinking and learning.
• We will learn by teaching.
• Our system of formal education will change radically.
• We will learn how to learn.

Implications are that we must design a format for students to learn thinking skills, set their own learning goals, prepare for a lifetime of learning, learn and create with technology, and learn as well as teach in collaboration with others. Students will need to be proactive towards their growth and responsible for it. Self-awareness, including awareness of one’s own learning styles and other aspects of self-knowledge, will be essential strategies for discovering options and resources.

Critical Thinking

Critical thinking is a complex process, which is not to be reduced to merely decision making or problem solving. One of its earliest advocates, Dewey, defines critical thinking as "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the
further conclusion to which it tends” (Dewey, 1933) (Hawes, 1990, p. 51). Ennis (1987) defines it simply as, “reasonable, reflective thinking that is focused on deciding what to believe or do.” NCTE Committee on Critical Thinking and the Language Arts defines critical thinking as “a process which stresses an attitude of suspended judgement, incorporates logical inquiry and problem solving and leads to an evaluative decision or action.” It is also described as “skillful, responsible thinking that facilitates good judgement because it relies on criteria, is self-correcting, and is sensitive to context” (Lipman, 1988, p. 39). It clearly involves the assessment of worth or validity of evaluative thinking. It seeks to evaluate both methods and results. These skills will be essential for students of the information era, bombarded with unfiltered data through the electronic media.

As the above definitions imply, critical thinking encompasses a variety of skills and operations, which are essential to the complex and integrated goal of life planning. The following ten skills represent a consensus of scholars’ work over the past 40 years:

- Distinguishing between verifiable facts and values claims.
- Determining the reliability of a source.
- Determining the factual accuracy of a statement.
- Distinguishing relevant from irrelevant facts.
- Detecting bias.
- Identifying unstated assumptions.
- Identifying ambiguous or equivocal claims or arguments.
- Recognizing logical inconsistencies or fallacies in a line of reasoning.
- Distinguishing between warranted or unwarranted claims.
- Determining the strength of an argument (Beyer, 1985, p. 272).

Whichever definition one chooses, its appropriate application to career planning is evident. It incorporates context, inquiry, reflection, criteria, decision making, problem solving, and it is self-corrective. These skills are essential for consumers of the information era. In some fields, half the known body of knowledge will be obsolete very 5 years (Gross, 1992, p. 137). Students need to use accurate, verifiable, reliable facts, recognize relevant information and claims, and determine the strengths of arguments. Because critical thinking focuses
on inquiry, it encourages search for weakness in arguments or hypotheses and discovery of new solutions. This aspect of critical thinking could keep students open to new possibilities in their life planning, which will encourage flexibility, a much needed attitude in the constantly evolving workplace.

Like learning, critical thinking is innate, learned like language, but needs to be modeled, encouraged, and developed through use for them to be generalized and transfer to other situations (Swartz, 1987, p. 59). Teachers need to model thinking patterns and problem solving processes. Graphic organizers are ideal means for developing higher level thinking skills. Students see the data transform from random to sequential, and relationships become apparent. Concept maps, matrixes, and continuum scales are examples of graphic organizers that are ideal means for students to organize data into meaningful formats. A study of GATE students versus non-GATE showed a distinct difference in GATE students' ability to identify relevant facts and separate out the irrelevant information (Kincheloe, 1995, p. 202). Use of graphic organizers could help all students to organize data and be able to discern what is relevant.
Graphic organizers can be more effective than linear outlining because they reflect the interrelated, complex nature of real world information. In fact student constructed models work better than teacher designed which is logical given the manner in which learners construct their own meaning (Tinzmann, Jones, Pierce, 1992, p. 201).

These critical thinking skills, as identifiable in the SCANS skills, are essential to the modern workplace. A unique concept of "reverse apprenticeship" suggests that students partner with business organizations, exchanging awareness of problem solving process for the opportunity for career experience applications. In cases where transportation to the work site is not feasible, businesses could bring the problem to the students (Duffy, 1992, p. 248).

H. B. Gelatt (1984) has coined a term, "positive uncertainty" to deal with the need to be flexible and adaptive to change: change of job, skills, and goals. He adds a new dimension to the old rational decision-making model: define, analyze, predict consequences, decide and evaluate. In our changing world this model doesn't work. Quantum physics has shown us that there is no objective physical world. All aspects of our lives and the world around us are interconnected. What we observe and derive
meaning from is our subjective, self-constructed reality. This new decision making strategy, "positive uncertainty," is the process of arranging and rearranging information into a choice of actions (Gelatt, p. 253). Gelatt is not alone to reach these conclusions. Pribam refers to it as "active uncertainty" and feels that the proper balance between this state and familiar knowledge keeps the brain questioning. A key to effective teaching is balancing uncertainty with familiarity, so that motivation is intrinsic and learning is meaningful. Heppner and Krauskoff (1987, p. 376) concluded that "people are often unsystematic and irrational." "Real life problem solving is "mess management" (Ackoff, 1974, p.21). Krumboltz (1983) states that "it is irrational to distinguish rational versus irrational decisions." To define a choice as rational depends on one's point of view, beliefs, and personal judgements.

In Gelatt's strategy all three entities are different from the original model. Information is subjective, created in one's experience and observation. The more you know, the more you realize you don't know. The arrangement of information is more important and needs to be creatively rearranged into multiple possible futures, giving way to imagination and prediction. Choosing goals
be-far e'xpe^ di s courage

The process of imagination and reflection are essential. Choice is holistic, based upon remembering and imagining, as well as thinking backward and forward. Reflective flexibility and rational, intuitive thought are combined. Gelatt's model stresses the acceptance of uncertainty and inconsistency. Goal setting and life planning need to be approached from this perspective.

One of the key elements in critical thinking is the question or problem. All of the proponents of critical thinking agree that it must be real, felt by the students. The student must be curious, confused or compelled to resolve the issue. What is more compelling than students' own career futures? To really engage in a critical thinking issue there must be a tension of conflicting ideas. Can students be challenged to define and defend their career options and plans?

Leslie Hart holds a unique position, recognizing the value of intuition within the critical thinking process. Whereas most careers and academic fields require formal education and rational thought, she points out that logical, linear thinking has produced most of the stagnant, wrong answers that beset the world.
Most of scientific history records a struggle against logical, rational ideas: the scientific age began when we stopped thinking in those ways and began observing, measuring, and dreaming up theory to be tested (Hart, 1975, p. 133).

Kincheloe points out that all too often success in school only prepares students for more school, not work or life. "School success can't be used to predict creativity, inventiveness, leadership, good citizenship, personal and social maturity, family happiness or honest working life" (Kincheleoe, 1995, p. 140). He goes on to say that often those without formal education are capable of above average ingenuity and sophisticated problem solving. Many of the CEO's of Fortune 500 companies have minimal formal education and most had only average academic performance. What they lacked in academic skills they more than made up for in creative thinking and other areas of competency. As the SCANS Competencies and Basic Skills demonstrates, students need to develop a wide variety of skills in addition to the attainment of subject matter content, which is why the SCANS report divides the skills into Competencies and Basic Foundational Skills.

Learning within a work helps develop these essential competencies. Projects are goal oriented. Resource
allocation is strictly monitored. Work is group-based and cooperative, and yet requires individual accountability. Individuals and teams make decisions and problem solve together; and they apply the inquiry process through successes and failures.

Still, not all problems are unique. Teachers need to address ill-defined problems and help students define the essential problem by assisting students in searching for consistent patterns within problems (Kincheloe, 1995, p. 296). Asking the unique questions and problem detection are the higher order skill levels, which are critical to the problem solving process.

There is a real distinction between critical thinking and creative thinking. The one is analytical, while the other generates and synthesizes new solutions. Whereas critical thinking evaluates the validity of something and is bound by known, proven principles; creative thinking finds new divergent ideas. Creative thinking is the result of seeing deeper patterns and relationships, asking unique questions, detecting problems, generating new solutions.

In our continually evolving, complex society, students need to be able to apply knowledge, creative thought and judgement to problem solving. These skills can be increased with teacher guidance and practice. The
necessary skills include making detailed observations, classifying observed data, analyzing of facts, sensing the problem(s), deferring judgement, discovering new relationships and ideas, evaluating potential consequences, and finally developing action plans (Beyer, 1988, p. 295).

Because change is constant Redekopp (1994) advises to follow your heart, to focus on the journey, and to stay learning. The implications of following your heart are that values and interests are important considerations. Skills can always be learned! Focus on the journey is an attitudinal position, which implies that, since the destination is not certain, enjoy the process and keep your options open! Stay learning is a requirement for all. When change is constant, life-long learning is essential.
CHAPTER THREE

METHODOLOGY

The development of this project was built upon the need for extended career experience, which has been substantiated by student interviews, statistics, review of literature, and staff evaluation.

In order to determine the effectiveness of our high school's career development program, I interviewed students who had taken my freshman Career Connections course. When asked what had been the most valuable aspect of the class, the students' most frequent response was the career surveys conducted with different software packages, COIN and Bridges, and the required career research report. This process has helped students identify potential careers based upon their values, interests, and personality strengths. However, as in anything, the students' results were as accurate as the student input, which points out the importance of student awareness of their values and skills referred to in these surveys. As the literature review confirms, self-awareness is a significant factor determining student maturity in career planning. Still many issues related to career and personal
suitability are best determined through exposure and experience.

All students said that they appreciated learning about careers, which interested them and matched their profiles. Through this class, many students had discovered their fields of interest and established realistic short and long-term goals. Setting these goals often motivated the students to work harder in school and register for specific courses in order to pursue a particular career pathway. Data compiled by the Rialto District Information Services' program analyst confirms these students' claims. Records of current senior class show higher grade point averages and achievement test scores for the students who had taken my career course as freshmen, as compared with their class average.

Some students had already known which professional field they wanted to enter, but gained insights into the diversification within the field. Adam, for example, had been in advanced math classes and knew he wanted to be an engineer, but hadn't realized there were so many areas of specialization. Asked what they had done to further pursue their career plan goals, most were at a loss. Two to three years had passed, and except for high school course alignment with desired post secondary educational goals,
most students had little opportunity for experience related to their chosen field. Some had performed community service for college applications and scholarship portfolios, however it was rarely related to their career interests. Some had explored their interests in terms of specialized coursework. Sarah has been passionate about fashion since she was very little. She also has a natural talent for fashion sketching and design. In her senior year she took my Fashion, Textiles, and Apparel class, which helped her to realize that she does not enjoy the manufacturing aspects of the industry as much as design or possibly fashion journalism.

Several areas can be improved upon to help our students gain real world experience and encourage personal/professional development. As my literature review confirms, students benefit greatly from experiential learning, applying their knowledge and skills as a professional would within a real world context. Contextual learning also helps students learn how to learn from their own observations and experiences. This has the potential to move students from directed learning, which is characterized by students receiving information from teachers, to self-directed learning, which empowers students to take responsibility for their own learning.
Self-directed learners observe critically, access information, determine relevant data, reflect and formulate meaningful questions, apply knowledge and develop theories. They become life-long learners.

Internship

Of the various experiential learning techniques, the internship has been determined to be the strongest contributor to the learning process. "Learning through firsthand, full-bodied realities...is the essence of experiential learning. Immediate, concrete experiences that occur outside the classroom serve to arouse observation, prompt reflection and spur action" (Kolb & Lewis, 1986, p. 103). In a study of comparative experiential learning techniques, internships scored the highest or as highly in all categories of learning skills. Internships were the strongest in developing responsibility and goal setting skills, essential attributes of self-directed, life-long learners. Consequently I decided to develop curriculum guidelines for an Internship program within the Home Economics department, which could also be adapted to other subject matter areas.

There are three primary aspects of the program:
• It includes opportunities for experiential learning: internship, service learning, or business-based learning.

• It is standards-based: SCANS competencies, home economics standards as well as academic standards, as related to the career area.

• The program also focuses on critical thinking skills, helping students process their experiential learning to construct personal meaning.

Students enter our Home Economics program by taking a freshman core course, which covers the foundation of all areas of home economics: culinary arts, fashion and interior design, child development, consumer education. During this first year, students discover their primary area of interest and enroll in one or more years of specific content courses. At the conclusion of at least one full year of content specific coursework, juniors and seniors are eligible for advanced level HERO (Home Economics Related Occupations) coursework. For further recognition, students also participate in state coordinated competency exams as well as Competitive Recognition Events. An internship is a capstone of the high school career development program. It assists
students in clarifying their career goals and self-perception. It also helps them meet graduation objectives: Expected School-wide Learning Results (E.S.L.R.'s), applied technology skills identified in the Digital High School grant, writing proficiency samples, as well as the autobiography for scholarship application portfolios.

The basic components of the curriculum are outlined in Appendix A. Student assessment will be based upon completion of the component assignments and compilation of the following six sections, into student portfolios, print and/or digital.

1. Participation in one of the Home Economics Competitive Recognition Events (Appendix B) within the chosen field: fashion design, interior design, culinary arts, or child development. The competition experience provides an invaluable opportunity for students to test their career-related skills and receive feedback from professionals who judge the events. Unfortunately many students are inhibited from competing by time constraints and lack of support. Integrating the competition with an internship program provides students an opportunity to prepare for the competition while receiving
support from both the teacher and their internship mentors.

2. Experiential learning activity: internship, service-based learning, tele-mentor (telementor.org).

Although the internship is the most authentic and thus ideal vehicle of career-based experiential learning, finding suitable business partnerships for all students can be challenging. Many other options exist. Community service offers additional opportunities particularly in social services and education. The Internet and electronic mail open entirely new vistas to students with unique interests, which may be difficult to match with local community organizations. Telementor.org matches students' project proposals with appropriate business entities around the world. Students and mentors communicate electronically on a regularly scheduled basis, and the mentor provides evaluative feedback. Any one of these experiential learning avenues provides the real, contextual experience students need to construct meaning. Specific project and goals are to be set by student and teacher/mentor. Common Components to include:

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• Daily field logs, to document detailed observations of internship, service learning or telementor.org work experience.

• Concept maps (Appendix C) incorporated into group processing of experiential learning observations.

• Weekly directed writing reflections with focus on evidence of SCANS competencies (Appendix D).


4. Research project and multimedia presentation related to specific career, integrating academic and vocational standards (Figure 1. Appendix C).

• Identification of academic and vocational standards intrinsic to the career, with specific examples.

• History of the career field and forecast of social/economic trends, including but not limited to technological advancements.

• Required: Internet research, charts/graphs, and PowerPoint presentation, in accordance with the Digital High School technology benchmarks.

• Final written report and multimedia presentation to be incorporated into digital portfolio.
5. Business writing skills: resumes, letters, memos, news articles, etc.

6. Autobiography written to reflect: deeper commitment to career plan, impact of experiential learning, increased self-awareness and SCANS competencies demonstrated.

(Appendix F.)

Critical Thinking Skills

As discussed in the literature review and confirmed in student interviews, experience alone is not sufficient for meaningful learning to take place. Dewey's second and third elements, reflection and evaluation, involve the processing of experience. This requires meaningful organization of raw data. Art Costa advocates teaching students how to organize data into meaningful groupings; i.e. sequential or comparative, in order to develop higher order thinking skills. As the GATE study demonstrated, a distinct difference between highly successful and other students is their ability to separate relevant from irrelevant information (Klenchoe, 1995, p. 202). Experiential learning is an excellent opportunity to give students the critical thinking tools, which could assist them in organizing data (Beyer, 1985).
Graphic organizers are ideal tools for developing organizational and higher order thinking skills. They illustrate the complex, interconnected relationships of data derived from real world experience. They encourage creativity. And they allow the student to construct their own meaning from their own experience (Tinzmann, Jones, Pierce, 1992, p. 201). Consequently I have suggested applying concept maps to organizing data derived from student experience. Internship students maintain field logs in which they note observations on a daily basis. Periodically students should reflect upon their notes and organize them into meaningful graphic organizers. A variety of suggested models are included in Appendix C. The series of events or cycle models (Figure 2.) are ideal for documenting sequences of events or diagramming procedures, common business competencies. Others, such as the spider map or bubble map (Figure 3.) are suitable for describing a central concept with qualifying sub-elements, ideal for detailing work responsibilities or skills demonstrated. The fishbone map and network tree (Figures 4. & 5.) show causal relationships such as interrelated procedures or work performance. The compare/contrast matrix (Figure 6.) helps visualize similarities and differences between two or more people, events, or ideas.
The human interaction outline (Figure 7.) is an ideal method to help students understand their goals as related to their business entity's goals. The problem/solution outline (Figure 8.) could apply to any number of situations students will encounter. The continuum scale (Figure 9.) illustrates degrees of performance, such as student performance ratings on any specific skills. Applications of graphic organizers will help students discern relevancy and develop critical thinking skills. It is important to remember that student constructed models are more conducive to meaningful learning than teacher directed. So, these are only suggested models and applications.

Reflective Writing

We must not overlook the reflective element of Dewey's prescription for experiential learning. The experience is by nature a group, interactive activity. The processing of experience into graphic organizers is ideally a class/small group activity. Reflective consolidation of their experience in the form of directed writings is an essential step in construction of meaning. Appendix D. includes some suggested ideas for directed writings. The primary topics will grow naturally from the
student experience and standards addressed. The graphic concept maps provide a natural support for organizing thoughts in preparation for writing. These writing samples should be compiled into portfolios. They could also be integrated into autobiographical essays, such as are required for scholarship applications. (Appendix F.)

Assessment

The nature of an internship program requires students to develop self-awareness, self-assessment, and self-direction. For this students need specific criteria and evaluative skills. In an internship program, student assessment is most valuable when tied to real world, industry standards. Learning the industry standards is an integral part of the student learning experience. Consequently I have based student assessment, self-evaluation and various project evaluations, upon the SCANS Skills and Competencies as well as the relevant Home Economics content area standards. Rubrics have been developed as an assessment tool. They help students visualize the individual standards and specific benchmark levels, in order to better demonstrate these standards and evaluate themselves accurately. The pre and post assessment of the SCANS skills has been designed to
promote self-awareness, to encourage students to set personal goals, and to provide topics for reflective writings.

Eisner's framework for evaluation consists of eight criteria consistent with experiential learning, which I have tried to incorporate into the program guidelines:

1. Reflect real world needs, by increasing students' problems-solving abilities and ability to construe meaning;

2. Reveal how students solve problems, not just arrive at the final answer, since reasoning determines students' ability to transfer learning;

3. Reflect values of the intellectual community from which the tasks are derived, thus providing a context for learning and enhancing retention, meaning, and aesthetic appreciation;

4. Not be limited to solo performances, since much of life requires an ability to work in cooperation with others;

5. Allow more than one way to do things or more than one answer to a question, since real-life situations rarely have only one correct alternative;
6. Promote transference by presenting tasks that require students to intelligently adapt modifiable learning tools;

7. Require students to display an understanding of the whole, not just the parts; and

8. Allow students to choose a form of response with which they are comfortable (Eisner, 1993, p. 226-232).
CHAPTER FOUR
EVALUATION

In order to evaluate this project, I sought a variety of perspectives, teachers and administrators, with backgrounds in Home Economics, Vocational Education, Internships, Counseling, and Curriculum Coordination.

- As Associate Principal of Eisenhower High, Nellie Moore is responsible for curriculum and scheduling.
- Wendy Bettar, Eisenhower's Head Counselor, is a strong proponent of vocational education.
- Sandy Alps is a dynamic English teacher, who is also team leader of the Virtual High School.
- Diane Carter is a well-respected, experienced math teacher, who also teaches an Internship class.
- Rod Campbell, Coordinator with the Regional Occupation Program.

The following questions were designed to assess the validity of the curriculum content and sequence in terms of meeting student needs and interests as well as coordinating with in-place graduation requirements.
Evaluation Questions

1. Is the proposed internship program proposal, its purpose and design, understandable?

2. Does the curriculum methodology seem sound pedagogically?

3. Is the proposed curriculum workable?

4. What primary benefits will students receive?

5. Any suggestions to help improve the project?
Analysis of Evaluation

Responses (Appendix J) were largely positive. All evaluators felt the curriculum was understandable and workable. Many positive responses dealt with how the curriculum integrates with and supports existing school objectives. The counselor, Wendy Bettar, felt it would be a very welcome addition to the high school curriculum.

Several suggestions have already been incorporated into this project. One was the integration of a career-based product, which prompted the incorporation of the Competitive Recognition Events. Appendix B summarizes all of these events, which are held annually: regionally in February, state wide in April, with national finals in July. It has always been difficult for students to organize their time to prepare for these events, so incorporating them into an Internship is an ideal solution.

Another suggestion was to more thoroughly integrate concept maps with directed writing. This prompted the design of specific reflective writing topics, coordinated with each of the concept maps as seen in Appendix D.

Another concern addressed scheduling issues. This course may be of interest to select students, but will require a significant block of time. Scheduling concerns
may be offset by offering it as an extended day, periods 6 and 7. Our high school is always in need of 6th period electives. Most students find work experience or internships most convenient at the end of the school day. This allows students to perform the fieldwork of their internships, permits the teacher to make periodic site visits, and facilitates meetings with student, employer-mentor, and teacher. Ideally the internship field-work would be arranged according to a four day work-week, Monday through Thursday, with Friday reserved for class review of field notes, critical thinking applications, and portfolios.
CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

Conclusion

The Home Economics Internship curriculum I have proposed addresses the objectives set forth in Chapter One and supports all Expected School-wide Learning Results. Expected School-wide Learning Results (ESLR’s) support an academic foundation including information access, reading comprehension and written communication skills, all of which are reinforced within this Internship curriculum. In addition the students will gain an understanding of how and where various academic areas are required by the career field. Other ESLR’s, such as career planning, applying technology, and decision-making skills are heavily reinforced throughout the experiential learning curriculum.

Many other projects in progress will be supported by this curriculum. The Internet research project will help support the Digital High School grant benchmarks for students, documenting their proficiency in Internet information access, word-processing, and multimedia presentation skills. The application of SCANS skills to student performance evaluation will be consistent with the
Virtual High School’s projected goals. I have been working in conjunction with the Virtual High School in the development of SCANS rubrics in order to insure consistency throughout the school. For over a decade, vocational education teachers have been the proponents of SCANS skills and applied academics. It is rewarding to see the support and integration coming to fruition.

Another positive outlook for the future is the integration, communication, and articulation among schools. Halfway through the project development I learned that our feeder middle school is working on developing contextual-based and career-related curriculum for eighth grade students. As my research confirms, an early initiation of career awareness is extremely beneficial. Our students will enroll in career exploration as freshmen, followed by one to two years of content specific coursework, culminating with internship in the senior year. Long-awaited Career Pathways are evolving, naturally integrating the interests and needs of the students.

There is an evident limitation. Demands on students, especially those aspiring to enter universities, are great. As current research documents, 50% of all high school graduates continue directly to four-year
universities. It may be difficult for these students to complete the course sequence suggested in this project. However at Eisenhower High school and many others the vast majority of students do not pursue the graduation requirements necessary for admissions to major universities. Many continue their education at a community college and consequently do have room in their schedules for the suggested coursework including internship. Students, who are not absolutely sure of a particular professional direction but feel drawn to a career field, will benefit from the opportunity to experience the world of work and clarify their goals.

The Internship provides students an opportunity to apply their knowledge and skills to real world situations. Experiential and contextual learning increase meaningful learning and memory retention. Students learn to observe, reflect, and assess, which develops self-directed learning skills. Applications of concept mapping and directed reflective writings further increase transference, connectedness, and meaningfulness. The integration of career preparation, academic standards, technology and critical thinking skills fully supports the Expected School-wide Learning Results.
Recommendations

It has recommended by both the Associate Principal and the Head Counselor that this program be offered. It meets the needs of our students. It supports district graduation requirements and other existing student objectives. Scheduling for this course is feasible as an afternoon, extended day two-hour block. The program's integrative approach and the widespread support from the evaluators will facilitate district adoption of this course.
APPENDIX A:
CURRICULUM OUTLINE
**INTERNSHIP SEMINAR CURRICULUM OUTLINE**

**Unit I: Foundation & Individual Project Design  4 weeks**

- Individual review & update of career portfolio

- Overview of SCANS Skills and Pre-assessment

- Overview of computer applications:
  1. Internet Research
  2. Spreadsheets and Charts
  3. PowerPoint

- Career Multimedia Research Projects in small cooperative groups

- Class presentations of research projects and compilation of future forecasted trends onto large-scale integrated concept map, to demonstrate universality of trends and to teach use of graphic organizers.

- Student proposals of Experiential Learning: Internship/Service Learning/Telementor project options.

- Selection of Competitive Recognition Event entry

- Preparation of Resumes and Business Letters
### Unit II: Experiential Learning Project 8 weeks

- Daily Field Logs of detailed observations
- Weekly Directed Reflective Writing—suggested list with open option
- Weekly debriefing and sharing of field observations
  - Focus on each of SCANS competencies
  - Applications to variety of concept maps
- Continued development of concept maps as evidence of SCANS and critical thinking skills mastery, to be incorporated into rubric assessments & autobiography

### Unit III: Completion of Portfolio 4 weeks

- Completion of Competitive Recognition Event and Summary
- Compilation of field logs
- Compilation of concept maps and reflective writings
- Completion of multimedia project and presentation to invited staff and students
- Completion of autobiography and scholarship portfolio
APPENDIX B:

COMPETITIVE RECOGNITION EVENTS
## INDIVIDUAL EVENTS

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
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<tbody>
<tr>
<td>Child Development</td>
<td>Designed to give students the opportunity to develop and refine child development skills. Participants demonstrate their ability to select and present a song or story to a group of preschool children. Judging is based on the participant’s use of visuals or props, the ability to stimulate the children’s imagination, and the children’s participation.</td>
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<tr>
<td>Commercial Food Preparation</td>
<td>Participants demonstrate competencies in preparing three specified food products for a commercial food service establishment. Within a 30-minute planning period and 45-minute preparation period, students demonstrate their knowledge and skills by using industrial food service procedures and tools, as well as work habits reflective of industry standards.</td>
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<tr>
<td>Consumer Education</td>
<td>Emphasizes the importance of making sound consumer decisions and being an informed consumer. Students develop critical thinking skills and effective presentation skills as they prepare for and present an eight minute speech. Judging is based on the mechanics of the presentation and the accuracy and application of the information.</td>
</tr>
<tr>
<td>Culinary Arts Display</td>
<td>Designed to give participants an opportunity to demonstrate their skill in presenting foods for a buffet table and for fine restaurant dining. Within a maximum period of 30 minutes, participants will exhibit culinary skills in the selection, workmanship and presentation of food in one of a variety of categories including advanced presentation cakes and tortes, appetizers, art display, breads, decorated wedding cakes, and patisserie.</td>
</tr>
<tr>
<td>Fashion Design</td>
<td>Allows participants to demonstrate the fashion design skills necessary to communicate an idea and describe a garment concept. Participants prepare three original fashion illustrations or sketches to be contained in a collection or line of apparel suitable to the specialization and price range of a design house or apparel manufacturing firm. An oral presentation and questions from the judges also are part of the event.</td>
</tr>
<tr>
<td>Event</td>
<td>Description</td>
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<td>-------------------------------------------</td>
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<tr>
<td><strong>Interior Design</strong></td>
<td>Allows participants to demonstrate skills and knowledge of interior design by presenting and discussing an original design project planned for a specific person or place of business. The participant prepares a mat presentation including the floor plan, cost breakdown, and samples of all wall treatments, floor coverings, window treatments and fabrics.</td>
</tr>
<tr>
<td><strong>Job Application and Interview</strong></td>
<td>Participants develop abilities and techniques for completing job applications and interviews. Each participant selects a job relating to home economics and completes a mock interview and a portfolio-complete with application form, resume and work samples. The job is within the participant's vocational objective and one for which he/she currently qualifies.</td>
</tr>
<tr>
<td><strong>Menu Planning &amp; Table Display</strong></td>
<td>Provides the opportunity to demonstrate skill in menu planning. Menu and table display are to reflect a theme, which varies from year to year. Participants plan a lunch or dinner menu for two people and bring all materials for a table display. A nutritional analysis of the meal and a 20-minute exam also are included in the judging.</td>
</tr>
<tr>
<td><strong>Prepared Speech</strong></td>
<td>Designed to develop leadership skills through public speaking activities and to stimulate interest in community leadership and citizenship. Participants prepare a six to eight minute speech and are judged on organization, accuracy, opening and closing, voice, platform, basic mechanics, written outline and effectiveness of speech.</td>
</tr>
<tr>
<td><strong>Sewing Proficiency</strong></td>
<td>Enables participants to demonstrate construction techniques, effective management skills, and knowledge of the consumer aspects of clothing selection, design and care. Participants construct a sewing project from a specified pattern within a 60 minute time period. Judges evaluate the project based on construction techniques, appearance of project and creativity.</td>
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<tr>
<td><strong>Team Events</strong></td>
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<tr>
<td><strong>Energy &amp; Resource Conservation</strong></td>
<td>Creates an awareness of the need for energy and resource conservation, teaches individuals how to conserve energy and other resources more efficiently, and gives students experience in developing effective presentation skills. Using visual aids, each team of two participants gives a six to eight minute presentation on an aspect relating to energy and resource conservation.</td>
</tr>
<tr>
<td><strong>Nutrition Education</strong></td>
<td>Allows an increase in student knowledge of nutrition principles and gives experience in developing effective presentation skills. Teams prepare and present a six to eight minute presentation on a nutrition principle using originally developed methods.</td>
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<tr>
<td>Parliamentary Procedure</td>
<td>visual aids or media material. Judging is based on such components as visuals, speech mechanics, and information accuracy.</td>
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<tr>
<td>Chapter Events</td>
<td>Encourages the use of parliamentary procedure in chapter meetings, provides students with opportunities to develop leadership skills and encourages the instruction of parliamentary procedure in the home economics classroom. A team of five members conducts an eight minute meeting and are judged on effectiveness of proper parliamentary procedures.</td>
</tr>
<tr>
<td>Chapter Exhibit</td>
<td>Throughout the state, FHA-HERO chapters have developed unique projects. This event gives chapters the opportunity to receive publicity for the projects and to motivate other chapters. The exhibit is judged on theme, graphic layout, information, originality, construction and quality.</td>
</tr>
<tr>
<td>Community Involvement</td>
<td>Recognizes chapters that develop outstanding in-depth community projects based on the goals and purposes of the organization. Participants complete a final written report of the project and deliver an oral presentation. Judging is based on various aspects of the oral presentation and on the value of the project to the community.</td>
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</tbody>
</table>
APPENDIX C:

CONCEPT MAP MODELS
Math Standards required & within the career field.

Home Economics Standards: content-specific

Technology Standards: systems, hardware, software

History Standards: career history, social trends, & economics of

Language Arts: written & oral communication skills required.

Science Standards: required & applied within the field.

SCANS Skills
Academic Foundation & Competency Skills

Figure 1. Integrated web concept map applied to visualize integration of academic and vocational standards.
Figure 2. Two model concept maps used to depict stages, steps, or cycles of events.
Figure 3. Two concept maps applied alternately to describe a central idea, concept, or process, complete with complex attributes.
Figure 4. A concept map frequently used to show causal interaction of complex events.

Figure 5. A concept map used to show causal information, hierarchy, or branching procedures.
### Compare/Contrast Matrix

<table>
<thead>
<tr>
<th>Attribute 1</th>
<th>Name 1</th>
<th>Name 2</th>
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<tbody>
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<td>Attribute 2</td>
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<tr>
<td>Attribute 3</td>
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</table>

**Figure 6.** A graphic organizer easily adapted to show similarities and differences between two (or more) things or ideas.
Figure 7. A concept model designed to show the nature of an interaction between persons or groups in terms of conflict or cooperation.
Figure 8. A model applied to problem resolution.

Figure 9. A concept map easily applied to graphing degrees, shades, or ratings scales.

Note. Adapted from Jones, Pierce, and Hunter, 1989, North Central Regional Educational Laboratory, Oak Brook, Illinois.
APPENDIX D:
DIRECTED WRITING PROMPTS
<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>CONCEPT MAPS</th>
<th>WRITING PROMPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine Situational Events</td>
<td>Figure 1. <strong>Series of Events</strong></td>
<td>Analyze in detail a specific event. What happened, in sequence? How did it start? How did it progress? When and how did it end? Identify the things, people, content, final outcome of the event.</td>
</tr>
<tr>
<td>Workplace Procedure</td>
<td>Figure 2. <strong>Cycle of Stages</strong></td>
<td>Analyze a cycle of stages, of procedure or production. How does it start? How does it progress through the stages of the cycle? How does it end? Identify the things, people, content, &amp; final outcome of the cycle.</td>
</tr>
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</table>
| System of Procedures          | Figure 5. **Network Tree**        | Analyze a series of procedures. Demonstrate:  
  • branching of subprocedures  
  • interconnectedness of procedures |
| Workplace Competencies        | Figure 3.  **Spider Map**         | For any one of the SCANS Competencies, identify:  
  • the major skill group  
  • the main sub-categories  
  • the qualities attributed to each of the categories |
| Complex Situation Analysis    | Figure 4. **Fishbone Map**        | Select a unique situation, which impacted the workplace, positively or negatively.  
  • State the result.  
  • Identify the causes in detail.  
  • Isolate pivotal factors which could have reversed or altered the result. |
<table>
<thead>
<tr>
<th>Problem Resolution</th>
<th>Figure 8. <strong>Problem-Solution Frame</strong></th>
<th>Identify a current problem. Generate several alternative solutions. Anticipate likely results or consequences of each. Select most favorable end result and explain why.</th>
</tr>
</thead>
</table>
| Comparative Evaluation | Figure 6. **Compare/Contrast Matrix** | Compare and contrast the behavioral styles of two fellow employees. (Anonymity maintained by designating them A & B)  
  - Select at least three pertinent SCANS skills  
  - Compare and contrast their respective competency & effectiveness at work |
| Competency Rating | Figure 8. **Continuum/Scale** | Apply any SCANS skill for which you have targeted improvement goals. Identify low and high ratings. (Use the descriptors per the SCANS rubrics) Describe growth in terms of degrees of progress. |
| Personal Dynamics | Figure 7. **Human Interaction Outline** | Assess the effectiveness of your working relationship with your supervisor or workplace superior.  
  - Identify your respective goals  
  - Describe concrete examples of your interactions with each other  
  - Evaluate the outcome in terms of yourself and your superior |
APPENDIX E:

SCANS PRE AND POST ASSESSMENT
### SCANS COMPETENCIES AND FOUNDATIONAL SKILLS

<table>
<thead>
<tr>
<th>RESOURCES:</th>
<th>Acquired</th>
<th>Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifies, organizes, plans, allocates.</td>
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<tr>
<td>Time: Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules.</td>
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<tr>
<td>Money: Uses or prepares budgets, keeps records and makes adjustments to meet objectives.</td>
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<tr>
<td>Materials: Acquires, stores, allocates and uses materials or space efficiently.</td>
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<tr>
<td>Human Resources: Accurately assesses skills, evaluates performance and utilizes feedback to set goals.</td>
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</tbody>
</table>

**INTERPERSONAL:**
Works with others.

| Participates a Member of a Team: Contributes to group effort. |          |        |
| drifting Others New Skills: |          |        |
| Serves Clients/Customers: Works to satisfy customers' expectations. |          |        |
| Exercises Leadership: Communicates ideas, persuades and convinces others |          |        |
| Negotiates: Works toward agreements involving exchange of resources, resolves divergent interests. |          |        |
| Works with Diversity: Works well with men and women from diverse backgrounds. |          |        |

**INFORMATION:**
Acquires and uses information.

| Acquires and Evaluates Information |          |        |
| Organizes and Maintains Information |          |        |
| Interprets and Communicates Information |          |        |
| Uses Computers to Process Information |          |        |

**SYSTEMS:**
Understands complex inter-relationships

<p>| Understands Systems-- knows how social, organizational, and technological systems work and operates effectively with them. |          |        |</p>
<table>
<thead>
<tr>
<th>Monitors and Corrects Performance—distinguishes trends, predicts impacts on system operations, diagnoses deviations in systems’ performance and corrects malfunctions.</th>
<th>Acquired</th>
<th>Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improves or Designs Systems—suggests modifications to existing systems and develops new or alternative systems to improve performance.</td>
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<tr>
<td><strong>TECHNOLOGY:</strong></td>
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<tr>
<td>Works with a variety of technologies</td>
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<tr>
<td>Selects Technology—chooses procedures, tools or equipment including computers &amp; related technology</td>
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<tr>
<td>Applies Technology to Task—understands overall intent and proper procedures for setup and operation of equipment</td>
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<tr>
<td>Maintains and Troubleshoots Equipment—prevents, identifies, or solves problems with equipment</td>
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<tr>
<td><strong>BASIC SKILLS:</strong></td>
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<tr>
<td>Reading—locates, understands, and interprets written information in prose, manuals, graphs, schedules</td>
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<tr>
<td>Writing—communicates thoughts, information, messages, in written letters, reports, graphs, charts</td>
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<tr>
<td>Arithmetic/Mathematics—performs computations &amp; problems accurately, choosing appropriate techniques</td>
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<tr>
<td>Listening—receives, attends to, interprets and responds to verbal messages and other cues</td>
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<tr>
<td>Speaking—organizes ideas and communicates orally</td>
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<td><strong>THINKING SKILLS:</strong></td>
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<td></td>
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<tr>
<td>Creative Thinking—generates new ideas</td>
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<tr>
<td>Decision-Making—sets goals, generates alternatives, considers risks, evaluates and chooses best alternative</td>
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<tr>
<td>Problem Solving—recognizes problems, devises and implements plan of action</td>
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<tr>
<td>Seeing Things in the Mind’s Eye—organizes and processes symbols, pictures, graphs, information</td>
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<tr>
<td>Knowing How to Learn—uses efficient learning techniques to acquire and apply new knowledge and skills</td>
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<tr>
<td>Reasoning—discovers a rule or principle underlying the relationship between two or more objects and applies when solving a problem</td>
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<tr>
<td>PERSONAL QUALITIES:</td>
<td>Acquired</td>
<td>Needed</td>
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<tr>
<td>Responsibility—exerts high level of effort and perseveres towards goal attainment</td>
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<tr>
<td>Self-Esteem—believes in self-worth and maintains positive view of self</td>
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<tr>
<td>Sociability—demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings</td>
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</tr>
<tr>
<td>Integrity/Honesty—chooses ethical courses of action</td>
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</table>
APPENDIX F:

AUTOBIOGRAPHY
The following guidelines are based upon "Writing Your Essay for the University of California Undergraduate Application for Admission." Nothing has been subtracted from the U.C. guidelines, however, suggestions have been added for incorporating experience and awareness gained from your Internship/Service-Based Learning/Virtual Work-Related projects. Remember this is an opportunity to write about yourself and those experiences, achievements and goals that are most important to you.

First Paragraph—Brief Personal Background

Introduce yourself and your family and discuss the family situation. For example, has anyone in your family attended or graduated from a university or college? Who has influential in encouraging your pursuit of a university education? Include teachers, mentors, etc. Relate to SCANS competencies and how you have developed your greatest personal strengths.

Second Paragraph—School and Community

Discuss unique or interesting facts about your school and community. For example, do you live in a large city or small town? How has your educational experience prepared you for university-level work? Have you been actively involved in your school and/or community? Have you ever been employed? Discuss involvement in Internship/Service Learning/Telementor program with emphasis on SCANS
competencies and skills learned, including problem solving and other critical thinking skills.

Third Paragraph—College and Career Aspirations

Discuss why you want to attend the university and why you are applying to this (UC) campus in particular. Have you selected a field of study? If so, how did you become interested in your intended major and what have you done to develop your interest in this field? Do you have an occupational goal in mind?

Include process through which you researched your career in your Career Connections course and pursued your interest through this Internship/Service Learning/Telementor program. Add epiphany anecdote from your experience, which confirmed your interest in this career.

Fourth Paragraph—Your Academic Record

Discuss your academic experiences. What types of courses have you taken? Which courses have been especially exciting or challenging? Does your grade point average reflect your ability?

Include learning from your experience, increased awareness and SCANS competencies gained, connections made between academics and career-related competencies.

Fifth Paragraph—Values, Goals, Achievements

Discuss what is important to you. Have you received any awards for academic, athletic, or social achievements? What factors or experiences have shaped your values and goals? What activities do you pursue in your spare time?

Your Internship/Service Learning project demonstrates a serious dedication to achieving your goals as well as admirable work ethics. How has this experience helped to shape your personal development...review SCANS Personal Qualities and Interpersonal Skills.

Sixth Paragraph—Conclusion

State your final thoughts.
APPENDIX G:

STUDENT PORTFOLIO CONTENTS
| SECTION ONE: INTERNSHIP | • Internship Project Proposal  
| | • Work Samples  
| | • Internship SCANS Rubric (Appendix H)  
| | • Letters of Recommendation  
| SECTION TWO: CONCEPT MAPS & DIRECTED WRITINGS | • SCANS Pre & Post Assessments  
| | • Concept Maps created from Field Logs  
| | • Reflective Directed Writings  
| SECTION THREE: COMPETITIVE RECOGNITION EVENT | • Entry & Registration Forms  
| | • Project/Photographs  
| | • Judges’ Evaluation Sheets  
| | • Reflective Summary  
| SECTION FOUR: CAREER RESEARCH MULTIMEDIA PROJECT | • Disc and Print Copies of Presentation  
| | • Bibliography  
| | • Multimedia Project Assessment Rubric (Appendix I)  
| SECTION FIVE: BUSINESS WRITING SAMPLES | • Resume  
| | • Letter of Application  
| | • Memos  
| | • Articles  
| SECTION SIX: AUTOBIOGRAPHY | • Copy of Autobiography  

APPENDIX H:

INTERNSHIP ASSESSMENT RUBRIC
### Internship Assessment of Scans Competencies

<table>
<thead>
<tr>
<th>Personal Qualities</th>
<th>1: No Evidence</th>
<th>2: Minimal Evidence</th>
<th>3: Partial Evidence</th>
<th>4: Complete Evidence</th>
</tr>
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<tbody>
<tr>
<td><strong>Responsibility:</strong></td>
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<tr>
<td>- Exerts a high level of effort</td>
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<td>- Perseveres towards goal attainment</td>
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<tr>
<td><strong>Example of evidence:</strong></td>
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<td><strong>Self-esteem:</strong></td>
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<tr>
<td>- Believes in own self-worth</td>
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<td>- Maintains a positive view of self</td>
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<td><strong>Example of evidence:</strong></td>
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<td><strong>Sociability:</strong></td>
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<td><strong>Demonstrates the following:</strong></td>
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<tr>
<td>- Understanding</td>
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<td>- Friendliness</td>
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<tr>
<td>- Adaptability</td>
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<tr>
<td>- Empathy</td>
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<tr>
<td>- Politeness</td>
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<tr>
<td><strong>Example of evidence:</strong></td>
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<td><strong>Self-Management:</strong></td>
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<td>- Assesses self accurately,</td>
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- Sets personal goals,
- Monitors progress,
- Exhibits self-control

**Example of evidence:**

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**Integrity/Honesty:**
- Chooses ethical courses of action

**Example of evidence:**

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**INTERPERSONAL QUALITIES**

**Participates as Member of a Team**
- Contributes to group effort

**Example of evidence:**

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**Teaches Others New Skills:**

**Example of evidence:**

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**Serves Clients/Customer:**
- Works to satisfy clients’ expectations

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Example of evidence:

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Self-Management:
- Assesses self accurately,
- Sets personal goals,
- Monitors progress,
- Exhibits self-control

Example of evidence:

---

Integrity/Honesty:
- Chooses ethical courses of action

Example of evidence:

---

RESOURCES: Identifies, organizes, plans and allocates resources

Time:
- Selects goal-relevant activities
- Prioritizes activities
- Allocates time
- Prepares and follows schedules

Evidence:

---

Money:
- Uses budgets
- Makes forecasts
- Keeps records

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</table>
- Makes adjustment to meet goals

**Evidence:**

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**Materials & Facilities:**
- Uses materials efficiently
- Uses space efficiently

**Evidence:**

---

**Human Resources:**
- Assesses skills
- Distributes work
- Evaluates performance
- Provides feedback

**Evidence:**

---

**SYSTEMS:** Understands complex inter-relationships

Understands Systems:
- Social systems
- Organizational systems
- Technological systems
- Operates effectively with them

**Evidence:**

---

**Monitors and Corrects Performance:**
- Distinguishes trends
- Predicts impacts on system operations

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<td>system operations</td>
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<td>----------------------------------------</td>
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<td>Diagnoses deviations in systems' performances</td>
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<td>Corrects malfunctions</td>
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Evidence:

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<th>Improves or Designs Systems:</th>
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<tr>
<td>Suggests modifications to existing systems</td>
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<tr>
<td>Develops new or alternative systems to improve performance</td>
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Evidence:

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<tr>
<th>TECHNOLOGY: Works with a variety of technologies</th>
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Selects Technology:

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<tr>
<th>Chooses procedures to match the task</th>
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<tr>
<td>Selects appropriate tools or equipment, including computers and related technology</td>
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Evidence:

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<tr>
<th>Applies Technology to Task:</th>
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<tr>
<td>Understands intent and proper procedures for setup and operation of equipment</td>
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</table>
Maintains and Troubleshoots Equipment:
- Prevents problems through proper use
- Identifies or solves equipment problems
APPENDIX I:
MULTIMEDIA PROJECT RUBRIC
### MULTIMEDIA PROJECT
#### ASSESSMENT OF SCANS COMPETENCIES

<table>
<thead>
<tr>
<th>INFORMATION:</th>
<th>1</th>
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<th>4</th>
<th>Total</th>
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<tbody>
<tr>
<td><strong>Acquires and Evaluates Information</strong></td>
<td>Does not meet minimal requirements of resources. Information does not show thoughtful evaluation of data available.</td>
<td>Met minimal requirements of resources. Information used lacks substance or thoughtful evaluation.</td>
<td>Met required resources. Thoughtful selection of available data.</td>
<td>Exhaustive use of resources, print &amp; electronic. Perceptive selection of pertinent data.</td>
<td></td>
</tr>
<tr>
<td><strong>Organizes and Maintains Information</strong></td>
<td>No logical sequence of information. Menus &amp; paths to information not evident. Presentation is confusing.</td>
<td>Some logical sequence of information. Some menus &amp; paths are confusing and/or flawed.</td>
<td>Logical sequence of information. Most menus &amp; paths are clear and direct.</td>
<td>Very logical, even intuitive sequence of information. Menus and paths to all information are clear and direct.</td>
<td></td>
</tr>
<tr>
<td><strong>Interprets and Communicates Information</strong></td>
<td>Knowledge of subject is not evident. Minimal subject coverage. Information is confusing and incorrect.</td>
<td>Subject coverage is incomplete. Some subject information is confusing, incorrect or flawed.</td>
<td>Subject coverage is evident in most of project. Information is clear &amp; accurate.</td>
<td>Extensive and thorough coverage of subject. All information is clear, accurate, &amp; appropriate.</td>
<td></td>
</tr>
<tr>
<td><strong>Uses Computers to Process Information</strong></td>
<td>No video &amp;/or audio enhancements. Use of these tools inadequate or inappropriate.</td>
<td>Limited video &amp;/or audio enhancements. In most cases use of these tools is poor or inappropriate.</td>
<td>Some video &amp; audio enhancements are used to enrich the experience.</td>
<td>Appropriate amounts of video &amp; audio enhancements used effectively to enrich the experience.</td>
<td></td>
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</table>
### INTERPERSONAL SKILLS:

<table>
<thead>
<tr>
<th>Participates as Member of a Team:</th>
<th>The work was not divided equally &amp; few team members contributed to the project.</th>
<th>Most team member participated in some aspect of the work, but workloads varied.</th>
<th>Most team members contributed their fair share to the project.</th>
<th>The work was divided and shared equally by all team members.</th>
</tr>
</thead>
</table>

### BASIC SKILLS:

<table>
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<tr>
<th>Reading:</th>
<th>Understanding of subject is not evident. Minimal sources and/or documentable facts or data. Information is incorrectly interpreted or misapplied.</th>
<th>Understanding of subject is incomplete. Minimal sources and/or documentable facts or data. Information is understood but flawed, incomplete interpretation</th>
<th>Subject coverage is complete and variety of sources used. Some meaningful applications of primary data and relevant interpretatio n.</th>
<th>Extensive and thorough coverage of subject. Wide range of documented data sources. Primary data from charts and graphs selected and interpreted meaningfully.</th>
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<tr>
<td>Writing:</td>
<td>Presentation has five or more spelling errors and/or grammatical errors.</td>
<td>Presentation has three or more misspellings and/or grammatical errors.</td>
<td>Presentation as fewer than two misspellings and/or grammatical errors.</td>
<td>Presentation has no misspellings or grammatical errors.</td>
</tr>
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<td></td>
<td>No use of graphs or flowcharts.</td>
<td>Limited or flawed use of graphs or flowcharts.</td>
<td>Graphs and charts applied appropriately &amp; accurately.</td>
<td>Graphs and charts applied creatively and meaningfully.</td>
</tr>
<tr>
<td>Speaking:</td>
<td>Presentation incomplete, disorganized, unclear, &amp;/or confusing.</td>
<td>Presentation complete. Some parts lack clarity or organization.</td>
<td>Presentation organized &amp; understandable. Lacks enthusiasm.</td>
<td>Presentation well organized. Communicated clearly, fluidly, enthusiastically.</td>
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<tr>
<td>THINKING SKILLS:</td>
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<tr>
<td>Creative</td>
<td>The project is a minimal collection of rehash or other people's ideas. No evidence of new thought.</td>
<td>The project is an extensive collection &amp; rehash of other people's ideas, products, images.</td>
<td>The project shows some evidence of originality, new insights.</td>
<td>This project’s content and ideas show significant evidence of originality &amp; inventiveness.</td>
</tr>
<tr>
<td>Thinking:</td>
<td>• Generates New Ideas</td>
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**TOTAL:** _________
APPENDIX J:
EVALUATIONS
1. Is the proposed internship program proposal, its purpose and design, understandable?
   Yes, very much so. It can easily be placed at our school.

2. Does the curriculum methodology seem sound pedagogically?
   Yes. With the review of literature, the methodology of this project is very sound and of great need at our school.

3. Is the proposed curriculum workable?
   Yes. It would take a considerable amount of time or effort to get this extremely helpful and insightful program plucked into our curriculum.

4. What primary benefits will students receive?
   School to work preparation, hands-on experience for their future goals, scholarship assistance, an extra class for credits, reasons for attending school, etc.

5. Any suggestions to help improve the project?
   I have seen this concept work in another district. Perhaps having some district curriculum personnel see it in action would help.

Evaluator, Title Counselor
Date: 7-5-01
1. Is the proposed internship program proposal, its purpose and design, understandable?
   Yes, its purpose and design is very clear and defined.

2. Does the curriculum methodology seem sound pedagogically?
   Most definitely. What a great opportunity for students to apply classroom skills in the real world and future careers.

3. Is the proposed curriculum workable?
   Yes, however there is a lot of teacher preparation both in the classroom as well as in the community.

4. What primary benefits will students receive?
   Students would gain real world experience and encourage both personal and professional development.

5. Any suggestions to help improve the project?
   Make sure that enough community sites are available for all students that are in the program.

Diane Carter, Internship Teacher 7/12/01
1. Is the proposed internship program proposal, its purpose and design, understandable? YES TO DEVELOP REAL WORLD EXPERIENCES FOR HS STUDENTS AT THE EARLIEST POSSIBLE TIME IN THEIR EDUCATION

2. Does the curriculum methodology seem sound pedagogically?
   Yes The Best Way: Learning By Doing
   WITH LINKS TO THEIR OWN PERSONAL EXPERIENCES
   INTERACTION WITH COMMUNITY IS EXCELLENT WAY TO LEARN

3. Is the proposed curriculum workable?
   EXCEPT FOR REQUIRED COMPETITION. WHERE DOES AVERAGE.Student find the time for VSO club participation AND HOW close to internship experiences are they?

4. What primary benefits will students receive?
   A GREATER EXPOSURE TO CAREER CLUSTERS AND THOSE
close. Internships provide the exposures to
fill the physical and intellectual demands of that career
daily log is that too much of internship sites.

5. Any suggestions to help improve the project?
   Autobiography. Pat 3 Why I want to attend a UC? Why? A large number of Careers do not involve a UC degree - NO ROP Motion?? Any reason...

Evaluator, Title 7/23/01 Date
1. Is the proposed internship program proposal, its purpose and design understandable?

Yes. It provides for students a roadmap for the transference of academic skills and knowledge into real world experiences.

2. Does the curriculum methodology seem sound pedagogically?

Yes. We, as educators, are the facilitators of students' learning. The information that we give them should prepare them with the ability to make choices and to work cooperatively together.

3. Is the proposed curriculum workable?

Yes. It acknowledges the fact that real world experiences are multifaceted; therefore students are able to make choices.

4. What primary benefits will students receive?

Students will be able to transfer skills learned via contextual learning and apply to real world experiences. Students are able to transfer this knowledge in order to make sound and rational decisions based on the information at hand.

5. Any suggestions to help improve the project?

None. Very well documented.

Evaluator, Title

Date 23 Jun 01
REFERENCES


Brown, B.L. (1998) Career Development: A Shared Responsibility. ERIC Clearinghouse on Adult Career and Vocational Education Columbus, OH


