8-1992

Construction of an instrument to assess the service learning model: Establishing concurrent validity and internal reliability

Christopher Anthony Payne
University of Northern Colorado

Order Number 9235588

Construction of an instrument to assess the Service Learning Model: Establishing concurrent validity and internal reliability

Payne, Christopher Anthony, Ph.D.

University of Northern Colorado, 1992

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

CONSTRUCTION OF AN INSTRUMENT TO ASSESS THE SERVICE LEARNING MODEL: ESTABLISHING CONCURRENT VALIDITY AND INTERNAL RELIABILITY

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

Christopher A. Payne

College of Education
Division of Professional Psychology
College Student Personnel Administration

August 1992

THIS DISSERTATION WAS SPONSORED

BY

Nancy A. Scott

Nancy A. Scott, Ed.D.
Research Advisor

Christopher A. Payne

DISSERTATION COMMITTEE

Advisory Professor Trudy Reeder

Trudy Reeder, Ph.D.

Advisory Professor Gerald E. Tanner

Gerald E. Tanner, Ph.D.

Faculty Representative Richard A. Blanke

Richard A. Blanke, Ph.D.

DEAN OF THE GRADUATE SCHOOL

Lyle R. Carter

Examination Date of Dissertation July 1, 1992

ABSTRACT

Payne, Christopher A. Construction of an Instrument to Assess the Service Learning Model: Establishing Concurrent Validity and Internal Reliability. Published Doctor of Philosophy dissertation, University of Northern Colorado, 1992.

A paper and pencil test was constructed to investigate the existence of phases as identified by the Service Learning Model (Delve, Mintz, & Stewart, 1990). Subjects with no structured exposure to service-learning activities residing in the residence halls at the University of Northern Colorado (UNC) (n = 70) and subjects involved in service-learning programs coordinated by the Office of Community Service at Colorado State University (CSU) (n = 65) participated in the study during the spring of 1992.

Research objectives provided guidelines for developing the test format and writing clear and understandable items that reflected the affective, behavioral and cognitive ways in which students experience and understand what it is to be a responsible citizen. No significant relationship was observed between the phases of the test instrument and parallel learning modes as measured by the Learning-Styles Inventory. It was suggested that learning styles transcend the different ways to experience and understand what it is to be a responsible citizen, and therefore, do not provide

an appropriate measure of concurrent validity. The internal reliability for each phase of the test instrument was lower than desired, however, the coefficients of internal consistency showed promise ranging from $\underline{r}$ = .5266 for Phase 1 to $\underline{r}$ = .7582 for Phase 3.

Post-hoc tests comparing mean phase scores between colleges and between categories of self-reported duration of involvement in helping activities were conducted to supplement a statement of validity for the test instrument. Differences for mean phase scores between subjects at UNC and CSU were significant and in the predicted direction. Similar results were observed when mean phase scores for subjects with eight or fewer contacts over the prior academic year were compared to subjects with nine or more contacts over the same period. However, it was unclear if these differences were influenced by involvement in service-learning activities or personal variables such as age and class status.

More research needs to be conducted before the Service-Learning Model can be empirically confirmed or rejected. Recommendations identify several suggestions for further investigating the validity and reliability of the test instrument.

ACKNOWLEDGMENTS

It is difficult to find the words that accurately express the appreciation and gratitude I have for the many people who gave practical meaning to the developmental concept of challenge and support that echoed so often throughout our coursework.

I wish to thank the members of my committee for their understanding and patience: Dr. Richard Blanke for the extra time and effort he spent to help strengthen the study; Dr. Trudy Reeder for her sustained confidence in me; and Dr. Gerald Tanner for his thoughtful insight and enthusiasm for my research.

My deepest gratitude and respect, however, is reserved for my research advisor and friend, Dr. Nancy Scott. You demonstrated your confidence in me by allowing me to work with members of the committee at critical times in the process, and in doing so, you also demonstrated the confidence and security you have in yourself. Thank you for touching my life.

There were many friends -- too many to mention -- who demonstrated unconditional support for my efforts. However, Larry and Linda Gibson supported me in more ways than they will ever know, and I wish to acknowledge them in this

way as an expression of how much their friendship means to me.

Finally, I had the good fortune to meet two colleagues who had the greatest impact on my success and persistence throughout my coursework and the dissertation process: Dr. Jim Barbieri and Dr. Sean Fox. When I look back on this entire process, my life is much richer for having shared a common experience with two good friends.

TABLE OF CONTENTS

Page

APPENDICES

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

The hope to maximize moral and civic responsibility as an outcome of higher education appears in the mission statements of many colleges and universities. It may be argued that successful achievement of this goal is ultimately measured by the social contribution of an institution's graduates (Sanford, 1967). Given this responsibility, it seems reasonable that "college has been regarded among a number of fundamental social/cultural institutions which prepare the young adult for concerned and involved citizenship in a democracy" (Pascarella, Ethington, & Smart, 1988, p. 412). Often left to chance, however, the development of responsible citizenship remains an assumed outcome of the educational process.

Given the onset of increased pressure for outcomes assessment, faculty and administrators are continually held accountable for demonstrating that college attendance has a moderating effect in the development of civic responsibility. This is especially true when institutional goal and mission statements profess that "the University environment and services will help students develop a sense of self-worth, self-confidence, a respect for diverse cultures, an awareness of important social and moral issues and a

concern about the welfare of others" (UNC Bulletin, 1990-92, p. 7). This implies that college attendance will foster the acquisition of skills necessary to be a responsible citizen. Furthermore, it implies that students will use these skills to address issues of social concern after graduation. This practical application can be demonstrated in a variety of ways, such as helping a service organization that exists to eliminate hunger, homelessness, illiteracy or other social inequities. Acquiring the experience for how to help does not necessarily require an education. Understanding why one should act, however, is a unique and expected outcome of the educational process.

The development of civic responsibility is also implied as a consequence of the environment and services provided by the institution. In this context, "environment" and "services" translate into academic instruction and student services offered by the institution. The cognitive nature of classroom learning such as reflection, discussion, observation, and theoretical abstraction has historically been recognized as making an important contribution to developing civic values and responsibility (Crosson, 1983).

Experience outside the classroom can also contribute towards this outcome. Many of these out-of-class experiences are coordinated under the auspices of student services, and focus on developing intellectual, social, cultural, personal, physical and spiritual traits of the

individual, often described as holistic development. As independent functions, both academic instruction and student services can make important contributions to developing civic responsibility as a valuable outcome of the educational process. However, it is the integration of classroom experiences and student services which holds the greatest potential as an untapped resource in higher education.

There are a variety of functions coordinated under the auspices of student services. Student personnel administrators deliver these services in diverse environments such as student housing, food service, student activities, personal counseling, and health services. Admissions and often career counseling and academic advising are also included as student services. In this context, many times student services are viewed as peripheral to the functions of research and teaching that have historically been valued as the purpose of higher education (Abeles, 1969; Altbach & Berdahl, 1981; Garland, 1985; Leonard, 1956; Riesman, 1980). Although student service administrators deliver programs and services that help students succeed, this purpose has not always been as closely tied to the institutional mission as has academic instruction. However, in the 1960s, the developmental contribution of programs and services in student services began to receive attention (Creamer, 1990). Today this developmental connection is more important than ever before, especially given the

current environment of legislators, accrediting agencies, and constituents demanding an efficient and effective use of financial and human resources in education.

As mentioned, student services encompasses a variety of programs and services that, for the most part, influence out-of-class activities. Particularly in the case of social, cultural, and recreational activities, these efforts have been termed extracurricular, perpetuating their image as peripheral to the curriculum. However, because of the potential that exists when integrating classroom learning and student services, the dualistic mindset that these two functions operate independent of each other must change. If integration is truly possible, then programs and services coordinated by student service administrators can be structured to engage the educational mission of the institution. As such, student services should be considered as co-curricular - "skillfully organized for the use of their learning values in furthering the development of students" (American Council on Education, 1989, p. 26).

In this context, the perception of the student service administrator must also change. If student services actually have the potential to directly engage the educational mission of the institution, than surely student personnel administrators are as much educators as their academic counterparts. While this educator role in student services is debated in the literature (Garland, 1985), the potential for student personnel administrators to be educators serves

as a basic assumption of the relationship between student and academic services in this study.

Student service programs that encourage students to help others in need is one such example of an activity that has the potential to be integrated with classroom learning. Often called volunteerism, this act is characterized as a tendency to help someone, either directly or indirectly, other than family members or close friends (Serow, 1989). The act can be further defined to involve an individual or organization beyond the university community. A student who volunteers to help coordinate a panel discussion in the residence halls primarily benefits students in the university community. However, a student who volunteers to help deliver meals to people who are unable to leave their home has impact beyond the university community. Therefore, all community service work is volunteer work, but not all volunteer work is community service work. The distinction between the two lies in the recipient of the service effort.

The concept of community service in higher education has been a relatively spontaneous and unstructured volunteer experience. Coordinated primarily by student services personnel, it has been labeled as just another service provided to compliment the classroom experience. The developmental implications of integrating community service with classroom learning epitomizes the potential to establish a relationship between academic instruction and

student services. It also provides an example of how student services personnel can serve as educators who make a valuable contribution to the institutional mission. In the spirit of community service, the integration of community service and classroom learning has resulted in the concept of service-learning - "a twenty-year-old approach to experiential (or internship) education which developed out of concerns expressed in the sixties and seventies for active, experiential-learning opportunities related to community service, community development, and social change" (Little, 1979, p. 45).

Need for the Study

Recently, secondary and post-secondary schools have experienced a resurgence of community service activities. Coupled with the trend to require community service as a critical experience in the development of responsible citizenship, the rationale for promoting and coordinating community service activities takes on new meaning. Serow (1989) stated that what is most striking about this trend is that it has been implemented without much empirical evidence. As an initial effort to address this void, Delve, Mintz, and Stewart (1990a) proposed the Service-Learning Model (SLM) to identify common ways in which students learn what it means to be a responsible citizen. A review of the literature revealed the work by Delve et al. (1990a) as the most comprehensive attempt to describe this learning in cognitive and psychosocial terms.

Delve et al. (1990a) identified several institutions including Stanford University, Georgetown University, University of Maryland, College Park and Crieghton University currently using the SLM as a basis for promoting and coordinating community service activities. At the same time, they also acknowledged that the SLM is without empirical confirmation.

The ability to identify and distinguish different ways in which students experience and understand what it is to be a responsible citizen can serve as a springboard for future research. If a test instrument can be constructed to identify different ways to experience and understand what it is to be a responsible citizen, perhaps the traditionally unstructured and spontaneous nature of the volunteer experience could be strengthened to directly engage the educational mission of the institution. Ultimately, "through college-and university-supported service-learning opportunities, students will develop a better understanding of and care for their fellow human beings and thereby become more accepting of our global interdependency" (Delve et al., 1990a).

Evolution of the Service-Learning Model

Delve et al. (1990a) noticed the emergence of several common themes as a result of discussions with and observations of college students involved in community service. Differences between themes seemed to depict community

service as a way to learn what it is to be a responsible citizen. Accordingly, Delve et al. (1990a) primarily utilized the cognitive theories of Perry (1968), Kohlberg (1975), and Gilligan (1982) to hypothesize how community service can contribute to the development of civic values and responsibility. When combined with the themes discovered through observation and discussion, the framework for the Service-Learning Model (SLM) (Delve et al., 1990a) evolved.

As defined by Delve et al. (1990a) the SLM is "a theoretical framework, from which service-learning interventions can develop, enhances students' educational experiences, fosters values development, and encourages responsible citizenship" (p. 7). The SLM identifies four different ways in which students experience and understand what it is to be a responsible citizen. The authors labeled these four different ways as Exploration, Clarification, Realization, and Activation. In addition, the authors proposed a fifth concept called Internalization which is more descriptive of the development that occurs as students apply what it is to be a responsible citizen. These five different concepts make up the "structure" of the SLM.

> A structure is essentially a set of assumptions which acts as a filter or set of lenses for defining how an individual will tend to perceive, organize, and evaluate experiences and events. Less directly, a structure also will affect how an individual will tend to behave and feel in response to those experiences. (Rodgers, 1980, p. 14)

Exploration, Clarification, Realization, and Activation are the set of assumptions for the SLM - each one representing a different way an individual will perceive, organize and evaluate as well as behave and feel in response to a community service experience. Delve et al. (1990a) use the term "phase" to describe the unique affective, behavioral and cognitive qualities characteristic of each way to experience and understand what it is to be a responsible citizen.

The use of the term phase as a way to describe the structure of the SLM is subject to interpretation. It is clear that the authors intended to suggest that these phases should be practiced in sequence and that development occurs as a result of incorporating each of these phases in the learning cycle. However, it is unclear if the authors intended each phase to represent different ways of learning or if students are learning different things in each phase. For example, it is unclear if the Concrete Experience phase represents a unique way to experience and understand what it is to be a responsible citizen in comparison to the Clarification phase, or if the Concrete Experience phase represents learning different things about the community service experience. In order to construct an instrument that will identify and differentiate between the phases of the SLM, questions of this nature must be clarified.

For the purpose of this study, the concept of phase was defined as a different and unique way to experience and

understand what it is to be a responsible citizen. Learning styles as identified by Kolb (1984) served as the basis for establishing these differences. Furthermore, these different ways to experience and understand what it is to be a responsible citizen were described in affective, behavioral and cognitive terms. These affective, behavioral and cognitive orientations were written as items that collectively comprised the test instrument. Theoretically, a test instrument of this nature can identify that the different phases of the SLM exist and, accordingly, can distinguish one phase from another.

The ability to identify and distinguish the existence of these different phases precludes any developmental assumptions of the SLM assumed by the authors. Therefore, it is important to clarify that this study did not address the sequential or developmental assumptions of the SLM as presented by the authors. This includes the Internalization phase. Because the Internalization phase does not meet the criteria of a different and unique way to experience and understand what it is to be a responsible citizen, the test instrument did not assess the existence of this phase. Characteristics of each phase will be described briefly.

Phase 1: Exploration. This phase involves new opportunities to get involved and help others. Students may prefer to experience what it is to be a responsible citizen without having direct contact with the individual or

community served. For instance, a canned food drive does not require that the student have a face-to-face interaction with the people or issues of homelessness and hunger that underlie the reason for collecting food. This reflects the nature of a traditional volunteer experience that merely exposes the student to the benefits of helping others.

Phase 2: Clarification. Characteristic of this phase are students who prefer to experience what it means to be a responsible citizen by exploring a variety of service options. Therefore, a student may solicit funding over the telephone to help raise money for a community organization, tutor young children at a local elementary school and participate in a dance marathon to raise money for cancer research. "Through the diversity of experience with friends and at the placement sites, the students begin to clarify what is important to them" (Delve et al., 1990a).

Phase 3: Realization. As students begin to combine experience and understanding, they begin to realize the contribution they can make to the individual or community served. Learning of this nature is characteristic of this phase. Up to this point, motives for involvement have generally been altruistic and egoistic (Fitch, 1987). The student who recognizes the reciprocal relationship that exists with the individual or community served is moving beyond mere experience and beginning to understand what it means to be a responsible citizen.

Phase 4: Activation. This phase is preferred by students who become deeply involved with the individual or community served as a way to understand what it means to be a responsible citizen. The frequency and duration of the service effort is longer and consistent. Students may consider lifestyle and career changes to reflect their commitment to the individual or community served.

Internalization. According to Delve et al. (1990a) "the internalization phase describes those few students who fully integrate their community-service experience into their lives and, as a result, make lifestyle and career decisions consistent with the values gained from such experience" (p. 17). Because the phase does not meet the criteria for experiencing or understanding what it is to be a responsible citizen, it was not included as part of this study.

Purpose of the Study

Although proposed as a developmental model, the phases of the SLM have yet to be empirically confirmed (Delve et al., 1990a). Therefore, the purpose of this study was to construct a test instrument in order to investigate the existence of phases as proposed by the Service-Learning Model (Delve et al., 1990a). Correlations with the Learning-Style Inventory (Kolb, 1985) established baseline validity for the test instrument. Internal reliability for each phase of the test instrument was established by

correlating each item with the total score for its respective phase.

Research Objectives

Research Objective 1: Final Item Selection

A research objective of this study was to investigate the clarity and readability of the items on the initial test instrument. In addition, an item analysis identified those items that made the greatest contribution to the total score for each phase of the test instrument. As a result of this objective, each item on the final test instrument was clear, understandable, and would demonstrate a relationship with the total score for its respective phase.

Research Question 2: Establishing Concurrent Validity

A research objective of this study was to investigate the validity of the test items by correlating the test instrument with the Learning-Style Inventory (Kolb, 1985).

Research Objective 3: Establishing Internal Reliability

A research objective of this study was to investigate the internal reliability for each phase of the test instrument by computing a coefficient of internal consistency obtained from a single test administration.

Limitations of the Study

Two primary sources have been identified as weaknesses of the study: assumptions underlying the Service-Learning Model and assumptions underlying construction of the test instrument. Although these assumptions will be addressed separately, both sources are considered as limitations of the study.

Assumptions Underlying the Service-Learning Model

Creating an instrument to assess the developmental impact of the phases of the Service-Learning Model (Delve et al., 1990a), and creating an instrument to establish if the phases exist are two very different ambitions. Although proposed as a developmental model, the phases of the SLM have yet to be empirically confirmed (Delve et al., 1990a). Delve et al. (1990a) identified several limitations of the SLM. These include limitations for (a) the developmental nature of the Internalization phase, (b) the tendency to categorize the phases of the SLM according to chronological age, and (c) the developmental implications of moving from charity to justice as a way to demonstrate responsible citizenship.

Many of these limitations exist as a consequence of the developmental nature of the SLM. The SLM implies that processing occurs in sequence. Furthermore, the developmental assumptions of the SLM suggest a cyclical progression through each phase, moving "the learner in a spiral

motion to a new level of learning experiences" (Stewart, 1990, p. 34). However, the purpose of this study was to construct a test instrument to investigate if these phases exist. Any developmental implications of the SLM suggested by the authors will be reserved for future studies.

Assumptions Underlying Construction of the Test Instrument

In addition, some of the assumptions used in constructing the test instrument may be different from the explanation of the SLM as advanced by the authors. Four such differences deserve mention.

First, the authors defined service-learning as a process whereby "students apply their classroom learning to inform and understand an individual or community being served . . ." (Delve, Mintz, & Stewart, 1990b, p. 3), which implies utilization of skills and knowledge acquired in the classroom. However, because the purpose of the test instrument is to investigate the different ways students experience and understand what it is to be a responsible citizen, the relationship between classroom learning and community service will not be considered.

Second, items of the test instrument were developed based on the literature review and past experience with community service, and placed in phases accordingly. Therefore, each item may not correlate with its respective total phase score as well as if the item were statistically placed by factor analysis. This may also prove to be a

limitation when correlating one phase of the test instrument with the other phases of the test instrument.

Third, Delve et al. (1990a) utilized the cognitive theories of Perry (1968), Kohlberg (1975), and Gilligan (1982) to hypothesize how community service can foster ethical and moral development in college students. This establishes a foundation for the cognitive nature of understanding that is implied in the SLM. However, it ignores the psychological and social nature of experiencing that exists as a result of involvement in community service.

Although it is not uncommon to integrate psychosocial and cognitive theories (Widick, Parker, & Knefelkamp, 1978), the resulting theory or model has empirical challenges. "While finding both issues addressed in one theory has been a great source of appeal (and has stimulated many thoughtful questions and activities both in research and practice), it has also made research difficult" (King, 1978, p. 40). However, the dynamic interaction of these two theories has also been widely accepted (Miller & Winston, 1990; Polkosnik & Winston, 1989). The items on the test instrument were written to reflect the qualities of affect, behavior and cognition that combine to describe how students experience and understand what it is to be a responsible citizen.

Finally, it is an assumption that learning style is one of many factors that can influence how students experience and understand what it is to be a responsible citizen.

Just as the SLM is proposed to assess different ways students experience and understand responsible citizenship, so is learning style proposed to assess different ways in which students learn how to be a responsible citizen. Stewart (1990) identified the Learning-Style Inventory (Kolb, 1985) as one measure which parallels the phases of the SLM. However, because learning style is not a perfect measure of how students experience and understand what it is to be a responsible citizen, this could be considered a limitation of the study.

The limitations acknowledged by Delve et al. (1990a) combined with the shortcomings identified when constructing an instrument to assess the phases of the SLM allow for a variety of possible interpretations. Therefore, it is important to recognize that this study has inspired more questions than answers about the different ways in which students experience and understand what it is to be a responsible citizen.

Definition of Terms

Community service.

> In contemporary usage, the term community service applies to any unpaid activity undertaken for the good of the community at-large or of particular individuals other than family members and close friends. The core of the concept, therefore, is that help is freely provided to strangers. (Serow, 1989, p. 106).

Because the nature of volunteerism and community service involve similar motives and perceived benefits, there is a very fine line that discriminates between these

two behaviors. For the purpose of this study, it is necessary to distinguish between on-campus and off-campus service. Although it is acknowledged that on-campus participation is a component of involvement that contributes to student development (Astin, 1984; Lipton & Garza, 1978; Williams & Winston, 1985), community service as an off-campus experience (or at least targeted at an issue off-campus) requires effort that transcends the immediate campus community.

Co-operative education. Keeton and Tate (1978) defined co-operative education (co-op) as an experience "in which the student either alternates terms on campus in classroom-based studies with terms away from campus in employment or carries on these activities concurrently" (p. 5).

Direct service. As defined by Delve et al. (1990a), direct service is face-to-face interaction with the individual or community served, irrespective of environmental setting.

Indirect service. As defined by Delve et al. (1990a), service of an indirect nature represents a physical distance between the server and the individual or community served. A common example would be a fund raiser held on-campus and the recipient is an individual or organization outside the campus community.

Internship. "Typically a one-time work or service experience involving students who have already attained

considerable academic preparation related to a professional field" (Sovilla, 1989/90, p. 74).

Nondirect service. As defined by Delve et al. (1990a), nondirect service "involves an individual in the actual environment of the population being served, but not in direct contact with the client population" (p. 11).

Service-learning. According to Delve et al. (1990b), "it is a collaborative effort whereby students apply their classroom learning to inform and understand an individual or community being served: In turn, students are informed by the individual or community about their needs, concerns, history, and culture" (p. 3).

Service-Learning Model (SLM). The Service-Learning Model has been proposed by Delve et al. (1990a) as having the phases of Exploration, Clarification, Realization, Activation, and Internalization. These phases provide the foundation for structuring appropriate challenges and supports in order to promote values development and civic responsibility.

Test instrument. The test instrument is the instrument proposed to investigate the existence of phase preferences for Exploration, Clarification, Realization, and Activation as proposed by the Service-Learning Model (Delve et al., 1990a).

Volunteer. Christenson (1982), citing Corpus Juris 2d, a legal encyclopedia, defined volunteer as "meaning one who enters into service of his [her] own free will; one who

gives his [her] service without any express or implied promise of remuneration. . . . one who merely offers his [her] service on his [her] own free will, as opposed to one who is conscripted" (p. 17).

CHAPTER II

REVIEW OF THE LITERATURE

This chapter will establish a philosophical and theoretical foundation for the concept of service-learning. Given this framework, literature and research in three related areas will be reviewed including volunteerism, academic-sponsored experiential learning and co-curricular student involvement. The chapter will conclude with an overview of the Experiential-Learning Model (Kolb, 1984) as a prelude to describing the phases of the Service-Learning Model (SLM) as proposed by Delve, Mintz, and Stewart, (1990a).

The review incorporates literature and research from searching the computer data bases of Educational Resource Information Center (ERIC), the American Psychological Association (PsycLit), and the American Sociological Association (Sociofile). In addition, a Computer Based Reference System (COBRA) search was employed specifically to access Dissertation Abstracts. The National Society for Internships and Experiential Eduction (NSIEE) was used as a source for literature and research with a specific focus on service-learning. Combining service and learning: A resource book for community and public service, a series of

three volumes specifically related to service-learning, was used extensively for the literature review and subsequent instrument development.

The recent focus on educational reform and outcomes assessment has renewed the commitment to strengthen undergraduate education. However, initial reform strategies appeared to emphasize the importance of classroom learning and ignore the practical experience necessary to inspire values development and civic responsibility (A Nation at Risk, 1990). "Thus, alongside the national call for renewal and strengthening of undergraduate education, there has been successfully rekindled a debate on one of the academy's traditional goals: the development within students of civic literacy, responsibility and participation" (Stanton, 1990, p. 179).

The objective to combine the experiential nature of community service and the intellectual nature of classroom learning engages the concept of service-learning. It also implies the integration of cognitive and psychosocial development inherent in the assumptions of student development theory. Ultimately,

> Head and Heart, then, should be trained together, each influencing the other in any effective scheme of education. But, just between ourselves, I should like Heart to be a little in the lead, if we are to shape the best possible world for ourselves - with Head providing discipline and good counsel. (Johnson, 1946, p. 264)

Historical and Theoretical Foundations

The philosophical roots of service-learning are grounded in the experiential philosophy of education. The theory of John Dewey (1916, 1938) has been identified as the foundation upon which the cognitive theory of Piaget (1985) and psychosocial theory of Erikson (1968) serve to support the role of active learning as an educational strategy. A detailed account of each theory goes beyond the purpose of this review. However, a brief overview of the contribution each has made to the role of experience in education will establish the concept of service-learning as an agent of educational and social change.

Dewey's (1916, 1938) educational philosophy had many dimensions, and none as powerful as his theory of experience. The integration of traditional, scientific knowledge, and personal experience serves as the basis for operationalizing the mission of higher education: "I assume that amid all uncertainties there is one permanent frame of reference: namely, the organic connection between education and personal experience . . ." (Dewey, 1938, p. 12).

In retrospect, his passion for unifying dualisms became a driving force in his pursuit of a more progressive education. Whereas the traditional approach stressed a passive search that "isolated knowledge from practice and the life of the school from the concerns of wider society" (Olafson, 1977, p. 186), such a strategy appeared to ignore

the practical potential inherent in the educational process. His desire to combine experience and education is still pertinent today, and is often voiced as a common theme for proponents of educational reform. His concern for combining relevance with rigor has resulted in contemporary experiential education programs such as internships, work study and co-operative education (Kolb, 1984).

Whereas the philosophy of Dewey (1916, 1938) was somewhat intuitive, the work of Piaget (1985) was based on more objective principles. The intellectual-developmental theory of Piaget (1985) identified several stages of mental functioning, and each stage is influenced by maturation and cognitive dissonance. However, it is his concept of the relationship between experience and cognitive development that serves as an important theoretical connection for how active community service experience can influence intellectual functioning.

The philosophy of Dewey (1916, 1938) and theory of Piaget (1985) served to promote the connection between experience and cognitive development. There is also, however, a connection between experience and psychological and social development. The term psychosocial has been coined to describe the formation of personal issues of identity, values and purpose as a function of the life cycle. Erikson's (1968) understanding of development included eight different stages requiring the individual to adapt to physical and social demands of the life cycle.

His contribution to experiential education is embedded in the process that influences identity resolution: "The process seems to require (1) experiences which help the individual clarify his [her] interests, skills and attitudes, and (2) experiences which aid the individual in making commitments" (Widick, Parker, & Knefelkamp, 1978, p. 6).

This cursory overview suggests that cognitive and psychosocial perspectives are distinct bodies of developmental theory. However, "taken together, these socio-emotional and cognitive-developmental models provide a holistic framework for describing the adult development process and the learning challenge it poses" (Kolb, 1984, p. 16). This integration typifies the assumptions of holistic development that serve as the cornerstone for student development theory (American Council on Education, 1989).

Introduction to Theory and Model Concepts in Student Development

The relationship between the environment and services provided by the institution and the educational mission is most often expressed either by a theory or a model of student development. "Theories have three functions: they explain phenomena, they predict outcomes, and they permit us to influence outcomes" (Moore & Upcraft, 1990, p. 3). Such is the nature of student development theory, which expresses this relationship in terms of impacting multiple

traits of the student - intellectual, social, emotional, spiritual, physical, etc.

The theoretical basis for development of college students originated from the field of student services, an American adaptation borne out of the English liberal arts tradition. Initially established as a function to bolster the academic community of scholars, student service administrators found a niche in serving the co-curricular needs of college students. In its infancy, developmental theorists focused attention on the more global notion of human development (Erikson, 1968; Moore & Upcraft, 1990; Piaget, 1985). However, with additional research, it became clear that the development of college students had unique and distinctive qualities separate from those of adolescence and adulthood (Chickering, 1969; Freedman, 1965; Miller & Winston, 1990; Sanford, 1962). Student services has always been peripheral to the fundamental purpose of higher education, however, it was during the 1960s "that student affairs professionals turned their attention more specifically to the developmental focus of their educational activities" (Creamer, 1990, p. 4).

Two broad theories appear to encompass the concept of student development - cognitive theories and psychosocial theories. Cognitive theories tend to express intellectual development as progressing "from simple distinctions and relationships toward more complex differentiations and integrations" (Rodgers, 1980, p. 4). Perry (1968) was one

of the first theorists to apply the nature of intellectual development to traditional age college students. His scheme of intellectual development suggested that individuals move from recognizing simple distinctions to complex reasoning and understanding. This intellectual development serves to promote ethical development as defined by greater consistency between knowledge and values. Other theorists with implications for intellectual development in college students include Kohlberg (1969, 1975) and Gilligan (1982).

On the other hand, psychosocial theories are concerned with the development that occurs as a result of psychological and social interactions with others. To this end, Chickering (1969) captured the concept of developmental crisis in traditional age college students presented in Erikson's (1968) stage of identity. Other theorists considered psychosocial development as a function of the campus environment (Blocker, 1978) and used the concept of challenge and support to describe how this development occurs (Sanford, 1962, 1967).

Sometimes, as was the case in this study, when theories do not satisfy our needs for explanation and research, we turn to the concept of models. "Unlike theories, they lack the specificity of clear definition. . . . Models are, in effect, emerging theories" (Moore & Upcraft, 1990, p. 4). This describes the nature of the Service-Learning Model (Delve et al., 1990a). Sometimes the descriptions of how students learn to experience and understand what it is

to be a responsible citizen are unclear. Applying cognitive and psychosocial theories of student development can help to support and explain these qualitative observations.

Although it has been suggested that few studies have focused on the effects and benefits of service-learning (Giles, Honnet, & Migliore, 1991), a variety of literature is closely related. Because the nature of service-learning transcends each of these areas, community service experience deserves study independent of these bodies of literature. Specifically, the research on volunteerism, academic-sponsored experiential education (internships and co-operative education) and student involvement in co-curricular activities all have the potential to advance service-learning research.

Research in Volunteerism

As suggested by Delve et al. (1990b), we must distinguish between the peripheral nature of a volunteer experience and the potential for service-learning to directly engage the institutional mission. "Service learning is more than experience as a volunteer and is different from structured college and university experiences such as internships and co-ops" (Delve et al., 1990b, p. 3). Kendall (1990) suggested that service-learning programs differ in two ways from the traditional nature of volunteer activities: "First, service learning programs explicitly include features which foster participants' <u>learning</u> about

the larger social issues behind the human needs to which they are responding. . . . The second factor . . . is an emphasis on reciprocity" (p. 20, 21).

The service-learning experience may transcend the altruistic and humanistic nature of a typical volunteer experience. Kendall (1990) suggested this acknowledges the traditional motivations of the volunteer experience and "builds on these traditions by emphasizing critical reflection on the service experience, reciprocity between the providers and acquirers of services, and learning as a significant part of the exchange for everyone involved" (p. 25). In this way, the motivations and perceived benefits of volunteerism have relevant research implications for the concept of service-learning.

In general, motivations for volunteering have been classified into three categories - altruism (Fitch, 1987; Gelineau & Kantor, 1964), egoism (Fitch, 1987; Schindler-Rainman & Lippitt, 1975;) and humanitarian concern (Fitch, 1987; Schindler-Rainman & Lippitt, 1975; Serow, 1989; White, 1981; Wilson, 1976). A literature review by Rosenthal (1965) noted several personality variables associated with volunteer behavior in college students including a greater need for social approval, greater sociability, greater unconventionality, lower age and less authoritarianism.

The affective nature of the volunteer experience is a powerful motivator. When readers of Better Homes and

Gardens were asked to write about how they felt as a result of volunteering, Luks (1988) identified several physical and emotional themes: "Highs, warmth and increased energy were mentioned in half of the letters and a quarter of the surveys" (p. 39).

Research for the actual impact of volunteering on college students is somewhat sparse (Fitch, 1987; Lipton & Garza, 1978; Parker & Newman, 1989; Serow, 1989). The literature suggested that perceived benefits of volunteering include improved self-concept (Kelly, 1974; Schindler-Rainman & Lippitt, 1975) and self-fulfillment (Schindler-Rainman & Lippitt, 1975; Wilson, 1976). Shaver and Scheibe (1967) studied the impact of a summer camp experience on seventeen untrained college volunteers. The California Psychological Inventory was administered pre-and-post-camp to detect any developmental changes that might occur. Significant increases were found for the scales of Capacity for Status, Sociability, Social Presence, Self Acceptance, Communality and Achievement via Conformance (all $p < .05$).

Academic-Sponsored Experiential Learning

Without dismissing the value of any experiential opportunity, it is important to make a distinction between an academic-sponsored experience and a community service experience that may cross traditional discipline lines. Generally, it is accepted that academic success will have a

positive correlation with success in real-life situations, or at least this is a societal expectation:

> The classes and curriculums are designed to prepare students to function as citizens and workers in the general society and in specific occupations and professions. Thus, the students who do well in class should also generally do well in the social roles and occupational duties for which these classes have prepared them. (Baird, 1985, p. 4)

Internships and co-op experiences are the academic answer to combining classroom learning with real life experience. Community service is one activity coordinated by student service administrators that can achieve similar outcomes outside the classroom. Whereas "service to community" has maintained academic stature as embodied in research and classroom learning, student services have adopted the notion of community service; a subtle yet significant distinction which supports the student development agenda of student services. In this way, community service has come to be known as another student service peripheral to the search for knowledge that occurs in the classroom.

A cursory review of the motivations and perceived benefits of academic-sponsored experiential education (internships and co-operative education) parallels the void in empirical research noted for volunteerism. Motives and perceived benefits traditionally associated with academic-sponsored learning included payment by the employer, academic credit, a performance evaluation, and the potential for future employment. A three-year study at the

University of Maryland confirmed several commonly held benefits that accrue to interns including relevant job experience, introduction to potential employment opportunities, integration of classroom learning and real world experiences and an increased understanding of personal and career goals (Davis, Steen, & Rubin, 1987).

Co-curricular Student Involvement

Directly related to the dynamics of service-learning is the concept of co-curricular involvement. Although Winston and Massaro (1987) suggested that the impact of co-curricular involvement on student development has been the target of little research, several studies in the 1980s identified retention and persistence as likely outcomes. Astin (1984) defined involvement as "the quantity and quality of the physical and psychological energy that students invest in the college experience" (p. 307). Although the theory includes experiences of both a curricular and co-curricular nature, this summary is particularly interested in co-curricular experiences. Specific research that has relevance for service-learning involves the degree of involvement, quality of effort, and faculty interaction.

Involvement theory research suggested that students who participate in co-curricular activities are less susceptible to attrition (Astin, 1984, 1985), realize more advanced personal development (Khalili & Hood, 1983), and develop appropriate lifestyle and career goals (Williams &

Winston, 1985). Williams and Winston (1985) surveyed a total of 168 undergraduate students enrolled in an educational psychology class at a large southeastern university. Students were categorized into four groups based on responses to a self-reported question of involvement in activities and organizations recognized by the Office of Student Activities (n = 105) or no involvement (n = 63). Using the Student Development Task Inventory (SDTI) as the dependent measure, the results indicated that participants scored significantly higher on subscales of Interdependence (F (1, 164) = 20.68, p < .001); Appropriate Educational Plans (F (1, 164) = 8.58, p < .01); Mature Career Plans (F (1, 164) = 9.91, p < .01); and Mature Lifestyle Plans (F (1, 164) = 3.51, p < .05).

Although it has been shown that co-curricular involvement contributes to gains in intellectual and personal development (Pascarella, 1989), the amount of intellectual growth may be influenced by student typology (Ory & Braskamp, 1988). In the study by Ory and Braskamp (1988), three groups of students were compared on the basis of quality of effort in various co-curricular activities. The three groups included transition students (defined by low grades, n = 74), honor students (defined by academic record, n = 74), and regular students (defined as meeting minimum admission standards, n = 77). The College Student Experience Questionnaire (CSEQ) was administered to all students and served as the dependent measure assessing

personal and academic effort. Independent measures included perceived gains in intellectual skills, personal/social development and general education. Results indicated a strong correlation between quality of academic effort and intellectual gain for honors students (r = .84). While this may be intuitively expected, a strong relationship also existed for transition students in quality of personal effort and perceived gains in intellectual skills (r = .52), personal/social development (r = .61), and general education (r = .39). The study concluded that transition and honor students received the greatest gains for their efforts.

The amount of personal growth may also be influenced by student-faculty interaction (Wilson, Woods, & Gaff, 1974). For example, Baxter Magolda (1987) investigated the connection between intellectual development and the student-faculty relationship. Results of qualitative interviews with 1,117 students ranging from freshmen to doctoral candidates at two large midwestern state universities were categorized according to how students viewed themselves in the student-faculty relationship. The Measure of Epistemological Reflection (MER) served as the dependent measure to assess intellectual development across the Perry (1968) scheme. Students that perceived the relationship to be collegial scored higher on the MER.

The Experiential Learning Model

"Experiential learning refers to learning characterized by changes in judgement, attitude, feelings or skills acquired through direct participation in an event or series of events" (Cohen & Sovet, 1989, p. 119). With experiential education as a theoretical foundation, Kolb (1984) developed the Experimental Learning Model. His model proposed "a four-stage cycle involving four adaptive learning modes - concrete experience, reflective observation, abstract conceptualization and active experimentation" (Kolb, 1984, p. 40). Furthermore, the model infers that individuals demonstrate a "preference" for one of these four learning modes.

To establish these preferences, Kolb (1984) suggested that each dominant learning mode has characteristics that are unique and diametric to the recessive mode. For example, Concrete Experience is dominated by affective qualities of learning such as feeling and intuition. Opposite of this learning mode is Abstract Conceptualization, dominated by ideas and concepts that serve to create models and theories. Similarly, the learning mode of Reflective Observation features activities such as observation, reflection and description, whereas Active Experimentation is dominated by hands-on experience.

Kolb (1984) proposed that these learning modes can be categorized by how people grasp an experience and how they transform that experience. This is consistent with his

definition of learning - "namely, that learning is a process whereby knowledge is created through the transformation of experience (Kolb, 1984, p. 41).

Kolb (1984) described the ways people grasp experience as either according to what we see, hear and feel or according to abstract and theoretical information. Reliance on the affective nature of immediate experience is represented by the Concrete Experience learning mode. Reliance on the conceptual and symbolic nature of experience is represented by the Abstract Conceptualization learning mode. A brief description will further highlight the differences between these two diametrically opposed orientations for grasping experience.

Concrete Experience. Involves an organic orientation and an immediate and personal experience. The authentic context of the activity spurs affective consequences such as feeling and intuition.

Abstract Conceptualization. Involves the elements of ideas and concepts as a foundation for establishing subjective personal meaning. Thinking and symbolic conceptualizing create the ability to generalize observations into logical theories.

Kolb (1984) stated that the mere grasping of experience is not sufficient for learning to occur. He identified the learning modes of Reflective Observation and Active Experimentation as diametrically opposed ways to manipulate the experience that has been grasped. The

Reflective Observation mode represents the tendency to reflect on the experience according to whether it was an immediate experience or an abstract concept. The Active Experimentation mode represents an active manipulation of the immediate experience or abstract concept. A brief description will further clarify the nature of these two ways to transform an experience.

Reflective Observation. Requires an internal orientation for making meaning as a consequence of concrete experience. Observation, reflection and description serve as activities that promote an understanding of how things happen.

Active Experimentation. Requires an external orientation emphasizing practical application of observations and abstract ideas. The behavioral focus of this mode requires an action component which involves learning-by-doing.

Grasping and Transferring Experience in the Experential Learning Model

The ways in which people grasp and transform experience establishes the basis for four different learning styles. "As a result of our hereditary equipment, our particular past life experience, and the demands of our present environment, most people develop learning styles that emphasize some learning abilities over others" (Kolb, 1984, p. 76). For instance, people who prefer to grasp experience by Concrete Experience and transform this experience through Reflective Observation are categorized

according to what Kolb (1984) called a divergent learning style. This style is opposite that in which the person grasps experience through Concrete Experience and transforms the experience by Active Experimentation - called a convergent learning style.

Likewise, the learning style that results from experience grasped by Abstract Conceptualization and transformed by Reflective Observation is labeled assimilation - "less focused on people and more concerned with ideas and abstract concepts" (Kolb, 1984, p. 78). Opposite of this learning style exists experience grasped by Abstract Conceptualization and transformed by Active Experimentation. Kolb (1984) defined this learning style as accommodation, where the person prefers to modify theories and abstract concepts by using them in practical situations.

Therefore, by determining the preferred way to grasp experience and the preferred way to transform experience, the Learning-Style Inventory (Kolb, 1985) can identify the learning style commonly used by the person:

> The elements of an experience stimulate an individual's choice of a learning style. We gravitate toward the style with which we are most familiar. . . . Though individuals have a propensity for a certain style, we develop abilities and skills in all styles. Over time, our varied experiences give each of us exercise in all the styles of the learning wheel. The results of the Learning Styles Inventory (LSI), an instrument designed to measure a person's learning abilities (Kolb, 1985), provides a profile reflecting a dominant, two preferred, and a least-preferred learning style. (Stewart, 1990, p. 34)

Each phase of the Experiential Learning Model also has unique cognitive and psychosocial qualities that reflect

the learning style characteristic of that phase. For example, a cognitive component of the Concrete Experience phase would be a dualistic approach to the experience (a right or wrong way to handle a problem) whereas a relativistic approach is characteristic of the Abstract Conceptualization phase (a right or wrong way to handle a problem is relative to the context of the situation). From a psychosocial perspective, the security of socializing with close friends might be an example of a behavior in the Concrete Experience phase while the tendency to take risks and get involved in activities outside the social network of close friends is more characteristic of the Active Experimentation phase.

The four learning modes and subsequent styles of learning serve as the foundation for the Service-Learning Model (Delve et al., 1990a). Whereas the Experiential Learning Model considers experience in general, the Service-Learning Model considers how students experience and understand what it is to be a responsible citizen as a result of involvement in community service.

The Service-Learning Model

As previously mentioned, Delve et al. (1990a) noticed the emergence of several common ways to experience and understand what it is to be a responsible citizen. These themes evolved as a result of discussions with and observations of college students involved in community service.

When combined with the concepts of the Experiential Learning Model (Kolb, 1984), the different styles for learning what it is to be a responsible citizen evolved. The phases of Exploration, Clarification, Realization, and Activation in the SLM reflect the learning modes of Concrete Experience, Reflective Observation, Abstract Conceptualization and Active Experimentation respectively. Therefore, the characteristics of each phase are similar in process and content to those of the Experiential Learning Model, however they are targeted specifically at the community service experience. Figure 1 may help to visualize how the phases of the SLM correspond to the learning modes proposed by Kolb (1984). A detailed description of the affective, behavioral and cognitive structure that exists in each phase may help to further clarify the differences between these phases.

Exploration. As suggested by Stewart (1990), this phase is similar to the Concrete Experience mode in the Experiential Learning Model (Kolb, 1984). This phase requires qualities of security and non-threatening external imposition commonly required for meaningful fulfillment in many new experiences. Specific to community service, the experience is typically indirect or nondirect in nature and involvement is limited to a few brief exposures (Delve et al., 1990a).

From the perspective of student development theory, the affective component of feeling good about oneself is

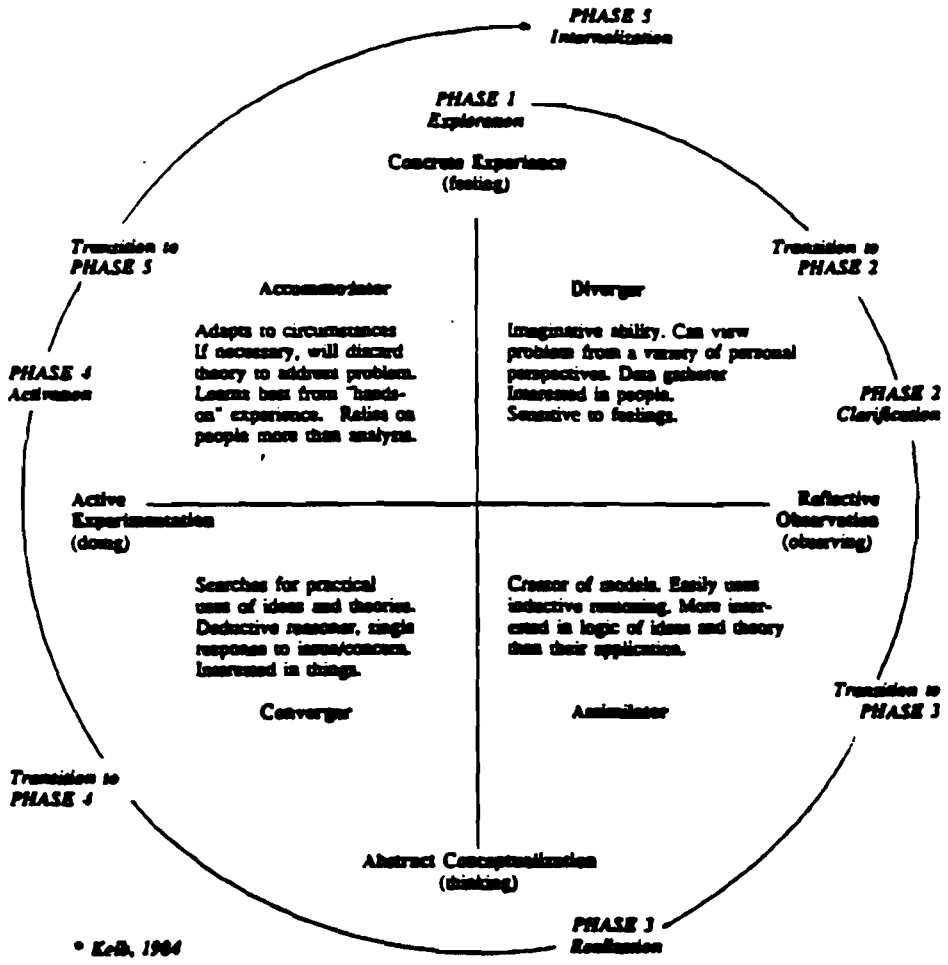

Figure 1. Comparison of the Experiential Learning Model With the Service-Learning Model (Stewart, 1990, p. 37).

suggested as an outcome of Chickering's (1969) vector of developing competence. Similarly, behavioral issues related to social competence are also a function of this vector. From a cognitive perspective, the tendency to view situations from a dualistic perspective would be anticipated according to Perry's (1968) scheme of intellectual and ethical development.

Clarification. Similar to the Reflective Observation mode in the Experiential Learning Model, the Clarification phase in the SLM involves a diversification of community service activities accompanied by structured opportunities for observation and reflection. Students are challenged by interacting with new experiences outside the security network of friends or familiar recipients of the service effort. Support is manifested in reassurance and awareness that comes with increased involvement.

The willingness for a student to take risks outside his/her social network of friends is described developmentally by Chickering (1969) as learning to manage emotions and developing autonomy. The affective nature of this phase may be reflected in experiencing new emotions as a consequence of involvement in a variety of community service experiences. Behaviorally, the student learns to solve problems "without the continual need for 'strokes' from friends and parents" (Rodgers, 1980, p. 46). Cognitively, the diversification of community service experience mirrors the developmental position of

multiplicity described by Perry (1968). As such, the student begins to realize there is no absolute right or wrong, and recognize that all opinions have value.

Realization. Labeled as the "Aha!" phase (Delve et al., 1990a; Stewart, 1990), this orientation involves an understanding of why it is necessary to engage in community service activities. The predominant cognitive nature of the phase mirrors the Abstract Conceptualization phase of the Experiential Learning Model (Stewart, 1990). The capacity for higher order thinking skills of deduction, induction and inference provides the framework for combining service and learning. Accordingly, the student begins to understand that he/she can influence the lives of the individuals served.

Chickering (1969) described this notion of reciprocal understanding in his vector of establishing identity. As a result of adequately resolving the tasks involved in developing competence, managing emotions and developing autonomy, the student is better able to accept his/her physical and emotional needs and the role others play in meeting these needs. Rodgers (1980) described a healthy resolution as coming "to terms with sexual orientation, body acceptance, and knowing the kinds, frequency, and levels of intensity of experiences one prefers" (p. 47). Behaviorally, the student may begin to spend more time with the individual or community served, thereby allowing others to see him/her as the student sees him/herself. A

cognitive perspective may suggest that knowledge is contextual, and therefore there may be no clear right or wrong way to handle a situation (Perry, 1968).

Activation. With the appropriate encouragement and direction, students can stretch beyond existing peer and academic support structures. From a psychosocial perspective, the student begins to wrestle with issues of personal and career commitment. Affectively, the resolution of these issues may involve feelings of isolation and confusion, especially related to community service (Slepitza, 1990). Behaviorally, involvement in activities that reflect these personal and career commitments are appropriate. This may include developing relationships with others involved in the service effort and pursuing internships or co-op experiences in an organization related to career interests. Cognitive theorists identify issues of care (Gilligan, 1982), commitment (Perry, 1968) and principled reasoning (Kohlberg, 1975) that can be applied universally when deciding how to act.

Internalization. The fifth way of processing community service experience labeled Internalization is different in both process and content. The Internalization phase does not have a direct counterpart in the Experiential Learning Model (Stewart, 1990). Because the Internalization phase does not meet the criteria of a different and unique way to experience and understand what it is to be a

responsible citizen, it was not considered in the construction of the test instrument.

Summary

The connection between active experience, cognitive and psychosocial development serves as the philosophical and theoretical foundation for the concept of service-learning. The phases of Exploration, Clarification, Realization, and Activation in the Service-Learning Model as proposed by Delve et al. (1990a) can be categorized according to affective, behavioral and cognitive descriptions unique to each phase. These affective, behavioral and cognitive qualities can be described according to observations of and discussions with students involved in community service. In addition to this qualitative information, evidence of affect, behavior and cognition can also be advanced by research in three general areas related to community service including volunteerism, academic-sponsored experiential learning and co-curricular student involvement.

If community service does have an impact on developing civic values and responsibility, then it would be beneficial to understand how academic instruction and student services can work together to influence this development. Although the SLM has identified four different ways to experience and understand what it is to be a responsible citizen, these ways have not been empirically confirmed. Therefore, it is possible that a test instrument may not

support the concepts advanced by the SLM. However, if a test instrument can be constructed to objectively identify these unique ways, then co-curricular activities can be structured to support the experiencing and understanding representative of a particular phase of the SLM. Likewise, co-curricular activities can be structured to challenge students to experience and understand in different ways that influence the development of civic values and responsibility. As a result, perhaps the traditionally unstructured and spontaneous nature of the volunteer experience can be strengthened to directly engage the educational mission of the institution.

Chapter III is a continuation of the review of the literature specifically showcasing a review of quantitative research supporting the affective, behavioral and cognitive qualities that exist in each phase of the SLM. Combined with the qualitative methods of observation and discussion, this review established the basis for item construction in the test instrument.

CHAPTER III

INSTRUMENT DEVELOPMENT

Establishing the reliability and validity for a new instrument is perhaps the most challenging psychometric concern. As such, this chapter will be dedicated to describing the various components of instrument construction.

As suggested in the literature review, the concept of service-learning is indirectly related to a variety of activities. Much of this previous research has isolated the quality of cognition from its affective and behavioral counterparts. Although combining intellectual and psychosocial development into one theory has been challenged (King, 1978), this connection serves as the cornerstone of the Service-Learning Model (SLM) (Delve, Mintz, & Stewart, 1990a). Consequently, any instrument designed to measure the phases of the SLM must reflect this integrated assumption.

Item construction reflected several characteristics which were transferrable to other experiential learning activities. The test instrument combined the contributions of research, observation, and discussion with cognitive and psychosocial theories of student development to identify

the qualities of affect, behavior, and cognition unique to each phase of the SLM.

Evaluating the construct validity of the various phases of the SLM is included in this section because of the important theoretical and empirical link to item construction in the test instrument. Specific statistical methods to demonstrate validity of the test instrument will be presented in the appropriate methods section.

The presentation of characteristics unique to each phase of the SLM is an important step in order to establish the rationale for how the test items have been constructed. This presentation was focused by categorizing these characteristics according to their affective, behavioral and cognitive qualities. This is consistent with the premise that the qualities of feelings, behaving and thinking, in combination, establish the basis of structure for both cognitive and psychosocial theories of student development (Rodgers, 1980).

This multidimensional approach is preferred when describing the complex nature of human behavior. Pace (1980) identified the properties of cognition, affect and behavior to be interdependent in assessing the quality of involvement. Likewise, Kohlberg (1984) suggested that "'affective' and 'cognitive' development are parallel; they represent different perspectives and contexts in defining structural change" (p. 9).

Many researchers supported the study of behavior as a multidimensional concept (Khalili & Hood, 1983; Pascarella, 1989). Davison, King, Kitchener, and Parker (1980) administered Loevinger's Sentence Completion Test (LCST) as the dependent measure to 323 subjects ranging from high school to graduate students. The LCST assesses six levels of ego development and five transitional stages, the lowest labeled symbolic and the highest labeled integrated. Results suggested that subjects did not consistently respond at only one level. Although a predominant level preference was not found, response trends suggested that the assumptions of the model were supported. It was concluded that measures of cognitive-social development such as the LCST are more effective when they relate to a breadth of behaviors instead of presupposing the strength of the relationship is caused by any one behavior.

As stated, all three dimensions play a role in determining the orientation of a particular phase, and each contributes unique characteristics that transcend all phases of the SLM. The characteristics of affect include a basic valuative quality. Although Delve et al. (1990a) implied that affect primarily resides in the Exploration phase, the valuative nature of affect can readily be applied in every phase of the SLM.

Likewise, each phase of the SLM necessitates the quality of behavior, defined in this context as action that may or may not be congruent with affective and cognitive

dimensions. In fact, the disparity between affective or cognitive processing and overt behavior has been previously suggested to be the catalyst for dissonance (Blocker, 1978; Chickering, 1969; Sanford, 1966).

Finally, the notion of cognition has been developed as an underlying construct of experiential learning and also appears as an important component of the SLM (Delve et al., 1990a). The general quality of cognition is the basis for reasoning that leads to understanding. Although some phases of the SLM suggest more cognitive learning styles than others, each incorporates a cognitive structure.

Construct Validity for Service-Learning Phases

The following presentation identified literature and research according to the dimensions of affect, behavior, and cognition identified in each phase of the Service-Learning Model (SLM) (Delve et al., 1990a). When possible, the review incorporates research specific to service-learning or community service experience. However, because empirical research for the dimensional influences of each phase is somewhat sparse, studies have been included that model developmental concepts closely related to service-learning assumptions.

Phase 1: The Exploration Phase

Exposure to various community service experiences is the primary basis for most programs (Levison, 1990). The

desire to develop a sense of social responsibility by exposing students to individuals and communities in need is a noble motive, and certainly worthy of inclusion at the secondary school level. Benefits of this exploration include having fun, meeting new people, and developing new skills (Abdennur, 1987) and a better attitude toward self and others (Newman, 1987). Given the intellectual and psychosocial level of development at this age, the immediate psychological gratification and limited imposition of personal time is appropriate.

The nature of exposure in this phase is not limited to secondary school programs however, as the elements of having fun and enhancing the public image of the institution are primary reasons for coordinating community service programs in higher education (Theus, 1988). Programs at this level merely serve as a vehicle for access and placement; consequently, they often fail to inspire the action necessary to change the determinants of social concerns. If students are not challenged by others ways to experience and understand what it is to be a responsible citizen, the ultimate potential of the community service experience is limited as an integrating educational philosophy. At the same time, by remaining at the Exploration phase the experience merely perpetuates stereotypes associated with the individuals or communities served (Levison, 1990).

Nevertheless, an authentic experience is an appropriate starting point. Schindler-Rainman and Lippitt (1975)

suggested that if a volunteer initiative is to have any long term impact, "development of attitudes and values concerning volunteering should occur during the early years of school" (p. 35). Authentic experience of this nature for college students results in increased self-concept (Shaver & Scheibe, 1967), personal fulfillment (Kelly, 1974), a sense of charity (Delve et al., 1990a), greater awareness of social responsibility (Hobfoll, 1980), and a novel psychological investment (McPherson & Nebgen, 1991). Many of these qualities are precepts for the development of autonomy as described by Chickering (1969). Polkosnik and Winston (1989) supported this position by suggesting that "a minimal level of autonomy may be necessary for the acquisition of more complex intellectual and more mature psychosocial functioning" (pp. 16-17).

Affective Dimension:
Phase 1

There is a considerable body of research that suggested increases in altruism, humanitarianism and civic responsibility occur during the college years (Astin, 1977; Pascarella et al., 1988). Fitch (1987) surveyed 76 students at a major southeastern university concerning possible reasons for volunteering. Out of 20 items, 2 of the top 5 reasons for volunteering were egoistic in nature. He found significant differences to exist between the top response ("It gives me a good feeling or sense of satisfaction to help others", $M = 8.90$) and the next most common

response ("I am concerned about those less fortunate than me", M = 8.03). Results supported the qualitative nature of "helpers high" described by Luks (1988).

Behavioral Dimension:
Phase 1

Fitch (1991) surveyed 285 undergraduate students at a large southeastern university on two measures, the Survey of Interpersonal Values (SIV) and the Extracurricular Involvement Inventory (EII). Results suggested that significant differences were related to variables of Independence, Benevolence, and Leadership as measured by the SIV, and he identified community service as having the potnetial to foster development of this nature. Specifically, students less involved in co-curricular activities scored higher than those moderately involved on the Independence scale (F (2, 181) = 4.27, $p < .02$), but not significantly different than highly involved students. This may reflect other research suggesting students involved in co-curricular activities may seek involvement as a function of security whereas more independent students are not motivated by social reinforcement (Astin, 1984). Benevolence scores for moderately involved students were significantly higher than those for lowly or highly involved students (F (2, 178) = 4.61, $p < .01$), inferring a concern for serving others exists at some optimal point, and beyond which deeper levels of involvement are influenced by other variables. Finally, Leadership scores for highly involved students

were significantly different than those for the other two levels (F (2, 181) = 2.92, $p < .05$), suggesting different needs exist for highly involved students.

Cognitive Dimension:
Phase 1

Pascarella (1989) randomly selected 70 high school seniors to take the Watson-Glaser Critical Thinking Appraisal (CTA), the dependent measure assessing critical thinking skills including inference, recognition of assumptions, deduction, interpretation and evaluation of arguments. Of these 70 students, 47 attended college on a full-time basis in the fall of 1986 and were matched on several personal variables to control for differences. Several independent measures were studied, including a self-reported survey of seven items focusing on the duration and quality of student involvement throughout the freshmen year. Correlated with a re-test of the CTA in May of 1987, four of the dependent measures yielded significant partial correlations: CTA total score (partial $r = .34$, $p < .10$), Inference (partial $r = .35$, $p < .10$), Recognition of Assumptions (partial $r = .36$, $p < .10$), and Interpretation (partial $r = .43$, $p < .10$). Although total involvement yielded significant relationships, when attempting to identify which of the seven items contributed to this effect, none of the items individually reached significance. Therefore, it is necessary to consider all aspects of involvement as a total experience.

Phase 2: The Clarification Phase

Spurred by the notion that "no experience having meaning is possible without some element of thought" (Dewey, 1916, p. 169), various authors have suggested the element of reflection as a necessary component in the community service experience (Conrad & Hedin, 1990; Levison, 1990; Newmann, 1990; Schultz, 1990). In addition, the lack of reflection structured in community service activities has been noted (Conrad & Hedin, 1990). Wagner (1990) stated that "the concept called upon most frequently to describe connections between service and learning is 'reflection'" (p. 44). Clearly then, if we are to transcend the volunteer nature of community service, we must structure reflective and abstract learning as part of the experience.

Specific to community service activities, we have often assumed that mere exposure will create dissonance and inspire the individual to resolve the issue of how to act as an agent of social change. However, it is the process of reflecting on one's experience that provides the critical connection between mere exposure and enlightened action:

> If we reflect on what we do, we may modify our actions in the future. Action without reflection does not lead to informed, intentional behavior: action followed by reflection can ensure that anything learned from the action can be carried forward to the next situation. (Burnard, 1988, p. 130)

Affective Dimension:
Phase 2

Although cognitive processes dominate the Clarification phase, affective components make an important contribution. Delve et al. (1990a) suggested that students begin to feel a sense of belonging and camaraderie with other community servers as a consequence of Clarification. One method used to trigger affective meaning at this phase is the process of discussion. Given the opportunity to synthesize and articulate that which has been recently experienced will elicit questions of personal value. Levy (1986) suggested that processing an issue of this nature is evidenced when:

1. Students are able to identify the range of relative alternatives and move to a choice.
2. Students are able to make a good case for what they dislike or hate. It is not adequate to just make a case for what they love.
3. Students consider choices they have never considered before.
4. Students have to "stew" over the issues. Sometimes this is called thinking.
5. Students come to the place where they believe their neighbors' reasons for their choices are very interesting.
6. Students consider the underlying values. (p. 5)

Empirical investigation for affective development of this nature has been addressed in terms of evolving self-concept (Astin, 1977; Chickering, 1969; Feldman & Newcomb, 1969). Pascarella (1985) surveyed pre-enrollment characteristics for incoming undergraduate students and conducted a follow-up study two years later to determine the variables that would best predict changes in self-concept. Results were presented with individuals (N = 5,162) and

institutions (N = 74) as the unit of analysis. Although the predictor set for institutional differences (R-square = .77, p < .01) was greater than the predictor set for individuals (R-square = .33, p < .01), it was noted that no single variable had a direct relationship of any practical significance. "Rather, as suggested by the present findings, the influence of structural factors on student development may be, at best, modest and indirect, mediated through activities and interactions with socializing agents more immediate to the student's experience of college" (Pascarella, 1985, p. 655). Implications for service-learning involve peers and faculty serving to integrate the student as a member of the campus community.

Behavioral Dimension:
Phase 2

Behavioral attributes include exploring new alternatives for involvement and participating in a variety of community service activities. Successful grasping of this phase results in personal recognition and a sense of accomplishment (Luthi, 1980), as well as rewarding and enjoyable social experiences (Slepitza, 1990). As a consequence, "students begin to explore what they can do to make a difference" (McPherson & Nebgen, 1991, p. 329).

Cognitive Dimension:
Phase 2

Although the literature addressed the importance of structuring reflection as part of the community service

experience (Conrad & Hedin, 1990; Levison, 1990; Newmann, 1990; Schultz, 1990), empirical research for the effects of reflective processing tended to be expressed as an increased capacity for reasoning and problem solving (Brabeck, 1983; Schmidt, 1985; Schmidt & Davison, 1981, 1983; Welfel & Davison, 1986). Programs structured to develop these skills parallel the spirit of service-learning to transcend the volunteer experience and engage in broader social concerns. Results of one such program were studied by Tomlinson-Keasey and Eisert (1978). The Accent on Developing Abstract Processes of Thought (ADAPT) program at the University of Nebraska integrated exploration, invention and application experiences into six academic programs. An adaptation of Inhelder and Piaget's work on formal operations served as the dependent measure designed to assess the student's capacity to generate hypothesis, reason, demonstrate an understanding of probability and other cognitive processes. When compared to a control group, the ADAPT students scored significantly higher (t (19) = 3.38, p < .01) on the ability to think abstractly and demonstrate increasingly complex reasoning.

Phase 3: The Realization Phase

The Realization phase embraces the initial recognition that a reciprocal relationship exists between the server and the individual or community served. Kolb (1984) expressed this relationship as an interaction that "focuses

on the transaction between internal characteristics and external circumstances, between personal knowledge and social knowledge" (p. 133). When applied to service-learning, interaction is best described by the process of reciprocity, "when the server (the student) is educated and develops a deeper sense of civic responsibility and the served (individual or community) is empowered" (Delve et al., 1990b, p. 3). It represents the progression from reflecting about the direct experience to conceptualizing about the impact of future actions.

Affective Dimension:
Phase 3

Hobfoll (1980) studied 61 female undergraduates in a tutorial program for inner city preschool children. The subjects were divided into three groups and pre-and-post tested to assess change in attitudes toward institutions and recipients of the service effort. Results implied that the volunteer group developed more "favorable attitudes toward the potency (F (2, 55) = 10.323, p < .001) and stability (F (2, 55) = 3.958, p < .05) of the welfare recipients than nonvolunteers, suggesting a more deep-seated respect for the client population" (Hobfoll, 1980, p. 505).

Behavioral Dimension:
Phase 3

Behavioral implications of this phase involve increased time and interaction with the issue (Delve et al., 1990a) and "research and the ability to draw

interconnections are the kinds of behaviors endemic to those at the learning stage of abstract conceptualization" (Stewart, 1990, p. 38). Certainly this begins to address the quality of effort regarded as important for successful outcomes associated with involvement theory (Astin, 1984). Individuals processing at this phase are no longer concerned with gaining the social approval of peers. Often this involves developing new relationships with others who share similar values and commitments (Slepitza, 1990).

Westman and Kamoo (1990) studied 89 undergraduate and graduate students at a large midwestern university. Learning style was measured by two scales on the Inventory of Learning Processes (ILP): The Deep Processing Scale assesses critical evaluation and conceptual organization and the Elaborative Processing Scale assesses the degree to which students translate information into their own terminology. The second dependent measure was a questionnaire with two scales, Death Issues and Real Life Issues. Controlling for age, sex, level of education, grade point and marital status, thinking about Death Issues correlated significantly with Elaborative Processing ($r = .27$, $p < .05$). Thinking abstractly about Other Real Life Issues correlated with Deep Processing ($r = .60$, $p < .001$) and Elaborative Processing ($r = .66$, $p < .001$). Results suggested that people use conceptualizing skills selectively, especially in Real Life Issues such as health, goals in life, etc. where the conceptualizing can make a difference.

Cognitive Dimension:
Phase 3

Whereas students in the Exploration phase prefer the security of an experience with almost absolute individual control, students at this level are challenged by activities that require external impositions of time and task (Khalili & Hood, 1983). In the study by Khalili and Hood (1983), the Paragraph Completion Method (PCM) was administered as the dependent measure for 169 entering freshmen at the University of Iowa. The PCM purports to assess conceptual level as a function of the individual's ability to interact with his/her environment. Therefore, a low score identifies an individual that avoids external imposition and a high score suggests "interdependence between one's self and one's environment" (Khalili & Hood, 1983, p. 389). In the spring of 1981, a total of 101 students from the initial study were still enrolled and a total of 76 participated in a re-test of the PCM. A variety of independent variables were studied including involvement in co-curricular activities. Results indicated those students involved in co-curricular activities experienced a significant change in conceptual level ($t = 8.69$, $p < .001$).

Phase 4: The Activation Phase

The Activation phase has a predominant behavioral influence motivated by the desire for hands-on experience. Based on prior reflection and abstraction, the individual is intent on achieving change by practical application. As

such, the student moves from the impact of his/her efforts on the immediate community to becoming an active member of the larger society (Delve et al., 1990a; Schultz, 1990). Through a deeper level of commitment and involvement, students become cognizant of the ability to make a difference as an individual. Involvement, however, is not simply "more of the same" - it requires an understanding of the reciprocal nature of the service effort. There are critics, however, to promoting involvement of this nature. Concerns have been expressed associated with giving a false impression for the underlying cause of the problem (Abdennur, 1987) and the potential negative impact on those served. Illich (1990), in an address to college students planning to volunteer for service in Latin America, warned of the dangers of paternalism inherent in the service effort and the potential impact on the individual or community served:

> All you will do in a Mexican village is create disorder. At best, you can try to convince Mexican girls that they should marry a young man who is self-made, rich, a consumer, and as disrespectful of tradition as one of you. At worst, in your 'community development' spirit you might create just enough problems to get someone shot after your vacation ends and you rush back to your middle class neighborhoods where your friends make jokes about "spics" and "'wetbacks". (Illich, 1990, p. 318)

These issues are not limited to intercultural exchanges, and tend to permeate all service efforts. Kendall (1990) related a similar story about her undergraduate experience as a tutor in a rural community outside Chapel Hill, North Carolina:

> When the superintendent invited us to "go back to the campus where you belong" and reminded us that he "didn't invite (us) to come teach (his) fifth graders how to do calculus anyway," I was given the vivid, firsthand lesson that people must decide what their own needs are and how those needs will be met. (p. 9)

The issues involved in reciprocal service are not easily handled without the deep reflection and support that will ultimately enable the person to understand his or her role in the service effort. Although many may not devote his or her life to the service effort as suggested by this phase, he/she may begin to understand how to influence a particular element of the problem that underlies the social concern.

In an interview conducted by Newman (1987) to honor students for their commitment to community service, one student mirrored this approach in her response to a question about career and lifestyle changes:

> For me, even though I didn't change my particular goal of going to medical school, there are different approaches to it. I don't think that I can stop now. I didn't realize when I started that it's not something that's going to be one year in my life. It's going to be the rest of my life. So my approach may not be to continue this exact project, but it's going to go on in another aspect, like setting up a free clinic to work with the poor. (Newman, 1987, p. 27)

Delve et al. (1990a) suggested that commitment could also be expressed in terms of frequency and duration. Schmidt-Posner (1989) found qualitative support for this during interviews with students involved in community service at Stanford. However, in this case it was unclear if the increased frequency and duration of experience was due to the student's free will or merely a function of the

internship requirements for juniors and seniors involved in community service.

Affective Dimension:
Phase 4

Affective adjustments caused by reciprocity may result in increased sensitivity for the tradition that underlies diversity differences, be they cultural, social, racial or other. Pyle (1981) studied the impact of an international service-learning experience on personal and career development in 25 college students. The Student Development Task Inventory (SDTI) was used to measure change by comparing mean pre-and-post test scores for each of the thirteen independent subscales used in the study. Results indicated significant differences for participants in autonomy development ($t = 2.6$, $p < .05$), interdependence ($t = 2.39$, $p < .01$), mature life-style plans ($t = 2.16$, $p < .05$) and the total SDTI score ($t = 2.1$, $p < .05$). To accompany this quantitative data, a qualitative analysis of comments typified students at this level. One stated, "the trip to Jamaica did change my lifestyle. I appreciate the things I have, which I took for granted . . ." (Pyle, 1981, p. 513) and another student commented "a couple different career possibilities have been brought to my attention. Some type of mission or Peace Corps type work has become an option" (Pyle, 1981, p. 513).

Behavioral Dimension:
Phase 4

Behavioral implications allow for action within the confines of personal and environmental limitations. Delve et al. (1990a) suggested that "because students exhibit their commitments through their appearance, lifestyle, and verbal and written expression, they might be challenged by the reactions of their peers" (p. 17). Although lifestyle changes may reflect a deeper level of commitment for some, a more universal behavior may involve a course of action that is more assimilating in nature. In support of this, a study by Erwin and Marcus-Mendoza (1988) studied 438 entering freshmen at a large public university in the southwest. Several dependent measures were used including the Action Control Scale (ACS) which assesses action and state orientation. Action-oriented people are defined as able to consider alternative plans of action and pursue necessary decisions to solve problems. State-oriented people tend to focus on what has happened in the past or what will happen in the future without considering the necessary action to accomplish the task. Scores on the ACS were correlated with scores of the Scale of Intellectual Development (SID), measuring cognitive development along the dimensions of dualism, relativism, commitment and empathy. Results indicated that students who were more state-oriented were more dualistic and produced negative correlations with scales of performance ($r = -.42$, $p < .05$), failure ($r = -.47$, $p < .05$) and decision making ($r = -.39$, $p < .05$).

These same three scales revealed a positive correlation with action-oriented students' performance (r = .27, p < .05), failure (r = .42, p < .05), and decision making (r = .41, p < .05). State-oriented students were also more dualistic whereas action-oriented students were more committed as measured by the SID.

Cognitive Dimension:
Phase 4

Although behavioral components dominate the Activation phase, there appears to be a definite cognitive structure that undergirds experience and understanding in this phase. Schmidt-Posner (1989), in discussions with students involved in community service activities coordinated by the Public Service Center at Stanford, identified the theme of "making a difference" as an involvement motive for freshmen and sophomores. These motives shifted to "learning about . . ." for juniors and seniors. This parallels the intellectual and ethical development proposed by Perry (1968), and the nature of this shift has been the subject of empirical investigation.

Pinto and Geiger (1991) gave 55 undergraduate business students the Learning-Style Inventory (LSI) (Kolb, 1985) in the fall semester of the sophomore year and again in the fall of the junior year to assess changes in learning style. Results suggested a lack of confirmation for the assumptions of sequence and progression in the Experiential Learning Model and recommended a reanalysis of the theory.

Although not suggested as such by the authors, this study provides support for any change in learning style to occur over a period of time.

In support of this, Hayden and Brown (1985) randomly selected 116 college students to participate in a study at a four year liberal arts college. Students as freshmen took two dependent measures, the LSI and the Learning Style Questionnaire (LSQ). The LSQ assesses the influence of environmental and physiological factors on learning. Of the original 116, 29 seniors agreed to re-take the instruments. Results suggested that whereas freshmen were heterogeneous in their learning approach, seniors preferred abstract conceptualization and relied less on reflective observation. Correlational analysis suggested that Concrete Experience was negatively related to informal class structure ($r = -.32$, $p < .01$), reluctance to participate ($r = -.28$, $p < .01$) and independent learning ($r = -.23$, $p < .01$). Negative relationships were established for Reflective Observation and class participation ($r = -.43$, $p < .01$). Active Experimentation was significantly correlated with class participation, ($r = .23$, $p < .01$) suggesting that concrete and reflective learners prefer a formal classroom setting and active learners prefer the opportunity to participate in class discussions.

Phase 5: The Internalization Phase

As defined by the authors of the SLM, "the internalization phase describes those few students who fully integrate their community-service experience into their lives and, as a result, make lifestyle and career decisions consistent with the values gained from such experiences" (Delve et al., 1990a, p. 17). The authors utilized concepts such as integration and consistency as a result of evolving experience to describe this phase (Delve et al., 1990a; Stewart, 1990), suggesting this phase is different from the others in both content and process. As previously mentioned, because this phase does not meet the criteria of a different and unique way to experience and understand what is it to be a responsible citizen, the test instrument did not assess the existence of this phase.

Personal and Environmental Influences

Although secondary to the purpose of this study, the literature does suggest several personal and environmental influences that have an impact on the community service experience. This brief overview will provide the rationale for questions to be included in the demographic profile.

Institutional Differences

If we accept the premise that a service-learning experience can foster responsible citizenship, then we must also allow for the potential effects of institutional

mission and philosophy to produce similar results. Because this study proposes to involve students from the University of Northern Colorado (UNC) and Colorado State University (CSU), it will be necessary to establish that differences in institutional mission are not considered to be a source of error. Several studies implied that the strongest differences exist in institutions with a religious mission. Both UNC and CSU are state-funded, public institutions.

Serow (1989) sent a questionnaire to 2,094 students enrolled at 12 institutions throughout a southeastern state. A further breakdown revealed 1,425 enrolled in 10 liberal arts colleges with Protestant affiliations, 514 enrolled at a public university and 155 at a private institution. The moral climate of each campus was assessed by a self-report measure for the importance of an institutional mission with moral or spiritual underpinnings in the final decision to enroll. Community service commitment was measured by a forced-choice format concerning the frequency of participation in off-campus volunteer work. Controlling for personal religious commitment, scores for students who scored low on community service commitment increased as moral community ratings increased, suggesting that moral climate may influence participation in community service ($\chi^2 = 15.2$, $\underline{d} = 4$, $\underline{p} < .01$).

In a similar study, Serow and Dreyden (1990) sampled 1,960 students enrolled in 11 institutions of higher education in a southeastern state. Three types of institutions

were involved, including a large public university, six private colleges with moderate religious affiliations and four church affiliated colleges. The dependent measure was a forced-choice format concerning the frequency of participation in off-campus volunteer work. Independent variables included institutional type, personal values and involvement in campus activities, among others. Results suggested that the type of institution was significantly associated with the regularity of community service (χ^2 = 29.32, $\underline{d}$ = 6, $\underline{p}$ < .001), with the strongest association in religious institutions. For personal values, the relationship between service and spiritual fulfillment had a strong and significant relationship irrespective of institutional type (χ^2 = 64.74, $\underline{d}$ = 3, $\underline{p}$ < .001). Involvement in groups that traditionally sponsor helping activities were also significantly associated with fraternities and sororities (χ^2 = 31.59, $\underline{d}$ = 3, $\underline{p}$ < .001), student government (χ^2 = 27.51, $\underline{d}$ = 3, $\underline{p}$ < .001), and religious groups (χ^2 = 48.49, $\underline{d}$ = 3, $\underline{p}$ < .001) at private colleges but not for students at the public institutions.

Class Status and Age Differences

The assumptions of the SLM acknowledge that more complex affective, behavior, and cognitive skills may be learned from interventions structured in the context of a community service experience. In the absence of empirical research to establish a causal link for more complex

processing skills as a result of service-learning, several studies implied changes of a similar nature occur as a function of maturation and education.

In a study by Kitchener and King (1981), 60 subjects from 3 age and educational levels (high school, undergraduate and graduate) were administered the Reflective Judgement Instrument (RJI). The major research question was whether students reason at different stages on the reflective judgement model given age and educational differences. Differences between mean scores across the 3 groups were significantly different (F (2, 54) = 76.44, p < .001), and differences were found to exist between all groups using Tukey's-HSD Procedure (p < .05). The study concluded that younger, less educated students tend to justify beliefs with absolute assumptions, undergraduates tended to view justification as idiosyncratic and graduate students tended to examine other points of view and develop conclusions with reasonable assumptions.

Schmidt (1985) studied the impact of intellectual development as a function of age, maturation, and educational level. Three groups of undergraduate students were used to control for age - traditional freshmen (18 years old, n = 40), traditional juniors (21 years old, n = 40), and non-traditional freshmen (21 years old, n = 18). The independent variables of age, class, major, and sex were studied against the dependent measure of the Reflective Judgement Interview (RJI). A pre-test in 1979 suggested

that traditional juniors as a group scored higher than freshmen, irrespective of age (F (1, 79) = 4.84, p < .05). This suggests that the only difference in juniors and non-traditional freshmen was educational experience. A re-test over 2 years later of traditional (n = 34) and non-traditional freshmen (n = 11) resulted in a significant main effect for class, (F (1, 45) = 12.14, p < .05), suggesting that non-traditional freshmen scored higher than the traditional group, with no significant main effects for major or sex.

In a study related to age differences, Ginter, Brown, Scalise, and Ripley (1989) obtained samples of students from two different populations: A large state university and a smaller public university, both in the southern region of the United States. The dependent measure was a list of 28 strategies from which a person was asked to choose how he/she learns most effectively. Independent variables included sex, age, and class standing. Results were categorized into one of five perceptual learning styles including print, visual, interaction, split and no preference. Analysis suggested that learning style was significantly different with respect to age (F (4, 305) = 2.42, p < .05) and older students in particular preferred print (M = 23.89 years) and split styles (M = 23.47 years) to visual learning styles (M = 20.46 years).

Ethnic Differences

Given the changing demographics of the college clientele (Garland, 1985; Hodgkinson, 1985), it is necessary to acknowledge the potential role cultural differences may play in community service involvement and phase preferences. In a study by Lipton and Garza (1978), reasons for volunteering were compared between Anglos (n = 89) and Hispanics (n = 54). The authors devised an Altruistic-Selfishness Index (ASI) to serve as the dependent measure with a variety of independent measures studied including number of children, family income, number of hours per month volunteered, and sex. Independent variables were regressed into the total ASI score for each group. A total R-square of .554 was achieved for Anglos, with number of children (R-square = .457), number of siblings (R-square = .482) and family income (R-square = .507) entering significantly into the regression equation. Primary predictor variables for Hispanics included number of hours per month volunteered (R-square = .284), marital status (R-square = .352), sex (R-square = .410), and when combined with several other variables, resulted in a total R-square of .516. The findings suggested that differences exist in antecedents and motivations for both groups. Although this study did not require control of cultural variables to establish instrument validity or reliability, ethnic differences warrant inclusion in the descriptive snapshot of the sample.

Method of Delivery

Delve et al. (1990a) identified the method of delivery (direct, indirect, nondirect) as having an impact on the developmental consequences of the service-learning experience. However, differences for each method have not been the target of empirical research. Discussion with students involved in community service activities coordinated by the Public Service Center at Stanford revealed that students preferred direct experience contacts (Schmidt-Posner, 1989).

Kelly (1974) studied a group of students at a small Catholic college in rural Pennsylvania. Twenty freshmen working as volunteers with retarded children were compared to a group of freshmen participating in general on-campus service projects and a group of freshmen identified as uncommitted to any ongoing service effort. These three efforts served as the independent variables. Two dependent measures were used to assess self-concept, ideal self-perceived concept and ideal of others. The study demonstrated that students who helped others on a face-to-face basis underwent greater positive change in self-concept and other related dimensions than did those involved in on-campus service projects. Even a more dramatic difference was found to exist between helpers and students who were not committed to any ongoing service projects.

CHAPTER IV

DESIGN AND PROCEDURES

This chapter will address methods and procedures for two general areas - research design and test administration. The research design section will include an overview of the concept of validity, the Learning-Style Inventory, psychometric derivation of research objectives, and reliability techniques. The test administration section will address sample size, selection of subjects, demographic data, distribution and collection procedures.

Research Design

Given that the phases of the SLM have not been empirically confirmed, the purpose of the study was classified as exploratory in nature. "Exploratory research tends to study variables and their relationships in order to further understanding of the phenomena" (Borg & Gall, 1989, p. 32). In the context of this study, these relationships focused on comparing responses on the test instrument with responses on the Learning-Style Inventory (LSI) (Kolb, 1985). Correlation is a common statistical method used to establish the strength of the relationship:

> The correlational method is used for two major purposes: (1) to explore relationships between variables and (2) to predict scores on a variable from subject's

> scores on other variables. In relationship research the variables may be measured at the same point in time or at different points in time. (Borg & Gall, 1989, p. 577).

Glass and Hopkins (1984) defined correlation coefficients in terms of strength and direction. Strength is described by the magnitude of the relationship. "In all situations the correlation coefficient can have values that range from -1.0 for a perfect inverse (negative) relationship, through 0 [zero] for no correlation, and up to +1.0 for a perfect (positive) relationship" (Glass & Hopkins, 1984, p. 80). The direction is indicated by whether the relationship is positive or negative:

> When low scores on X are accompanied by low scores on Y, and high scores on X are accompanied by high scores on Y, the correlation between X and Y is positive; if high scores on X are associated with low scores on Y and vice versa, the correlation is negative. (Glass & Hopkins, 1984, p. 80).

Several factors can influence the statistical power of the correlation coefficient including the alpha level of significance, decision to conduct a one-or-two-tailed test and sample size. In some studies, these factors are used to establish the criteria for accepting or rejecting the research hypotheses. However, because of the exploratory nature of this study, these factors will establish guidelines for the research objectives.

The exploratory nature of the study permitted the alpha level of significance to be set at .10 (Borg & Gall, 1989). Although the .05 level of significance is commonly chosen because of simplicity and convention (Glass &

Hopkins, 1984), setting the level of significance at a higher level may identify interesting relationships that may otherwise be overlooked.

The decision to conduct a one-or-two-tailed test can also influence statistical power. "When properly guided by sound theory or previous research, directional tests are appropriate and more powerful than nondirectional tests" (Glass & Hopkins, 1984, p. 303). For the purpose of this study, it was desirable to use a one-tailed test and predict the direction of the relationship between the score on the test instrument and the Learning-Style Inventory.

Finally, the issue of sample size can influence the power of the research design. It has been acknowledged that statistical power increases with sample size (Borg & Gall, 1989; Glass & Hopkins, 1984). Specific to correlational studies, "sampling of 200 or more may be needed to reflect validity levels of population data accurately at least 90% of the time" (Crocker & Algina, 1986, p. 226). However, sample size can be influenced by variables such as financial and time restrictions and the nature of the study (Borg & Gall, 1989). Given these influences, "in correlational research it is generally desirable to have a minimum of 30 cases" (Borg & Gall, 1989, p. 233).

The research design establishes the foundation for a discussion of validity and the Learning-Style Inventory. This foundation can then be used to describe the psychometric derivation of the research objectives.

Validity

Although a test can not be valid if it is not reliable (Guilford, 1954; Nunnally, 1978), procedures for establishing validity precede measures of reliability. Defined as the degree to which the test measures what it purports to measure (Anastasi, 1988; Borg & Gall, 1989), the concept of validity includes a variety of assessments. The concepts of face, content and concurrent validity have direct implications for this study.

Face and Content Validity

Face validity is defined as a perception that the test measures what is purports to measure (Borg & Gall, 1989; Kline, 1986). It differs from other measures of validity in that it is a more subjective test conducted to verify that test items are reasonable and appear to reflect the purpose of the instrument. Kline (1986) suggested that "face validity bears no relation to true validity and is important only in so far as adults will generally not cooperate on tests that lack face validity, regarding them as silly and insulting" (p. 4).

Content validity is distinguished from face validity as the ability to demonstrate that the condition of inclusiveness has been met (Kline, 1986). To establish both face and content validity, the feedback of several individuals recognized as experts in service-learning was

solicited, including the authors of the Service-Learning Model - Cecelia Delve, Greg Stewart, and Suzanne Mintz.

Concurrent Validity

"Concurrent validity refers to the relationship between test scores and criterion measurements made at the time the test was given" (Crocker & Algina, 1986, p. 224). In the context of this study, concurrent validity describes the relationship between responses on the test instrument and the Learning-Style Inventory (Kolb, 1985).

The Learning-Style Inventory

The Learning-Style Inventory (LSI) is designed to assess the learning styles of feeling, watching, thinking and doing expressed as the learning modes of Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation respectively (Kolb, 1985). The LSI was revised in 1985 and includes 12 - four- sentence completion items from which the subject must rank order 4 adjective endings in each set. The test takes approximately 10 minutes to complete (Learning-Style Inventory, 1985).

Although the LSI has been the focus of promising research to investigate the existence of learning style preferences, attempts by the LSI to quantify these preferences have produced somewhat spurious results. Freedman and Stumpf (1978) concluded that the intent of the original LSI had theoretical merit but noted the lack of consistency

for validity and reliability raised concerns for its practical utility.

To overcome these criticisms, revisions to the LSI in 1985 included "improvements designed to enhance the scientific measurement specifications and the inventory's practical uses in education and counseling" (Learning-Style Inventory, 1985, p. 1). A review by Gregg (1989) cautioned that "no research has been conducted using the LSI since the middle 1970s. No research could be located that has used the revised LSI" (p. 442). Contrary to this, several studies were found using the revised format (Katz, 1986; Sims, Veres, Watson, & Buckner, 1986; Veres, Sims, & Shake, 1987).

One of the primary concerns for the original LSI was its inability to consistently predict learning styles over time, especially since experiential learning theory implies that preferences remain relatively constant (Veres et al., 1987). Studies involving the revised LSI suggested improved internal consistency and test-retest reliability (Sims et al., 1986) and support for the circular configuration and construct validity proposed by the Experiential-Learning Model (Katz, 1986).

Because the LSI will serve as the criterion to establish concurrent validity for phase preferences in the test instrument, this provides an opportunity to address the need to develop a new instrument when another test has been identified to measure similar properties. Perhaps the best

justification is offered by Kline (1986): "Generally, concurrent validity is useful in that often there are poor tests of the same variable which the new test attempts to improve on. In such cases as this, concurrent validity studies would expect significant but modest correlations" (pp. 4-5).

The test instrument and the LSI differed in two significant ways. First, the test instrument was designed to assess different ways students experience and understand what it is to be a responsible citizen as a result of involvement in community service. Second, items on the test instrument were more directional in nature and therefore may be more predictive of overt behavior (Ajzen & Fishbein, 1980; Rajecki, 1990). These differences establish the uniqueness of the test instrument and underscore its potential to add to existing knowledge as well as create a springboard from which to generate new research.

As reported in the technical specifications for the revised LSI (Learning-Style Inventory, 1985), Chronbach's alpha demonstrated fairly high reliability for the four phases: Concrete Experience (r = .82), Reflective Observation (r = .73), Abstract Conceptualization (r = .83), and Active Experimentation (r = .73, N = 268). Norms for the revised LSI were based on a sample of 1,446 adults ranging in age from 18 to 60 with an average attained educational level of 2 years in college.

Methods and Procedures for Investigating Research Objectives

Research Objective 1: Final Item Selection

A research objective of this study was to investigate the clarity and readability of the items on the initial test instrument. In addition, an item analysis identified those items that made the greatest contribution to the total score for each phase of the test instrument. As a result of this objective, each item on the final test instrument was clear, understandable, and demonstrated a relationship with the total score for its respective phase.

The initial test instrument included a variety of items that reflected the affective, behavioral, and cognitive qualities characteristic to each phase of the Service-Learning Model (SLM). This initial test instrument was distributed to 30 students enrolled at the University of Northern Colorado who represented a cross-section of students based on age and class status. Feedback concerning item clarity and readability was requested from this group of students. In addition, an item analysis was performed on the test instrument to check the strength of each item in relation to the total score for its respective phase. For example, each item written to elicit an affective, behavioral or cognitive quality of the Exploration phase was correlated with the total score for the Exploration phase. As a result, each item on the final test instrument was clear, understandable, and demonstrated a relationship with the total score of its respective phase.

Research Objective 2: Establishing Concurrent Validity

A research objective of this study was to investigate the validity of the test items by correlating the test instrument with the Learning-Style Inventory (Kolb, 1985).

Each phase of the SLM reflects different ways to experience and understand what it is to be a responsible citizen. As proposed, each phase is influenced by multidimensional qualities of thinking, feeling, and behavior. The three qualities in combination reflect the phase preference better than any single quality. Therefore, responses to affective, behavioral, and cognitive items were combined to achieve a total score for each phase.

After the item analysis for the initial test items was completed, a second analysis was performed to correlate the total phase scores of the test instrument with the appropriate total scores for each learning mode on the LSI. For example, the total Exploration score on the test instrument was correlated with the total Concrete Experience score. A one-tailed test and a .10 alpha level of significance was the criteria used to describe the relationship between the test instrument and the LSI.

Reliability

It has been noted that a test can not be valid if it is not reliable (Guilford, 1954; Nunnally, 1978). Several factors can influence the reliability of a test, including number of items and response sets. A brief discussion of each will establish parameters for the test instrument.

It has been established that the number of items on a test will influence reliability (Helmstadter, 1964; Kline, 1986). Similar to psychometric sampling principles, reliability increases with test length, and there is a point of diminishing return. When conditions of item homogeneity are satisfied, even a small number of items will yield moderate reliability (Nunnally, 1978). With this as a guideline, Kline (1986) stated that "twenty items is usually sufficient for reliability" (p. 12).

The tendency for subjects to agree with items on a test can create a response set which also serves as a source of error (Guilford, 1954; Kline, 1986). This is especially relevant given the socially desirable nature of community service activities. Several steps were taken to decrease the likelihood of response sets such as avoiding items that are ambiguous and absolute (Kline, 1986) and writing items targeted toward a specific behavior (Guilford, 1954). Satisfying the qualities of directionality and targeting helped to control for the tendency to acquiesce.

Internal Consistency

There are two predominant methods for determining internal reliability. The first is to correlate the scores from two administrations of the same test (called test-retest reliability), yielding coefficients of equivalence and stability. While this type of reliability test is necessary to instill confidence in the consistency of test

results over time, it did not lend itself to the proposed study. The second method determines internal reliability with a single test administration and was proposed as the procedure to establish internal reliability for each phase of the test instrument.

According to Crocker and Algina (1986), there are two common methods for establishing internal reliability for a single test administration. The first is a split-half method where a random matching of similar test items results in two half-tests. While this is a common method of assessing internal reliability, the statistic assumes that each half consists of parallel items. This in itself is a source of error because the procedure does not yield a unique estimate of the reliability. The second is a statistical measure termed coefficient alpha which does yield a unique estimate of reliability.

Research Objective 3: Establishing Internal Reliability

A research objective of this study was to investigate the internal reliability for each phase of the test instrument by computing a coefficient of internal consistency obtained from a single test administration.

The second method of assessing internal reliability is accomplished by achieving a unique estimate of a single administration of a test called coefficient alpha, and is now recognized as a favorable measure in relation to traditional split-half methods (Crocker & Algina, 1986). High alpha coefficients will suggest that the phase has a strong

internal reliability and will lend support for the level of confidence we can assign to the scores when interpreting the instrument. Low alpha coefficients will imply that dimensional subscales do not combine to predict total phase scores with any degree of confidence. In this case, item revision may be required and caution advised when interpreting the test instrument. According to Anastasi (1988), coefficients ranging from the .80s into the .90s are generally desirable for establishing internal consistency.

Test Administration

Test administration includes the methods and procedures for determining sample size and subject selection. In addition, this section will address the demographic data to be analyzed, distribution and collection procedures.

Sample Size

A total of 300 test packets were distributed, and a minimum of 120 completed test packets were required for the final sample. A test packet included the test instrument, Learning-Style Inventory and demographic profile. This return rate is low because of (a) the criteria to determine usable tests and (b) the minimum number of subjects desired in each phase of the test instrument and Learning-Style Inventory (LSI).

Subjects were encouraged to check their work to ensure all questions in the test packet were answered. Research assistants were requested to monitor this important

condition. The anonymity allowed by the test administration procedures precluded any follow-up contact to recover incomplete information.

Once the tests were scored, a further analysis of the test instrument and the LSI was conducted to verify that each phase was represented. Furthermore, it was desirable to have approximately the same number of subjects in each phase. Failing to achieve representation in each phase, a reasonable number of additional test packets were administered in an attempt to satisfy this condition.

Selection of Subjects

One of the primary objectives of subject selection was to solicit participation from a cross-section of community service experiences concerning frequency, duration, method of delivery and commitment. Crocker and Algina (1986) recommended a heterogeneous sample to increase reliability estimates. Likewise, differences of this nature helped to distinguish between the different phases of the Service-Learning Model (SLM) (Delve et al., 1990a).

One hundred fifty students residing in the residence halls at the University of Northern Colorado (UNC) were randomly selected to participate. Resident Assistants served as research assistants to distribute and collect the test packets. Although this means that all subjects at UNC resided in on-campus housing and therefore may inhibit the ability to generalize results, personalizing the

distribution process and increasing the return rate were anticipated to be the major benefits of this approach.

In addition, 150 students at Colorado State University (CSU) who either participated in one of the 6 community service programs coordinated by the Office of Community Service, lived on a community service special interest floor in the residence halls, or enrolled in a service-learning course taught by Victoria Keller were selected to participate. Program coordinators served as research assistants to distribute and collect the test packets. Because there was not a complete list of all students participating in programs coordinated by the Office of Community Services, the selection procedures were not random.

Demographic Data

Although the purpose of this study was to establish baseline reliability and validity for the test instrument, subjects were also requested to complete a demographic profile (Appendix G). A variety of personal and environmental variables which may influence response tendencies were included in the profile, including class status, frequency and duration of involvement, and method of delivery.

In addition, several of these variables were used as selection criteria for usable test packets. All demographic responses referred to experiences over the prior

academic year, thus providing a finite period of time from which to frame the response.

Selection Criteria to Determine Usable Instruments

Instruments with the following responses were discarded from the final analysis:

Age = (Over 25). To control for differences between traditional and non-traditional learners, all instruments completed by subjects over 25 were not included in the final sample. Twenty-five years of age was used as the cutoff because it reflects the break between traditional and non-traditional as defined at each institution. Students from 18-24 reflect the age range for traditional undergraduates as defined in student development literature (Chickering, 1969).

Enrollment Status = (9 credits or less). Given that a part-time student status implies obligations that may prohibit involvement in community service activities, only full-time students as defined by the institution were included in the final analysis.

Student Class Status = (Other). The study was limited to undergraduate college students.

Each of the following demographic variables have been summarized in a descriptive manner:

Sex = (M, F). The literature suggested that more females than males participate in community service activities (Schindler-Rainman & Lippitt, 1975; Serow, 1990), and

females process experience differently than males (Gilligan, 1982).

Age = (17-19, 20-21, 22-23, 24-25) and Class Status = (Freshman, Sophomore, Junior, Senior). The literature suggested that intellectual (Perry, 1968) and psychosocial (Chickering, 1969) processing is influenced by age and educational level. A breakdown by freshmen, sophomore, junior, and senior has limitations because a freshman may have the benefit of maturational experience beyond one year. Therefore, inferences for student class status required cautious interpretation.

Institution = (CSU, UNC). Although the literature suggested that religious institutions may influence response tendencies (McLaughlin & Smart, 1987; Serow, 1989), both UNC and CSU are state funded, public institutions and the level of moral commitment was not perceived as a source of variance.

Self Report Involvement Frequency (in hours per week) = (0, 1, 2, 3, more than 3). Students were asked to self-report their frequency of involvement in community service activities over the prior year. Frequency of involvement has been identified as having the potential to influence the way students experience and understand what it is to be a responsible citizen (Delve et al., 1990a; Schmidt-Posner, 1989).

Duration (in number of contacts over prior year) = 0, 1-2, 3-4, 5 or more). Duration in combination with

frequency will better describe the effort and quality of involvement. According to Delve et al. (1990a) the way students experience and understand what it is to be a responsible citizen can be a function of the level of commitment the student has demonstrated with a specific activity over a period of time.

Method of Delivery = (Direct = (D), NonDirect = (ND), Indirect = (ID), Does Not Apply = (DNA)). According to Delve et al. (1990a) the method of delivery may influence interpretation of the instrument. Although descriptions for each type of setting are general in nature, the method of delivery may help to descriptively explain differences for how students experience and understand what it is to be a responsible citizen (Kelly, 1974).

Ethnicity = (White = (W), African American = (AA), Hispanic = (H), American Indian = (AI), Asian = (A), Other = (O)). Differences in antecedents and motivations have been suggested to exist between ethnic groups and may influence involvement in community service activities (Lipton & Garza, 1978). Because the ethnic mix at both institutions is weighted in favor of white students, a large sample size was not anticipated for the other ethnic groups. Therefore, any assumptions based on ethnicity will be suspect.

Distribution and Collection Procedures

It was proposed to administer the test packets in April, 1992. This would allow second semester freshmen the benefit of almost a full year of community service experience and enable students to reference the prior year to gauge their frequency and duration of involvement. Resident Directors and Resident Assistants received instructions and were encouraged to participate in the distribution and collection of test packets in a memorandum from the Director of Residence Life at UNC (Appendix N and Appendix O, respectively).

A letter of transmittal for UNC subjects (Appendix P) and a Subject Information Sheet for CSU subjects (Appendix L) introduced the study and included instructions for contacting the researcher if the subject desired to receive the results of the study. Although the items on the test instrument, Learning-Style Inventory (LSI) and demographic profile were not threatening, participants were informed that anonymity would be maintained. Subjects were not asked to identify themselves and responses were presented as a group, thereby further assuring the confidentiality of the subjects. Subjects from UNC and CSU were asked to read and sign a subject consent form prior to participating in the study (Appendix M and Appendix K, respectively).

Subjects were requested to complete the LSI, test instrument and the demographic profile. The directions instructed subjects to record responses directly on the

forms provided for each test. Response forms for the LSI were provided to conform with copyright requirements. Separate forms were provided for the test instrument and demographic profile. All tests were stapled together and numbered so that matching could occur if the tests became separated. Subjects were encouraged to check their work to ensure all questions were answered and research assistants were requested to verify this important condition. One week after test packets were distributed, a follow-up letter was sent to subjects at UNC as a thank you and reminder to return the materials to their Resident Assistant (Appendix Q). Subjects at CSU received a personal reminder from their Program Coordinator.

After these tests were collected, the investigator manually transfered responses onto a computer scanning form to automate data analysis. Responses for the test instrument, LSI and demographic profile transfered directly to the scanning form.

The rationale for distribution and collection procedures was three-fold. First, research assistants from residence life and the Office of Community Service allowed for predictable distribution and collection of the test packets, and helped to generate confidence in the study as legitimate research. Second, the assumptions of the Service-Learning Model (SLM) (Delve et al., 1990a) suggested that service-learning activities facilitate experiencing and understanding what it is to be a responsible citizen.

Because the University of Northern Colorado does not have a centralized office that promotes and coordinates service-learning activities, the subject pool from a service-learning program is essential to evaluate the different phases reflected in the SLM. And third, some of the phases of the SLM involve activities inherent in traditional (no structured service-learning experiences) or non-existent (no formal network for promoting or coordinating experiences) community service programs such as is found at UNC.

The Office of Community Service at CSU

The Office of Community Service at Colorado State University coordinates activities that invite participation in the spectrum of service experiences. This includes indirect experience - defined as void of contact with an agency or client (such as participating in a canned food drive on-campus, yet establishing the element of off-campus destination to satisfy the selection criteria for usable instruments), nondirect experience - defined as an on-site experience but no direct client contact (such as clerical work in a United Way agency) and direct - defined as "face to face interaction with the service population either at the service site or in another setting" (Delve et al., 1990a, p. 11). Because in each case students self-select the type of exposure in which to participate, random selection or assignment is not possible. Although direct experiences are more conducive to service-learning activities,

it is possible to coordinate experiences for groups of students at each level of exposure.

The cooperation of the Director and program coordinators of the Office of Community Service at CSU was critical in order to achieve the desired distribution and collection objectives. Permission to involve students participating in activities coordinated by the Office of Community Service was provided by the Director (Appendix J). All program coordinators are trained by the Program Director. Training involves all aspects of volunteer management including coordinating and administering service-learning activities. Although the researcher attended some of these training sessions to gain perspective concerning the scope and content of the training, there was no attempt to manipulate the content or structure of service-learning activities.

CHAPTER V

RESULTS

The purpose of this study was to construct a test instrument in order to investigate the existence of phases as proposed by the Service-Learning Model (SLM) (Delve et al., 1990a). After the new test instrument was developed, baseline validity and reliability was established. Concurrent validity was established by correlating the phase scores of the new test instrument with the phase scores of the Learning-Style Inventory (LSI) (Kolb, 1985). Internal reliability was established for each phase of the new test instrument by correlating each item with the total score for its respective phase.

This chapter is divided into four sections. First, data for Research Objective 1 will be presented. This will include (a) how the items for the test instrument were selected, (b) the scoring format for the test instrument, and (c) the interpretation of test scores.

The second section will present a profile of the subjects that will be used when discussing the results for Research Objectives 2 and 3. The predominant focus of this section is a descriptive presentation of demographic information from the demographic profile (Appendix G). However, a summary of mean scores for each phase of the test

instrument and Learning-Style Inventory (Kolb, 1985) will also be presented. In addition, a matrix correlating each phase of the test instrument with all of the other phases and total score of the test instrument will be presented.

The third section will present the data for Research Objectives 2 and 3. Correlating each phase of the test instrument with the corresponding phase of the LSI will produce a statement of concurrent validity necessary to satisfy the requirements for Research Objective 2. Correlation coefficients for each item when correlated with its respective phase score were calculated to demonstrate the strength of the relationship. In addition, correlating each item of the test instrument with the total score for its respective phase will produce a statement of internal reliability necessary to satisfy the requirements for Research Objective 3.

The fourth section will present post-hoc tests. These tests were performed in order to supplement the statement of concurrent validity and internal reliability provided by Research Objectives 2 and 3.

Research Objective 1

The first research objective of this study stated:

> A research objective of this study was to investigate the clarity and readability of the items on the initial test instrument. In addition, an item analysis identified those items that made the greatest contribution to the total score for each phase of the test instrument. As a result of this objective, each item on the final test instrument was clear, understandable, and demonstrated a correlation with its respective phase.

Permission to use the Service-Learning Model in this study was received from Cecilia Delve (Appendix C). To establish face validity for issues of clarity and readability, service-learning experts were asked to provide feedback on items identified in the literature review as appropriate for the test instrument. A draft instrument of 98 items was sent to the 3 authors of the Service-Learning Model. Two of the authors provided feedback of this nature. As a result, items were revised and, at the suggestion of the service-learning experts, a Likert scale (a 5-point continuum ranging from Strongly Agree to Strongly Disagree) was chosen as the scoring format.

A draft of the revised test instrument was again sent to the three authors of the Service-Learning Model. The revised test instrument was distributed to 30 students, all of whom were enrolled either at the University of Northern Colorado or Colorado State University in the Spring of 1992. Students from UNC were identified based on a cross-section of age and class status. Students at CSU were all program coordinators with the Office of Community Service. Written feedback was requested for each item concerning clarity and understandability. A total of 20 test instruments were returned. As a result of this feedback, a final instrument was constructed (Appendix H).

After the final instrument was constructed and scoring format finalized, items were placed in phases based on theory and the literature review. Each phase consisted of

12 items. Items were written so that each of the phases had four affective items, four behavioral items, and four cognitive items representative of that phase. The Likert scale allowed subjects to respond to the degree to which they agreed or disagreed with the item.

By design, higher phase scores indicated that the subject utilized the affective, behavioral, and cognitive qualities representative of that phase to experience and understand what it is to be a responsible citizen. Accordingly, lower phase scores indicated that the subject may utilize some of the qualities representative of that phase, however he/she tends to prefer other ways to experience and understand what it is to be a responsible citizen. Therefore, most items were written so that when subjects agreed with the statement, it would be scored with a higher score than if the subjects disagreed with the statement. For example, "I am unsure how I can best help others" is an item that reflects an affective way of experiencing what it is to be a responsible citizen representative of Phase 1. If a subject disagrees with this statement, this would suggest a feeling of confidence for how to best help others.

According to theory and the literature review, an affective response such as the above example does not reflect a Phase 1 way to experience what it is to be a responsible citizen. Therefore, a response of "Strongly Disagree" would receive one point. If a subject agrees

with this statement, this would indicate that he/she is unsure how to best help others. This feeling has been identified as an affective way to experience what it is to be a responsible citizen for Phase 1, and a response of "Strongly Agree" would be scored with five points. Responses of "Disagree", "Neutral" and "Agree" would be scored with two, three, and four, respectively.

Most of the items on the test were scored in this manner, however, several items in Phase 1 were scored in reverse. According to theory and the literature review, disagreeing with item 1 ("I am comfortable helping others I do not know"), item 11 ("I am aware of different groups and/or individuals in the local community that need help"), and item 24 ("I often help others I do not know") would be reflective of a Phase 1 response. Therefore, these items were scored in reverse ("Strongly Disagree" = 5 points, "Strongly Agree" = 1 point). Items in the other phases were not subject to reversal.

Items were then categorized by phase. Table 1 displays items according to each phase and identifies the number corresponding to the number of the item as it appears on the test instrument (Appendix H), and the affective, behavioral, or cognitive nature of the item.

To achieve a total phase score, after each item is scored all scores for items in that phase are added together. Accordingly, a score of 12 is the lowest possible score for any one phase and a score of 60 is the highest

Table 1

Items Categorized by Phase with the Corresponding Affective, Behavioral, or Cognitive Nature of the Item Identified

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Question
1	1A	I am comfortable helping others I do not know
7	1A	I am unsure how I can best help others
14	1A	I help others because it makes me feel good
17	1A	I help others because I feel sorry for those less fortunate than me
16	1B	Activities that involve helping others provide an opportunity for me to socialize with my friends
24	1B	I often help others I do not know
33	1B	I help others only when I am asked
45	1B	I help others only when it is required (class, etc.)
2	1C	I am unsure how I can best help others
11	1C	I am aware of different groups and/or individuals in the local community that need help
29	1C	I help others in order to learn about myself
39	1C	There is a right and a wrong way to help people overcome social issues and concerns
23	2A	I feel a sense of belonging when working with other volunteers
34	2A	I feel a commitment to other volunteers I work with

Table 1 (continued)

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Question
36	2A	I am more comfortable helping others when a group of volunteers are involved
42	2A	It is important for me to feel accepted by other volunteers I work with
4	2B	I participate in several different activities designed to help others
12	2B	I prefer short-term (one time) commitments when helping others
27	2B	I help others because of the recognition I receive from my peers
44	2B	I belong to a group or organization that expects members to be involved with activities designed to help others
9	2C	There are many ways to help people overcome social issues and concerns
30	2C	I believe a group of volunteers can have a greater impact than a single individual in meeting the needs of others
32	2C	I find it difficult to limit my helping to just one activity or organization
40	2C	I value the prestige associated with being a member of a group involved with helping activities
8	3A	I enjoy forming relationships with those I help

Table 1 (continued)

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Question
19	3A	I have a genuine desire to learn about the needs of those I help
41	3A	I feel I have made a difference in the lives of those I have helped
47	3A	I feel committed to helping others overcome social issues and concerns
3	3B	I prefer direct (face to face) contact with those I help
5	3B	I have identified issues in community which have influenced my commitment to helping others
18	3B	Most of my time helping others is spend with a specific issue OR concern
38	3B	I sometimes get too "caught up" in the personal problems of those i help
6	3C	I believe it is important to receive frequent feedback from staff or a supervisor regarding my helping efforts
15	3C	I understand the needs of those I help
35	3C	Helping others will have a positive impact on my quality of life.
46	3C	I often think about how my involvement will impact those I help

Table 1 (continued)

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Question
13	4A	I sometimes feel isolated because my friends don't share my commitment to helping others
25	4A	I feel a lifelong commitment to helping others
28	4A	I feel an inner sense of justice when helping others
31	4A	I enjoy frequent contact with those I help
20	4B	I enjoy teaching volunteers how to help others
22	4B	I enjoy organizing activities designed to help others
26	4B	I prefer long term commitments (one semester or longer) when helping others
48	4B	I have acted as an advocate for those I help
10	4C	Others depend on my help on a consistent basis
21	4C	I have made career decisions based on my experience with helping others
37	4C	Helping others has influenced the way I live my life
43	4C	Some of the people I help are victims of unfair laws or government regulations

score possible. High and low scores are relative according to the total score for the other phases of the test instrument. A comparison of phase scores would then identify the affective, behavioral, and cognitive combinations that the student uses to experience and understand what it is to be a responsible citizen.

Although the items have been written and placed in phases according to theory and the literature review, all of the items have an underlying quality of how students experience and understand what it is to be a responsible citizen. It may therefore be possible to score "high" or "low" in more than one phase. Problems of this nature will create challenges when interpreting test scores, and will be addressed in the recommendations section of Chapter VI.

These scoring procedures invite a brief discussion for how to interpret test scores. For the most part, this interpretation is based in the combination of affective, behavioral, and cognitive items unique to each phase of the test instrument. Although not absolute, this interpretation does reflect the four different ways to experience and understand what it is to be a responsible citizen as identified by the Service-Learning Model (Delve, Stewart, & Mintz, 1990a).

Phase 1: Exploration. A high Phase 1 score reflects the affective nature of apprehension and questioning common in new experiences. Subjects are unsure how to best help others and tend to get involved because of the

self-satisfaction associated with helping others. Voluntarily helping others is not a common way to experience what it is to be a responsible citizen, and in cases when helping occurs, the commitment is short term (one-time) and is usually at the convenience of the helper. Cognitively, a high phase score reflects a greater desire to learn about oneself. Because of the lack of previous exposure to community service, there may not be an awareness of the variety of individuals and organizations in the community that need help.

Phase 2: Clarification. Items in the Clarification phase were written to elicit a preference for participating in a group as another way to experience what it is to be a responsible citizen. A high score for this phase would imply the person is more comfortable helping others when working in a group. Recognition by peers is a common behavioral motivation. A variety of short-term commitments is the preferred way to experience what it is to be a responsible citizen. Understanding what it is to be a responsible citizen is achieved by experiencing that there are a variety of ways to help people overcome social issues and concerns. It is believed that the greatest impact on others can be best achieved by a group of volunteers.

Phase 3: Realization. Items written for the Realization phase focus on the reciprocal nature of experiencing and understanding what it is to be a responsible citizen. A feeling of making a difference in the lives of others and

a desire to learn about the needs of the individual or community served dominates the affective qualities of this phase. Behaviorally, there is a tendency to move away from self-satisfaction as a reason to get involved. Especially as the individual begins to spend more time with a specific issue or concern, direct (face-to-face) interaction provides the student with insights into the needs of the individual or community served. The reciprocal nature of the phase provides the helper with a deeper understanding of how to empower others to help themselves.

Phase 4: Activation. A high score for the Activation phase reflects a feeling of lifelong commitment and frequent contact with the individual or community served. Behaviorally the subject may take an active role in helping other volunteers experience and understand what it is to be a responsible citizen. The deeper commitment to those served parallels a personal investment in long term commitments. Cognitively, the subject begins to make career and lifestyle decisions based on the service experience as a way to understand what it is to be a responsible citizen.

Subjects

Before presenting the results for Research Objectives 2 and 3, it will be helpful to describe the subjects in the study. A total of 300 test packets were distributed - 150 at Colorado State University (CSU) and 150 at the University of Northern Colorado (UNC). A follow-up letter was sent to UNC students one week after the administration to thank

subjects for participating and remind them to return the test packet if they had not done so already (Appendix Q). Program Coordinators followed-up with subjects at CSU by personally encouraging subjects to return the test packets.

Out of the test packets distributed, a total of 166 were returned. After test packets were screened for age, student status and enrollment status according to the criteria outlined in Chapter IV, a total of 135 were retained for the final sample. One of the test packets had missing data in Phase 1 of the test instrument, therefore the correlations and post-hoc tests were run with $N = 134$.

Out of the 150 distributed at CSU, a total of 87 were returned. Twenty-two of the test packets were screened from the final sample because 11 indicated an age of 25 or older, 4 indicated student status as "other", 7 indicated taking nine credits or less, and 2 did not complete the demographic profile. There were also a variety of test packets with incomplete or missing information. For example, one subject did not complete the Learning-Style Inventory (LSI), one subject completed the LSI incorrectly, and one had missing data for the selection criteria in the demographic profile. (Totals exceed 22 because of multiple responses.) Therefore, a total of 65 test packets (48% of the final sample) were retained for CSU.

Out of the 150 distributed at UNC, a total of 79 were returned. Nine of the test packets were screened from the final sample. Five subjects did not complete the LSI

correctly, three did not complete the LSI and one did not complete the demographic profile. Therefore, a total of 70 test packets (52% of the final sample) were retained from UNC.

Demographic data for each subject was collected from responses to the Demographic Profile (Appendix G). Descriptive presentation of the demographic data is presented in two profiles - a personal profile featuring variables of age, class status, gender, and ethnic origin, and a helping profile, feature variables of frequency, duration and method of helping others.

Table 2 provides a snapshot of the personal profile for subjects in the study. Each variable of the profile will be presented according to the frequency and percentage of subjects in the total sample. This will be followed by a description of these variables according to each college in order to provide a more detailed summary of the subjects in the study.

Subjects under the age of 17 and over 25 were screened from the final sample. A profile of subjects according to age reveals the majority were 18-19 years of age (48.1% of the total sample). The 24-25 age category had the least number of subjects (3.7%).

Further analysis revealed the majority of subjects from CSU were older. A total of 25 or 38.5% of the subjects from CSU were between the ages of 20-21 and a total of 22 or 33.8% of the subjects were from 22-23. This is

Table 2

Response Frequencies and Percentages for Personal Profile of Subjects Including College, Age, Class Status, Gender, and Ethnicity Categorized by CSU, UNC, and Total

	CSU		UNC		TOTAL	
Parameter	n	%	n	%	n	%
School	65	48.1	70	51.9	135	100
Age						
18-19	15	23.1	50	71.4	65	48.1
20-21	25	38.5	16	22.9	41	30.4
22-23	22	33.8	2	2.9	24	17.8
24-25	3	4.6	2	2.9	5	3.7
Class Status						
Freshmen	13	20.0	50	71.4	63	46.7
Sophomore	10	15.4	12	17.1	22	16.3
Junior	10	15.4	6	8.6	16	11.9
Senior	32	49.2	2	2.9	34	25.2
Gender						
Male	16	24.6	27	38.6	43	31.9
Female	49	75.4	43	61.4	92	68.1
Ethnicity						
Black	0	0.0	0	0.0	0	0.0
Hispanic	3	4.6	1	1.4	4	3.0
Asian	2	3.1	3	4.3	5	3.7
Native Amer.	1	1.5	1	1.4	2	1.5
Caucasian	59	90.8	61	87.1	120	88.8
Do Not Wish To Provide	0	0.0	4	5.8	4	3.0

dramatically different from UNC, where a total of 50 or 71.4% of the students ranged from 18-19.

Subjects that were not undergraduate class status were screened from the study. For the total sample, the majority of the subjects were freshmen (46.7%). Seniors (25.2%), sophomores (16.3%), and juniors (11.9%) represented the other categories of class status in the total sample.

Again there was a noticeable difference in class status between the two colleges. The majority (49.2%) of subjects from CSU were seniors. The class status profile for UNC was almost the opposite, with 71.4% freshmen dominating the profile and only 2.9% were seniors.

A total of 43 or 31.9% of the subjects in the study were male and 92 or 68.1% of the subjects were female.

The gender percentages for the total sample parallels the breakdown for gender when categorized by college, with males accounting for 24.6% and females accounting for 75.4% of the sample for CSU. The gender profile revealed 38.6% were male and 61.4% were female of the sample retained for UNC.

Over 88% of the total sample was Caucasian/White (not of Hispanic origin), with the other ethnic categories receiving a much lower percentage of the total sample (Black, not of Hispanic origin, 0%), Hispanic, 3%, Asian/Pacific Islander, 3.7% and Native American Indian, 1.5%). Four of the subjects did not wish to disclose this information.

The ethnic breakdown for each college was similar to the percentage for the total sample, with 90.8% of the subjects from CSU and 87.1% of the subjects from UNC indicating an Caucasian/White ethnic origin.

Helping Profile

The helping profile provides another demographic snapshot of subjects involved in the study. Using the helping activity that required the most of the student's time as a reference, the Demographic Profile (Appendix G) requested each subject to self-report his/her level of involvement in helping activities. Table 3 displays the helping profile of frequency, duration and method of involvement for subjects in the final sample.

The majority (36.3%) of the students in the final sample were involved in helping activities over 3 hours per week. Only 10 or 7.4% of the subjects indicated they did not spend any time helping others over the course of the prior academic year.

Responses to this question were very different between the two colleges. The majority (52.3%) of the students from CSU indicated involvement over 3 hours per week. Only one subject from CSU indicated that he/she did not spend any time helping others over the course of the prior year. The response percentages for UNC subjects ranged from "9-16 contacts" per week (27.1%) to "none" (12.9%), and the responses were more evenly dispersed over the possible

Table 3

Response Frequencies and Percentages for the Helping Profile of Subjects Including Frequency, Duration, and Method of Involvement Categorized by CSU, UNC, and Total

	CSU		UNC		TOTAL	
Parameter	n	%	n	%	n	%
Frequency: Number of Times/Week						
None	1	1.5	9	12.9	10	7.4
1	7	10.8	17	24.3	24	17.8
2	12	18.5	19	27.1	31	23.0
3	11	16.9	10	14.3	21	15.6
Over 3	34	52.3	15	21.4	49	36.3
Total	65		70		135	
Duration: Number of Contacts/Years*						
None	1	1.5	15	21.7	16	11.9
1-8	18	27.7	36	52.2	54	40.0
9-16	9	13.8	7	10.1	16	11.9
Over 17	37	56.9	11	15.9	47	34.8
Total	65		69		134	
Method: Method of Contact:						
Direct	60	92.3	8	82.9	118	87.4
Non-Direct	3	4.6	1	1.4	4	3.0
Indirect	1	1.5	0	0.0	1	0.7
None/DNA	1	1.5	11	15.7	12	8.9
Total	65		70		135	

*Note: Totals of less than 135 represent incomplete or missing data

choices when compared to self-report frequencies for CSU subjects.

The duration of the helping experience was represented by the number of contacts with the individual or community served over the prior academic year. Forty-seven or 34.8% of the total sample reported "17 or more contacts". The response trends for "no contacts" and "9-16 contacts" options each had 11.9% of the total sample.

As with many of the previous variables, there was a difference in response sets between the two colleges. The majority (56.9%) of the subjects at CSU reported "17 or more" contacts with the individual or community served over the prior year, and only one subject from CSU reported "no contact". On the other hand, 36 or 52.2% of the subjects from UNC reported between "1-8 contacts" over the prior year, and 21.7% reported "no contact".

Subjects were also requested to report the nature of contact when helping others. The majority of the subjects in the total sample (87.4%) reported direct (face-to-face) contact with the individual or community served, and all other methods of contact received fewer responses.

Subjects at CSU indicated the direct method of contact for 92.3% of the sample, and contacts of a similar nature were reported by UNC subjects (82.9% of sample retained for UNC). Of the 2 colleges, UNC had the largest percentage (15.7%) of subjects that indicated "no contact/does not apply" for this variable.

Mean Test Scores

In addition to the demographic profiles, it is also helpful to describe how the subjects scored on the test instrument and the Learning-Style Inventory (LSI) in order to preface the data for Research Objectives 2 and 3. A summary of the coefficients for each item when correlated to the total score for its respective phase and coefficients for each phase when correlated with all other phases and the total score of the test instrument is presented.

Table 4 displays the mean scores for each phase of the test instrument categorized by college. Subjects at UNC had a higher mean score (M = 35.81) for Phase 1 of the test instrument than subjects at CSU (M = 33.60). Subjects at CSU had higher mean scores on all of the other phases of the test instrument. Mean scores for Phase 4 revealed the greatest difference between the means for all four phases of the test instrument (M = 44.37 for CSU, M = 39.69 for UNC).

Table 5 displays the mean scores for each phase of the Learning-Style Inventory (Appendix I). Unlike the scores for the test instrument, all of the mean phase scores for the LSI were very similar. Subjects from CSU scored higher on the Concrete Experience phase (LSI1) (M = 28.28) and the Abstract Conceptualization phase (LSI4) (M = 34.89) when compared to scores for subjects from UNC (M = 26.77 and M = 33.32, respectively). Subjects from UNC scored higher on the Reflective Observation phase (LSI2) (M = 31.24) when

Table 4

Means and Standard Deviations for Each Phase of the Test Instrument Categorized by CSU and UNC

	Phase 1		Phase 2		Phase 3		Phase 4	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
CSU (n = 65)	33.60	4.04	40.83	4.99	48.26	4.49	44.37	5.26
UNC (n = 69)	35.81	4.85	38.75	4.92	44.25	5.01	39.55	5.09

Table 5

Means and Standard Deviations for Each Phase of the Learning-Style Inventory Categorized by CSU, UNC, and Total

	LSI 1		LSI 2		LSI 3		LSI 4	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
CSU (n = 65)	28.28	8.29	28.83	7.72	28.06	7.68	34.89	7.12
UNC (n = 69)	26.77	7.41	31.35	7.88	28.71	7.64	33.32	7.21

compared to subjects from CSU (M = 28.82). Subjects from CSU and UNC had virtually the same mean score on the Abstract Conceptualization phase (LSI3) (M = 28.06 and M = 28.71, respectively).

Table 6 reflects the coefficients for each item when correlated with its respective total phase score. Coefficients for affective items in Phase 1 ranged from r = .0940 to r = .3955. Items of a behavioral nature ranged from r = .1650 to r = .2876 and cognitive items ranged from r = .0345 to r = .2957.

For Phase 2, coefficients for affective items ranged from r = .2533 to r = .5418, behavioral items ranged from r = -.1392 to r = .2993 and cognitive items ranged from r = .1430 to r = .4255.

Items for Phase 3 all demonstrated positive coefficients with the total phase score for Phase 3. Affective items ranged from r = .4375 to r = .5856. Behavioral items ranged from r = .2608 to r = .4051 and cognitive items ranged from r = .0982 to r = .5595.

Items for Phase 4 also all demonstrated positive coefficients with the total phase score. Affective items ranged from r = .0119 to r = .6425, behavioral items ranged from r = .2274 to r = .5082 and cognitive items ranged from r = .1907 to r = .6040.

Table 7 completes the snapshot of response data for the test instrument. This table displays the coefficients for each phase of the test instrument when correlated with

Table 6

Correlation Coefficients When Each Item is Correlated to the Total Score for Its Respective Phase

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Correlation	Question
1	1A	.2478	I am comfortable helping others I do not know
7	1A	.2350	I am unsure how I can best help others
14	1A	.0940	I help others because it makes me feel good
17	1A	.3955	I help others because I feel sorry for those less fortunate than me
16	1B	.1650	Activities that involve helping others provide an opportunity for me to socialize with my friends
24	1B	.2876	I often help others I do not know
33	1B	.2127	I help others only when I am asked
45	1B	.2118	I help others only when it is required (class, etc.)
2	1C	.2957	I am unsure how I can best help others
11	1C	.1761	I am aware of different groups and/or individuals in the local community that need help
29	1C	.0345	I help others in order to learn about myself

Table 6 (continued)

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Correlation	Question
39	1C	.1325	There is a right and a wrong way to help people overcome social issues and concerns
23	2A	.4968	I feel a sense of belonging when working with other volunteers
34	2A	.5418	I feel a commitment to other volunteers I work with
36	2A	.2533	I am more comfortable helping others when a group of volunteers are involved
42	2A	.4491	It is important for me to feel accepted by other volunteers I work with
4	2B	.1663	I participate in several different activities designed to help others
12	2B	-.1392	I prefer short-term (one time) commitments when helping others
27	2B	.2993	I help others because of the recognition I receive from my peers
44	2B	.2661	I belong to a group or organization that expects members to be involved with activities designed to help others
9	2C	.1430	There are many ways to help people overcome social issues and concerns

Table 6 (continued)

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Correlation	Question
30	2C	.2714	I believe a group of volunteers can have a greater impact than a single individual in meeting the needs of others
32	2C	.2009	I find it difficult to limit my helping to just one activity or organization
40	2C	.4255	I value the prestige associated with being a member of a group involved with helping activities
8	3A	.5065	I enjoy forming relationships with those I help
19	3A	.5463	I have a genuine desire to learn about the needs of those I help
41	3A	.4375	I feel I have made a difference in the lives of those I have helped
47	3A	.5856	I feel committed to helping others overcome social issues and concerns
3	3B	.3175	I prefer direct (face-to-face) contact with those I help
5	3B	.4051	I have identified issues in the community which have influenced my commitment to helping others
18	3B	.2608	Most of my time helping others is spend with a specific issue or concern

Table 6 (continued)

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Correlation	Question
38	3B	.0982	I sometimes get too "caught up" in the personal problems of this I help
6	3C	.3426	I believe it is important to receive frequent feedback from staff or a supervisor regarding my helping efforts
15	3C	.4074	I understand the needs of those I help
35	3C	.4820	I understand the needs of those I help
46	3C	.5595	I often think about how my involvement will impact those I help
13	4A	.0119	I sometimes feel isolated because my friends don't share my commitment to helping others
25	4A	.6425	I feel a lifelong commitment to helping others
28	4A	.2274	I feel an inner sense of justice when helping others
31	4A	.2436	I enjoy frequent contact with those I help
20	4B	.5082	I enjoy teaching volunteers how to help others
22	4B	.4329	I enjoy organizing activities designed to help others

Table 6 (continued)

Item #	Phase Affective (A) Behavioral (B) Cognitive (C)	Correlation	Question
26	4B	.4030	I prefer long term commitments (one semester or longer) when helping others
48	4B	.3180	I have acted as an advocate for those I help
10	4C	.3421	Others depend on my help on a consistent basis
21	4C	.5191	I have made career decisions based on my experience with helping others
37	4C	.6040	Helping others has influenced the way I live my life
43	4C	.1907	Some of the people I help are victims of unfair laws or government regulations

all of the other phases and the total score of the test instrument. Using a one-tailed test, results indicated that each phase correlated positively and significantly ($p < .01$) with the total score of the test instrument. The total score for Phase 1 had a positive and significant correlation with Phase 2 ($r = .2089$, $p < .01$), and a negative and significant correlation with Phase 4 ($r = -.2176$, $p < .01$). Phase 2 correlated positively and significantly with Phase 3 ($r = .4240$, $p < .01$) and Phase 4 ($r = .4437$, $p < .01$). Phase 3 had a positive and significant correlation with Phase 4 ($r = .6794$, $p < .01$).

Table 7

Matrix of Correlation Coefficients When Each Phase Score is Correlated With All of the Other Total Phase Scores and the Total Score of the Test Instrument

	Phase 1	Phase 2	Phase 3	Phase 4
Phase 1 ($N = 134$)	1.00	.2089**	.0092	-.2176**
Phase 2 ($N = 135$)		1.00	.4240**	.4437**
Phase 3 ($N = 135$)			1.00	.6794**
Phase 4 ($N = 135$)				1.00
Total Score	.3201**	.7737**	.8102**	.7545**

** $p < .01$

Research Objectives 2 and 3

Research Objective 2 stated:

> A research objective of this study was to investigate the validity of test items by correlating the test instrument with the Learning-Style Inventory (Kolb, 1985).

Table 8 displays the correlations when the total scores for each phase of the test instrument were correlated with the total scores for each phase of the Learning-Style Inventory. Phase 3 of the test instrument had a significant and positive correlation with Phase 1 of the LSI ($r = .2308$, $p < .01$) and a negative and significant correlation with Phase 2 of the LSI ($r = -.1526$, $p < .05$). Phase 4 of the test instrument had a positive and significant correlation with Phase 1 of the LSI ($r = .2020$, $p < .01$) and a negative and significant correlations with Phase 2 of the LSI ($r = -.1502$, $p < .05$). None of the other correlations were significant.

Research Objective 3 stated:

> A research objective of this study was to investigate the internal reliability for each phase of the test instrument by computing a coefficient of internal consistency obtained from a single test administration.

Table 9 displays the coefficients of internal consistency for each phase of the test instrument. From this presentation, Phase 3 exhibited the strongest ($r = .7582$) and Phase 1 exhibited the weakest ($r = .5266$) internal reliability.

Table 8

Matrix of Correlation Coefficients When Each Total Phase Score of the Test Instrument is Correlated With Each Total Phase Score of the Learning-Style Inventory

	Test Instrument			
	Phase 1 (N = 134)	Phase 2 (N = 135)	Phase 3 (N = 135)	Phase 4 (N = 135)
LSI 1 (N = 135)	-.1395	.1358	.2308**	.2020**
LSI 2 (N = 135)		-.1123	-.1526*	-.1503*
LSI 3 (N = 135)			-.1136	-.0606
LSI 4 (N = 135)				-.0017

*p < .05 **p < .01

Table 9

Coefficients of Internal Consistency for Each Phase of the Test Instrument

Parameter	Phase 1 (N = 134)	Phase 2 (N = 135)	Phase 3 (N = 135)	Phase 4 (N = 135)
Alpha	.5266	.6244	.7582	.7279

Post-hoc Tests

Two interesting results were identified as a function of the data presentation. First, there were noticeable differences for the mean phase scores on the test instrument between colleges. Second, there were noticeable differences for the mean phase scores on the test instrument involving the self-report profile for duration of involvement. Interpreting results of this nature can be used to supplement the statement of validity and reliability produced as a result of Research Objectives 2 and 3. Because these differences were not included as part of the research objectives, analysis of these differences required post-hoc tests.

Analysis of variance (ANOVA) is a common statistic used to determine if there is a significant difference between the means of two groups. Comparisons were made between mean scores for CSU and UNC for each phase of the test instrument. Results of this ANOVA are called main effects for groups.

Comparisons were also made for the self-report measure for duration. For the purpose of this comparison, responses were combined into two categories. Responses for "none" and "1-8 contacts" were combined as one group (n = 64). The other group combined responses for "9-16 contacts" and "17 or more contacts" (n = 70). Mean scores for each phase of the test instrument were compared according to these two groups. Results of this ANOVA are called main effects for

contacts. A comparison of the means for groups and contacts is performed as a function of ANOVA to determine if any interaction between groups and contacts existed. The alpha level for a one-tailed test of significance was set at .10 to be consistent with the alpha level established for Research Objectives 2 and 3.

Table 10 displays the means and standard deviations for all phases of the test instrument. This is the same information reported in Table 1, and is repeated here for clarity. Comparisons between CSU and UNC revealed that the mean scores for UNC are higher for Phase 1 (M = 35.81 and M = 33.60, respectively). Mean scores for CSU are observed to be higher for the other phases of the test instrument.

Table 10

Means and Standard Deviations Comparing Each Phase Score of the Test Instrument for CSU and Each Phase Score for UNC

	CSU (n = 65)		UNC (n = 69)	
Phase	Mean	SD	Mean	SD
Phase 1	33.60	4.04	35.81	4.85
Phase 2	40.83	4.99	38.75	4.91
Phase 3	48.26	4.49	44.25	5.02
Phase 4	44.37	5.26	39.55	5.09

Table 11 displays the means and standard deviations for the two categories created for the duration of

involvement variable. Subjects self-reporting eight or less contacts over the prior academic year were combined to form one group and subjects self reporting nine or more contacts over the same period of time were combined to form the other group. Scores on the test instrument were then calculated according to these two groups. Subjects with 8 or less contacts scored higher than subjects with 9 or more contacts on Phase 1 of the test instrument (M = 35.91 and M = 33.45, respectively). Subjects with nine or more contacts over the prior year scored higher on all of the other phases of the test instrument.

Table 11

Means and Standard Deviations Comparing Each Phase Score for the Duration of Involvement Index for Less than 8 Contacts With the Duration of Involvement Index for 9 or More Contacts Over the Prior Academic Year

	8 or Less (n = 70)		9 or More (n = 64)	
Phase	Mean	SD	Mean	SD
Phase 1	35.91	4.39	33.45	4.50
Phase 2	38.61	5.20	41.02	4.59
Phase 3	44.67	5.15	47.86	4.67
Phase 4	39.51	5.03	44.48	5.26

Table 12 is the ANOVA source table for Phase 1, and reveals a significant difference for the main effect for

groups (F (1, 130) = 8.49, p < .01) and a significant difference for the main effect for contacts (F (1, 130) = 4.70, p < .05). There was no significant interaction between groups and contacts.

Table 12

F Ratios for Two-way Analysis of Variance Comparing Phase 1 Scores for Groups, Contacts, and Interaction Between Groups and Contacts

Source	DF	MS	F	p
Group	1	163.71	8.49	.0042***
Contacts	1	90.52	4.70	.0321**
Interaction	1	49.18	2.55	.1127
Error	130	19.28		

**p < .05 ***p < .01

Table 13 is the ANOVA source table for Phase 2 and reveals the main effect for groups was significant (F (1, 130) = 5.99, p < .05). The main effect for contacts was also significant (F (1, 130) = 3.76, p < .10.). There was no interaction between groups and contacts for Phase 2.

Table 14 is the ANOVA source table for Phase 3 and, again, the main effect for groups was significant (F (1, 130) = 24.01, p < .01). The main effect for contacts was also significant (F (1, 130) = 3.60, p < .10). There was no interaction between groups and contacts.

The final ANOVA source table (Table 15) again reinforces the differences between the means of both groups.

Table 13

F Ratios for Two-way Analysis of Variance Comparing Phase 2 Scores for Groups, Contacts, and Interaction Between Groups and Contacts

Source	DF	MS	F	p
Group	1	144.41	5.99	.0157**
Contacts	1	90.56	3.76	.0547*
Interaction	1	15.09	0.63	.4302
Error	130	24.09		

*p < .10 **p < .05

Table 14

F Ratios for Two-way Analysis of Variance Comparing Phase 3 Scores for Groups, Contacts, and Interaction Between Groups and Contacts

Source	DF	MS	F	p
Group	1	539.59	24.01	.0001***
Contacts	1	80.95	3.60	.0599*
Interaction	1	0.37	0.02	.8977
Error	130	22.48		

*p < .10 *** p < .01

The main effect for groups was significant (F (1, 130) = 31.60, $p < .01$) as well as the main effect for contacts (F (1, 130) = 13.46, $p < .01$). There was no interaction between groups and contacts.

Table 15

F Ratios for Two-way Analysis of Variance Comparing Phase 4 Scores for Groups, Contacts, and Interaction Between Groups and Contacts

Source	DF	MS	F	p
Group	1	777.11	31.60	.0001***
Contacts	1	331.03	13.46	.0004***
Interaction	1	7.94	0.32	.5710
Error	130	24.59		

***$p < .01$

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter features four sections. The first section restates the purpose and provides a brief overview for the results of the study. The second section discusses each research objective and offers explanations and conclusions based on the results. The third section proposes recommendations for further research and the final section addresses implications this study holds for student service administrators.

Summary

The intent of this study was to construct a test instrument in order to investigate the existence of phases as identified by the Service-Learning Model (Delve et al., 1990a). As a result, several research objectives were proposed to investigate the different ways students experience and understand what it is to be a responsible citizen.

The construction of clear and understandable test items, and an item analysis for the test instrument were performed to satisfy Research Objective 1. Each phase of the Learning-Style Inventory (Kolb, 1985) was correlated with its corresponding phase of the test instrument to

produce a statement of concurrent validity to satisfy Research Objective 2. Coefficients of internal consistency were calculated for each phase of the test instrument to produce a statement of internal reliability to satisfy research Objective 3.

An initial set of 98 items constructed according to theory and the literature review were critically reviewed by the authors of the Service-Learning Model (Delve et al., 1990a). Items and test format were revised based on this feedback and the appropriateness of these revisions was confirmed in follow-up correspondence with these experts. In addition, this revised test instrument was also provided to students at the University of Northern Colorado (UNC) and Colorado State University (CSU). Written feedback was requested concerning the clarity and understandability of each item as well as the test format. Based on this feedback, the final instrument was constructed.

The second research objective proposed to establish concurrent validity by correlating phases of the test instrument with parallel phases of the LSI. Phase 1 of the LSI had a positive and significant correlation with Phase 3 of the test instrument (r = .2308, p < .01) and Phase 4 of the test instrument (r = .2020, p < .01). Phase 2 of the LSI correlated negatively and significantly with Phase 3 of the test instrument (r = -.1526, p < .05) and Phase 4 of the test instrument (r = -.1502, p < .05). Based on these

results, it was not possible to produce a statement of validity for the test instrument.

A coefficient of internal consistency was calculated for each phase of the test instrument to satisfy the third Research Objective of the study. As a result, each item was correlated with the total score for its respective phase. Correlation coefficients for each item were calculated in order to demonstrate the relationship between the item and the total phase score.

The internal reliability for each phase was disappointingly low. Coefficients ranged from $\underline{r}$ = .5266 for Phase 1 to $\underline{r}$ = .7582 for Phase 3 of the test instrument. Because these coefficients were below the range identified for acceptable reliability, it was not possible to produce a statement of internal reliability for the test instrument.

Subjects

A total of 135 subjects were retained in the final sample of the study. Sixty-five subjects participating in activities coordinated by the Office of Community Service at Colorado State University in the spring of 1992 were included in the final sample. Seventy subjects living in the residence halls at University of Northern Colorado in the spring of 1992 were also included in the final sample.

The majority of the subjects were 18-19 years of age (48.1% of the total sample), however, CSU subjects tended to represent a larger percentage of subjects over the age

of 20. The majority of subjects were freshmen (46.7% of the total sample), and corresponding with the subject profile for age, the majority of the students at CSU were seniors (49.2%), whereas 71.4% of the subjects from UNC were freshmen. The majority of the subjects (68.1%) in the final sample were female, and over 88% of the final sample reported their ethnic origin as Caucasian/White.

The majority (36.3%) of subjects in the final sample indicated they were involved in helping activities 3 or more times per week over the prior academic year. This percentage was influenced by subjects at CSU, as 52.3% of the subjects spent over 3 hours per week in helping activities as compared to 21.4% of the subjects for the self-reported frequency of involvement at UNC. The majority of subjects in the final sample (40%) reported between "1-8 contacts" with the same individual or community served over the course of the prior academic year. This percentage was driven by subjects at UNC, where 52.2% reported between "1-8 contacts" as compared to only 27.7% at CSU. The other category which will become important in the post-hoc tests is the category for "17 or more contacts". Whereas, 56.5% of CSU subjects indicated "17 or more contacts" with the individual or community served, only 14.5% of the subjects reported involvement of this duration at UNC. The majority (87.4%) of the subjects in the final sample indicated having direct (face-to-face) contact with the individuals or community served.

Conclusions

This section will discuss each research objective and offer conclusions framed in the context of demographic variables for subjects participating in the study.

Research Objective 1

> A research objective of this study was to investigate the clarity and understandability of the items on the initial test instrument. In addition, an item analysis identified those items that made the greatest contribution to the total score for each phase of the test instrument. As a result of this objective, each item was clear, understandable, and demonstrated a relationship with the total score for its respective phase.

The feedback received from service-learning experts and students at CSU and UNC provided a thorough review of items and test format. This satisfied the conditions for face validity and provided the confidence to continue with the item analysis.

As a result, the researcher was comfortable that the dynamics for the first research objective were satisfied. Accordingly, the affective, behavioral, and cognitive items combined to provide an objective assessment of four different ways to experience and understand what it is to be a responsible citizen according to the Service-Learning Model (Delve et al., 1990a).

Research Objective 2

> A research objective of this study was to investigate the validity of the test items by correlating the test instrument with the Learning-Style Inventory (Kolb, 1985).

For this study, it was anticipated that each phase of the test instrument would demonstrate a positive and significant correlation with its respective phase of the LSI. A statement of this nature would have provided support that the ways to experience and understand what it is to be a responsible citizen model the different ways to learn as identified by the Experiential-Learning Model. However, correlations between the phases of the two instruments did not lend any support for concurrent validity for the test instrument. This means that there was no relationship between the different ways students experience and understand what it is to be a responsible citizen and the different learning styles identified as a similar measure of the same construct.

One explanation for this lack of correlation may be explained by the nature of learning styles. An assumption of the Experiential-Learning Theory is that learning styles influence "the way we solve problems, make decisions, and develop and change our attitudes and behavior" (Smith & Kolb, 1986). Stewart (1990) identified similarities between the ways students experience and understand what is to be a responsible citizen and an individual's preferred learning style. For example, it was proposed that using the qualities of the Exploration phase in the SLM to experience and understand what it is to be a responsible citizen would be directly influenced by the Concrete Experience learning style as measured by the LSI. However,

perhaps learning styles transcend the phases of the SLM, and therefore, no one specific style is characteristic of a particular phase. For instance, discussion, observation and reflection are learning styles representative of the Reflective Observation learning mode in the Experiential-Learning Model that would influence the Clarification phase. However, these learning styles are also appropriate for the Exploration, Realization, and Activation phases of the SLM.

Another explanation may be related to the scoring format of the LSI. The phases of the SLM are proposed as four different ways to experience and understand what it is to be a responsible citizen. The forced-choice format of the LSI provides the ability to demonstrate the bi-polar nature of the Experiential-Learning Model (Kolb, 1984). The Likert scale of the test instrument was designed to discriminate between each phase as a different and unique way to experience and understand what it is to be a responsible citizen. Therefore, a high score on one phase does not necessarily require a low score on another phase.

As stated, the LSI was identified as measuring learning styles with similar qualities as those employed when experiencing and understanding responsible citizenship in the SLM (Stewart, 1990). However, using the LSI was identified as a possible limitation of the study because it does not measure the exact same (albeit similar), constructs as proposed by the SLM. Therefore, another

explanation for the lack of correlation between similar phases of the test instrument and the learning modes as measured by the LSI may be that the LSI was a poor choice of instruments to use to provide a statement of concurrent validity.

Although the second Research Objective could not produce a clear statement of concurrent validity for the test instrument, this does not necessarily either support or refute the assumptions of the SLM. However, subsequent post-hoc tests do lend support for the test instrument as a measure of service-learning. The ability for the post-hoc tests to contribute to a statement of validity is grounded in the personal and helping profile of the subjects.

A descriptive presentation of the mean scores for each phase of the test instrument demonstrated differences between the two colleges. The observed differences in mean scores for the test instrument were significantly different and in the predicted direction for each phase when using the university as the independent variable. Because UNC does not actively promote a structured service-learning program, higher scores in Phase 1 and perhaps Phase 2 would be predicted. Accordingly, higher scores would be predicted for Phase 3 and Phase 4 for subjects at CSU because of the service-learning program offered by the Office of Community Service. Higher scores for subjects at CSU might be predicted for Phase 2 because group participation is expected for many programs coordinated by the Office.

Results indicated that mean scores for UNC were significantly higher for Phase 1, reflecting a more exploratory and "volunteer" approach to experiencing and understanding what it is to be a responsible citizen. Mean scores for Phase 2, Phase 3, and Phase 4 were significantly higher for CSU. Especially because of the questionable use of the LSI to establish concurrent validity, this result can help to supplement a statement of concurrent validity for the test instrument.

However, it is important to temper this result in the context of demographic data for age and class status. According to the SLM, Phase 3 and Phase 4 represent a more informed way to experience and understand what it is to be a responsible citizen. Subsequently, student development theory has suggested that age and class status influence affective, behavioral and cognitive processing in college students (Chickering, 1969; Perry, 1968). The demographic profile clearly demonstrates that subjects at CSU were older and higher in student status when compared to subjects at UNC. This is an exciting result because of the potential developmental implications for the test instrument. However, differences of this nature have a confounding effect for this study. Therefore, it is unknown from these results if differences in test scores have been influenced by the service-learning program at CSU or by the personal characteristics of age and class status.

Differences in test scores were also noticed when considering the duration of involvement as an independent variable. These results also lend credibility to the test instrument. According to the SLM, a longer and more consistent commitment to helping others would result in Phase 3 or Phase 4 ways to experience and understand what it is to be a responsible citizen. Accordingly, a commitment shorter in duration would lend to Phase 1 or Phase 2 ways of experiencing and understanding. Results of the post-hoc tests for duration of involvement confirmed that differences in mean phase scores between contacts shorter (eight or less) and longer (nine or more) in duration were significant and in the predicted direction. Accordingly, subjects with eight or fewer contacts over the prior academic year scored higher on Phase 1 of the test instrument. Subjects with nine or more contacts over the prior academic year scored higher on Phase 2, 3, and 4. It should be noted that the majority of subjects reporting nine or more contacts were from CSU (71%) and subjects reporting eight or less contacts were from UNC (72%). Again, it is unclear if these differences were influenced by the duration of involvement or personal variables such as age and class status.

Research Objective 3

A Research Objective of this study was to investigate the internal reliability for each phase of the test instrument by computing a coefficient of internal consistency obtained from a single test administration.

It was anticipated that each phase of the test instrument would have a high coefficient of internal consistency. A high coefficient was defined by Anastasi (1988) as ranging from .80 and beyond .90. While none of the phases demonstrated an internal reliability of this strength, the coefficients for each phase showed promise. It is common for tests to undergo a variety of revisions and several administrations before a reasonable validity and reliability can be established (Kline, 1986).

It is important to consider the relationship between the item and the total phase score when correlating the results of this objective. Low correlation coefficients indicate a weak relationship with the total phase score, and high correlations identify items that make a stronger contribution to the total phase score. Deleting weak items will strengthen the coefficient of internal consistency for the respective phase. It is also possible to strengthen the internal reliability of each phase by revising the items that demonstrate a weak relationship and re-administer the test instrument to achieve new coefficients for internal consistency.

It is also important to analyze Research Objective 3 in the context of the other descriptive data. Specifically, it would be desirable for each phase of the test instrument to measure a different and unique way to experience and understand what it is to be a responsible citizen. However, the inter-item correlations for phase scores

(Table 9) do not support this condition. The actual results indicated that many phases have strong and positive correlations with each other. Essentially, this indicates that the phases are measuring the same construct. Therefore, even if the internal reliability for each phase were strong, it would be difficult to produce a meaningful statement of internal reliability. Given this limitation, it is interesting to note that differences in mean scores for Phase 1 are significant and in the predicted direction between groups (CSU and UNC) and between contacts (eight or less and nine or more). This suggests that items in Phase 1 are measuring something different than the other phases in the test instrument. Differences in mean scores for Phase 2, 3, and 4 are also significant and in the predicted direction for both groups and contacts, and these differences become more obvious as the phases increased. However, a more explicit statement about this difference must be reserved for future research.

There are a variety of procedures that could enhance the inter-item correlations for phase scores, such as placing items in phases according to factor analysis and revising or eliminating the items that do not demonstrate a strong correlation with their respective phase score. However, although each of these suggestions may artificially strengthen the internal reliability of the test instrument, the resulting placement of items in phases may not reflect the theory of the service-learning.

Recommendations

More research needs to be conducted before the Service-Learning Model (Delve et al., 1990a) can be empirically confirmed or rejected. Given the lack of a statement of validity and reliability resulting from Research Objectives 2 and 3, it remains inconclusive whether or not the test instrument can identify four different ways in which students experience and understand what it is to be a responsible citizen. Therefore, many of the recommendations for future research focus on further investigations concerning the test instrument.

The recommendations take the position that further research should be conducted before assuming the SLM is not a valid model from which to base developmental decisions. This direction is taken primarily because of the potential demonstrated by the post-hoc tests conducted in the study. As previously stated, although the test instrument appears to be identifying differences between groups (CSU and UNC) and contacts (eight or less and nine or more) in a predicted manner, because we do not know what the test is measuring, we can not explicitly define these differences. However, because each of the items identifies an affective, behavioral or cognitive quality for helping others, it would be prudent to suggest that these differences are related to some measure of helping others.

General Recommendations for Future Research

Further research to consider in general for the test instrument include the following suggestions:

1. The test and scoring format need to be evaluated with respect to interpretation of test scores. From this study, it is clear that subjects utilize a variety of ways to experience and understand what it is to be a responsible citizen. Small differences between mean scores for Phase 2, Phase 3, and Phase 4 were observed. If the test instrument has developmental implications, this potential could be further investigated by administering the instrument to younger and older age groups. Perhaps the evenly dispersed scores for Phases 2, 3, and 4 represent the nature of transition identified during college (Chickering, 1969). If so, phase scores for younger age groups may cluster around Phase 1 and Phase 2, and older age groups may cluster around Phase 3 and Phase 4. Erikson's (1968) eight stage theory could help to explain results for younger subjects and a theory of adult development such as Levinson (1978) or Kohlberg (1969) could be applied to older subjects.

2. The demographic profile of the study related to gender was somewhat anticipated. The profile for subjects at UNC mirrors the male/female ratio for the student population. In addition, it has been suggested that more females participate in community service activities (Serow, 1990). This could explain the higher response rate for

females in addition to the male/female ratio of subjects participating in programs coordinated by the Office of Community Service at CSU. Comparison of mean scores for gender was not performed as a post-hoc test in this study because of the large difference in group sizes and because the results would not meaningfully contribute to the research objectives. Given larger and more comparable sample sizes, differences of this nature could be investigated. Research of this nature may add to existing theories of gender differences (Gilligan, 1982).

3. According to the study by Lipton and Garza (1978), differences in motivations were found to exist between Anglos and Hispanics. The small sample size for ethnic origins other than Anglos was anticipated, and therefore, differences in mean test scores was not investigated between the different ethnic groups. Given larger and more comparable sample sizes, these differences could be investigated. Research of this nature can help to determine if cultural differences influence how to experience and understand what it is to be a responsible citizen.

Concurrent Validity Recommendations for Future Research

Further research for concurrent validity may consider the following suggestions:

1. Now that a test instrument has been constructed, it may be beneficial to discuss the phases of the test instrument with students involved in community service

activities. Several focus groups could be convened to discuss the ways to experience and understand what it is to be a responsible citizen as identified by the test instrument. In addition, there may be other ways to experience and understand what it is to be a responsible citizen not identified by the SLM which could be discussed.

2. It would be interesting and helpful to provide students with interpretations for each phase as measured by the test instrument. Students could selectively place themselves in phases according to these descriptions. Correlating this self-selection with test scores may lend itself to a statement of concurrent validity and provide credibility for how the test scores are interpreted.

3. It would be interesting and helpful to have students describe their helping experience either verbally or in writing. By establishing an objective way to describe these experiences (direct, nondirect, indirect, etc.), it would be possible to categorize these responses. If the test instrument were then administered to the subjects and the phase scores compared to the level of involvement, this may also lend itself to a statement of concurrent validity. This combines a qualitative and quantitative approach to establish concurrent validity of the test instrument.

Research of this nature could also help to confirm the interpretation of test scores. It would be necessary to discuss the results with students, faculty, and student

service administrators in order to verify the accuracy of this interpretation.

4. Other interesting questions appeared as a result of this study that deserve attention. For instance, it was inconclusive if the differences between CSU and UNC were caused by age, student status or a combination of these two variables. Student development theory might suggest that age and student status have moderating effects on questions of this nature (Chickering, 1969; Perry, 1968) which may have implications for the developmental features of the instrument. With larger and more equal sample sizes for age and student status, research of this nature is possible.

Internal Reliability Recommendations for Future Research

Further ideas for research for establishing internal reliability include the following:

1. The phases all correlated with each other which prevented a clear statement of validity and reliability. It was acknowledged as a limitation of the study that items would be placed in phases according to theory and the literature review. These phases may or may not be the same if items were statistically placed in phases by a procedure such as factor analysis. Although the phases would not correlate with each other, the interpretation of phase scores may change with factor analysis because of this artificial strengthening of the test instrument.

2. Related to the first recommendation, it is possible from the coefficients produced when correlating an item to its respective phase score to determine the relative contribution each item makes to the total phase score. As a result of this information, items could be deleted or revised and other items could be added to strengthen the test instrument.

The above suggestions have the potential to increase the internal reliability of the test instrument. Deleting those items that demonstrated a weak correlation with the total phase score would immediately influece coefficient alpha and increase internal reliability without another administration of the test. Revising or adding test items could also strengthen internal reliability, however, this approach would require a second administration and item analysis.

3. There are other types of reliability that can be researched such as test-retest. Tests of this nature could also add to the statement of reliability for the test instrument.

Implications for Student Services

For many years now, student service administrators have attempted to legitimize the contribution that student services can make to the educational mission of the institution. Since the 1960s, this connection has been advanced under the auspices of student development theory. Today

this developmental connection is more important than ever before, especially given the current environment of legislators, accrediting agencies and constituents demanding an efficient and effective use of financial and human resources in higher education.

Outcomes assessment is one method that has been suggested for student service administrators to demonstrate the contribution student services can make to the educational mission (Hanson, 1982). This infers research in order to identify theories and models that give meaning to the term student development. It also infers techniques of measurement and assessment that can demonstrate growth and change. This process of research and evaluation is necessary in order to "make the student affairs professional more equal partners in the educational enterprise" (Garland, 1985). Yet it is this link that is often missing from our appeal to justify student development efforts in educational terms.

This study has proposed research and an instrument that can be used to identify different ways in which students experience and understand what it is to be a responsible citizen. As such, the developmental potential of service-learning and the attempt to objectively define responsible citizenship remain largely undefined. Combining this research with the developmental assumptions and desired outcomes is reserved for future research.

The changing student demographics provide an opportunity for higher education to influence development of civic values and responsibility. Consider, for example, the recent trends reported by the American Council on Education. A survey of college students indicated that nearly two out of three incoming freshmen have been involved in volunteer work during the previous year (Astin, 1991). This trend is different from the narcissistic behaviors demonstrated by students in the 1980s. Certainly these experiences vary in quality and scope, and the ability to identify how students experience and understand what it is to be a responsible citizen fosters the evolution of programs and services that address these needs both inside and outside of the classroom.

Ultimately, the ability to identify activities of challenge and support that integrate classroom learning will also help to legitimize student services as making more than a peripheral contribution to the educational mission of the institution. As a result, the concept of student development can become a real and meaningful position from which to facilitate our partnership role as educators in the university community.

APPENDIX A

CSU IRB

COLORADO STATE UNIVERSITY

Human Research Committee

PROJECT APPROVAL FORM

LAST NAME OF PI	
McKELFRESH	
FILE NO.	DATE SUBMITTED
92-040H	3/[illegible]/92
ENTERED TO RECORD	
COORDINATOR [signature]	
DATE 4/2/92	

Project Title: Construction of an instrument to assess the service learning model: Establishing concurrent validity and internal reliability

Principal Investigator: Dave McKelfresh

Co-Investigator: Christopher A. Payne

Department: Housing/Residence Life

Funding Agency: N/A

Funding Agency Deadline Date: N/A

Date of Project Initiation: 4/92

The above project was examined by the Human Research Committee on 4/2/92 (Date) with the following recommendation:

☐ Project approved with no conditions.

☐ Project approved with the condition that an approved consent form must be used.

☒ Project conditionally approved if the following conditions are met:

1. The approved consent form must be used
2. The approval from University of Northern Colorado's IRB must be submitted.

[signature]

Chairman
Human Research Committee

4/2/92

Date

APPENDIX B

UNC IRB

Memorandum

TO: Nancy Scott, CSPA

FROM: William A. Barnard, Chair
UNC Institutional Review Board

DATE: 3-30-92

RE: Research Proposal Titled: Construction of an instrument to assess the service learning model: Establishing concurrent validity and internal reliability

Submitted by: Christopher Payne

The above referenced prospectus has been reviewed for compliance with HHS guidelines for ethical principles in human subjects research. The decision of the Institutional Review Board is that the project is:

__X__ exempt from further review.

_____ approved as proposed.

IT IS THE ADVISOR'S RESPONSIBILITY TO NOTIFY THE STUDENT OF THIS STATUS.

William A. Barnard

Approval Signature

APPENDIX C

PERMISSION TO USE SLM

Willamette
UNIVERSITY

March 2, 1992

Christopher A. Payne
2897 Greenland Drive #308
Loveland, CO 80538

Dear Christopher:

This letter acknowledges and approves your request to utilize the Service Learning Model as you prepare your dissertation. I am pleased that you are searching for ways to test the model for validity. Please let me know if I can be of assistance in any way. Best wishes and good luck as you do your work.

Sincerely,

Cecilia Delve Scheuermann
Co-Editor
Community Service as Values Education

THE OFFICE OF STUDENT ACTIVITIES AND UNIVERSITY CENTER
900 STATE STREET, SALEM, OREGON 97301 (503) 370-6463

APPENDIX D

PERMISSION TO REPRODUCE FIGURE 1

UNIVERSITY OF NORTHERN COLORADO

[illegible]

February 19, 1992

Jossey-Bass Publishers, Inc.
Ms. Alice Morrow
350 Sansome Street
San Francisco, CA 94104

Dear Ms. Morrow:

This letter serves to request permission to reproduce a Figure out of one of the publications published by Jossey-Bass, Inc.

I am currently a doctoral student at the University of Northern Colorado and the purpose of my dissertation proposal is to construct a test instrument to investigate the existence of phases as proposed by the Service Learning Model. The Service Learning Model was features in a recent issue of New Directions for Student Services, no. 50, 1990. Specifically, I wish to reproduce Figure 1 on page 37 of the following publication to help the reader visualize the similarities between the Experiential Learning Model and the Service Learning Model:

> Delve C., Mintz S., & Stewart G. (1990). Community service as values education. New Directions for Student Services, no. 50. San Francisco: Jossey-Bass, Inc.

I have included a copy of the reproduction as it currently appears in my proposal. If you have any questions or concerns about the study, I encourage you to contact me or my research advisor: Dr. Nancy Scott, Vice President for Student Affairs, Carter Hall 3005, Greeley, CO 80639, (303) 351-2303.

I would appreciate a letter from you stating that you have received and approved my request to reproduce this Figure for my dissertation proposal. I will include this letter with the "back matter" of my dissertation. I have enclosed a return-addressed, postage-paid envelope for your convenience. Please send this letter to my attention:

Christopher A. Payne
2897 Greenland Drive #308
Loveland, CO 80538
(303) 667-8430

Thank you for your time and please contact me if I can answer any questions.

Sincerely,

Christopher A. Payne
Graduate Assistant-Cultural Diversity
(303) 351-2424

February 21, 1992

Permission is hereby granted on behalf of Jossey-Bass Inc., Publishers, for your use of the above-cited material in the manner you have described. Further permission will be required if you eventually publish your dissertation.

Christopher R. Putney, Permissions Assistant, Jossey-Bass Inc.

APPENDIX E

PERMISSION TO REPRODUCE THE LEARNING-STYLE INVENTORY

MCBER & COMPANY

May 29, 1992

Christopher Payne
2897 Greenland Drive
Apartment 308
Loveland, CO 80538

Dear Mr. Payne:

You have our permission with this letter to copy the Kolb Learning Style Inventory to accomodate the margin requirements of your thesis paper. You may make only enough copies for the number of booklets you are preparing.

We require a copyright notation to accompany the material as follows:

Also, would it be possible to forward us a copy of the results of your study for our records?

Sincerely,

Katy Hubchen
Manager
Training Resources Group

APPENDIX F

APPROVAL FROM THE ASSOCIATE REGISTRAR AT UNC

TO ACCESS NAMES OF STUDENTS AT UNC

March 11, 1992

To: Jeff Bunker
Associate Registrar

From: Christopher A. Payne
Doctoral Student in CSPA
351-2424 or 667-8430 (Loveland)

RE: Approval for Random Sample of UNC Students

Please consider this request to obtain the names and on campus addresses of one hundred and fifty (150) UNC students currently residing in the UNC Residence Halls. This request is in conjunction with my dissertation proposal, a research project which is in partial fulfillment of the requirements of the doctoral program at the University of Northern Colorado. The research is scheduled for April, 1992.

My dissertation proposal has recently been approved by my Dissertation Committee. The research involves constructing a test instrument to investigate a model of student development that combines classroom learning and community service. In order to complete the research, I will need to solicit the participation of students enrolled at the University of Northern Colorado. I have identified students living in the UNC Residence Halls as my sample.

I am requesting approval for Diane Suhr, UNC Computer Center Programmer, to provide a random sample of 150 students living in the UNC Residence Halls in the spring of 1992. I am requesting that Diane provide a list of these students including name and on-campus address. I am also requesting mailing labels for these students in order to facilitate the distribution process.

The test packets will be distributed and collected by Resident Assistants. Students are not requested to identify themselves, and all data will be presented in group form thereby further ensuring that data can not be traced back to an individual. After the analysis is complete, all test packets will be destroyed.

Thank you for considering this request, and please contact me if you have any questions or concerns.

APPROVAL FOR RESEARCH:

Dr. Nancy Scott
Advisor and Research Chair

March 11 1992
Date

Jeff Bunker
Associate Registrar

3/12/92
Date

APPENDIX G

COPY OF THE DEMOGRAPHIC PROFILE

DEMOGRAPHIC PROFILE

This demographic information is requested in order to provide a profile of the subjects in the study. Your responses will be reported in group form, and therefore your confidentiality will be maintained.

Please respond to each of the following questions about yourself:

1. Age (check one):
   - ___ 18-19
   - ___ 20-21
   - ___ 22-23
   - ___ 24-25
   - ___ Over 25

2. Student status (check one):
   - ___ Freshman
   - ___ Sophomore
   - ___ Junior
   - ___ Senior
   - ___ Other

3. Sex:
   - ___ Male
   - ___ Female

4. Enrollment status this term (Spring, 1992):
   - ___ 9 credits or less
   - ___ 10 credits or more

5. Ethnic Origin (check one):
   - ___ Black, not of Hispanic origin
   - ___ Hispanic
   - ___ Asian/Pacific Islander
   - ___ Native American Indian
   - ___ Caucasian/White, not of Hispanic Origin
   - ___ I do not wish to provide this information

Please respond to the following questions related to helping others. All questions refer to your involvement in helping activities over the prior academic year (from September, 1991 to April, 1992). When responding to these questions, please use the helping activity that required the most of your time as a reference.

6. Using the helping activity that required the most of your time as a reference, estimate the number of hours per week you spent helping others over the course of the prior year (check one):
   - ___ None
   - ___ One hour/week
   - ___ Two hours/week
   - ___ Three hours/week
   - ___ More than three hours/week

7. Using the helping activity that required the most of your time as a reference, estimate the number of times you had contact with those you helped over the course of the prior year. (For example, if you volunteered at a local soup kitchen once every month, you would have eight (8) contacts over the course of the year). Check one:
   - ___ None
   - ___ 1-8 contacts
   - ___ 9-16 contacts
   - ___ 17 or more contacts

8. Using the helping activity that required the most of your time as a reference, indicate the nature of the contact you had when helping others over the course of the prior year (check one):
   - ___ Direct contact: Physically present with those helped and face to face interaction.
   - ___ Non-direct contact: Physically present with those helped but no face to face interaction.
   - ___ Indirect contact: Physically distant from those helped and no face to face interaction.
   - ___ No contact/Does not apply

APPENDIX H

COPY OF THE TEST INSTRUMENT

SERVICE-LEARNING INVENTORY

This inventory is designed to identify feelings, actions and thoughts about how you experience and understand what it is to be a responsible citizen as a result of helping others. Helping others is defined as the tendency to help someone, either directly or indirectly, other than family members or close friends.

For the purpose of this study, please use your involvement in community service activities over the past year (September, 1991 to April, 1992) as a reference. If you have not been involved in community service activities, please use your involvement in house or residence hall activities over the past year as a reference.

Please darken the circle that best describes the degree to which you agree or disagree with the statement. The inventory will require about ten minutes to complete. Please respond to each statement. Do not skip any items.

SD=STRONGLY DISAGREE D=DISAGREE N=NEUTRAL A=AGREE SA=STRONGLY AGREE

		SD	D	N	A	SA
1.	I am comfortable helping others I do not know.....	O	O	O	O	O
2.	I am unsure how I can best help others.....	O	O	O	O	O
3.	I prefer direct (face to face) contact with those I help.....	O	O	O	O	O
4.	I participate in several different activities designed to help others.....	O	O	O	O	O
5.	I have identified issues in the community which have influenced my commitment to helping others.....	O	O	O	O	O
6.	I believe it is important to receive frequent feedback from staff or a supervisor regarding my helping efforts..	O	O	O	O	O
7.	I feel an inner sense of charity when helping others....	O	O	O	O	O
8.	I enjoy forming relationships with those I help.....	O	O	O	O	O
9.	There are many ways to help people overcome social issues and concerns (eg. homelessness, drug abuse, hunger, etc.).....	O	O	O	O	O
10.	Others depend on my help on a consistent basis (every day, week, etc.).....	O	O	O	O	O
11.	I am aware of different groups and/or individuals in the local community that need help.....	O	O	O	O	O

SERVICE-LEARNING INVENTORY

SD=STRONGLY DISAGREE D=DISAGREE N=NEUTRAL A=AGREE SA=STRONGLY AGREE

		SD	D	N	A	SA
12.	I prefer short-term (one-time) commitments when helping others	o	o	o	o	o
13.	I sometimes feel isolated because my friends don't share my commitment to helping others	o	o	o	o	o
14.	I help others because it makes me feel good	o	o	o	o	o
15.	I understand the needs of those I help	o	o	o	o	o
16.	Activities that involve helping others provide an opportunity for me to socialize with my friends	o	o	o	o	o
17.	I help others because I feel sorry for those less fortunate than me	o	o	o	o	o
18.	Most of my time helping others is spent with a specific issue or concern (eg. the homeless, drug abuse, hunger, environmental responsibility, etc.)	o	o	o	o	o
19.	I have a genuine desire to learn about the needs of those I help	o	o	o	o	o
20.	I enjoy teaching volunteers how to help others	o	o	o	o	o
21.	I have made career decisions based on my experience with helping others	o	o	o	o	o
22.	I enjoy organizing activities designed to help others	o	o	o	o	o
23.	I feel a sense of belonging when working with other volunteers	o	o	o	o	o
24.	I often help others I do not know	o	o	o	o	o
25.	I feel a lifelong commitment to helping others	o	o	o	o	o
26.	I prefer long-term (one semester or longer) commitments when helping others	o	o	o	o	o
27.	I help others because of the recognition I receive from my peers	o	o	o	o	o

SERVICE-LEARNING INVENTORY

SD=STRONGLY DISAGREE D=DISAGREE N=NEUTRAL A=AGREE SA=STRONGLY AGREE

		SD	D	N	A	SA
28.	I feel an inner sense of justice when helping others.....	o	o	o	o	o
29.	I help others in order to learn about myself.....	o	o	o	o	o
30.	I believe a group of volunteers can have a greater impact than a single individual in meeting the needs of others.....	o	o	o	o	o
31.	I enjoy frequent contacts (once or more a week) with those I help.....	o	o	o	o	o
32.	I find it difficult to limit my helping to just one activity or organization.....	o	o	o	o	o
33.	I help others only when I am asked.....	o	o	o	o	o
34.	I feel a commitment to other volunteers I work with.....	o	o	o	o	o
35.	Helping others will have a positive impact on my quality of life.....	o	o	o	o	o
36.	I am more comfortable helping others when a group of volunteers are involved.....	o	o	o	o	o
37.	Helping others has influenced the way I live my life....	o	o	o	o	o
38.	I sometimes get too "caught up" in the personal problems of those I help.....	o	o	o	o	o
39.	There is a right and a wrong way to help people overcome social issues and concerns (eg. homelessness, drug abuse, hunger, etc.).....	o	o	o	o	o
40.	I value the prestige associated with being a member of a group involved with helping activities.....	o	o	o	o	o
41.	I feel I have made a difference in the lives of those I have helped.....	o	o	o	o	o
42.	It is important for me to feel accepted by other volunteers I work with.....	o	o	o	o	o

SERVICE-LEARNING INVENTORY

SD=STRONGLY DISAGREE D=DISAGREE N=NEUTRAL A=AGREE SA=STRONGLY AGREE

		SD	D	N	A	SA
43.	Some of the people I help are victims of unfair laws or government regulations.....	O	O	O	O	O
44.	I belong to a group or organization that expects members to be involved with activities designed to help others.....	O	O	O	O	O
45.	I help others only when it is required (eg. class assignment, group expectation, etc.).....	O	O	O	O	O
46.	I often think about how my involvement will impact those I help.....	O	O	O	O	O
47.	I feel committed to helping others overcome social issues and concerns (eg. homelessness, drug abuse, hunger, etc.).....	O	O	O	O	O
48.	I have acted as an advocate for those I help (such as writing letters to public officials about policies affecting a certain group or agency, etc).....	O	O	O	O	O

PLEASE CHECK TO BE SURE ALL STATEMENTS HAVE BEEN ANSWERED.
THANK YOU.

APPENDIX I

COPY OF THE LEARNING-STYLE INVENTORY

Learning-Style Inventory: Instructions

The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life. Below are 12 sentences with 4 choices of endings. Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new. Perhaps in your job. Then, using the spaces provided, rank 4 for the ending that describes how you learn best, down to 1 for the ending that seems least like the way you would learn. Be sure to rank all the endings for each sentence unit. Please do not make ties.

Example of completed sentence set:

1. When I learn	4 am happy	___ am fast	2 am logical	3 am careful
	___ like to deal with my feelings	___ like to watch and listen	___ like to think about ideas	___ like to do doing things
2. I learn best when	___ trust my hunches and feelings.	___ listen and watch carefully	___ rely on logical thinking.	___ want head to get things done.
3. When I am learning	___ have strong feelings and reactions	___ am quiet and reserved	___ tend to reason things out.	___ am responsible about things.
4. I learn by	___ feeling.	___ watching.	___ thinking.	___ doing.
5. When I learn	___ am open to new experiences	___ look at all sides of issues	___ like to analyze things, break them down and then learn.	___ like to try things out.
6. When I am learning	___ I am an intuitive person.	___ I am an observing person.	___ I am a logical person.	___ I am an active person.
7. I learn best from	___ personal relationships	___ observation	___ abstract theories	___ a chance to try out and practice
8. When I learn	___ I feel personally involved in things.	___ I take my time before acting.	___ I like ideas and theories.	___ I like to see results from my work.
9. I learn best when	___ I rely on my feelings	___ I rely on my observations	___ I rely on my ideas	___ I can try things out for myself
10. When I am learning	___ I am an accepting person.	___ I am a responsible person.	___ I am a rational person.	___ I am a responsible person.
11. When I learn	___ I get involved	___ I like to observe	___ I evaluate things	___ I like to be active
12. I learn best when	___ I am receptive and open minded.	___ I am careful.	___ I analyze ideas.	___ I am practical.

LSI

LEARNING-STYLE INVENTORY

McBER & COMPANY

Name: _____

Position: _____

Organization: _____

Date: _____

Inventory

McBer & Company
Training Resources Group
137 Newbury Street
Boston, Massachusetts 02116
(617) 437-7080

APPENDIX J

LETTER OF SUPPORT FROM VICTORIA KELLER

Colorado State University

Student Community Services
Lory Student Center
Fort Collins, Colorado 80523
(303) 491-6362

February 10, 1992

To Whom It May Concern::

As Director of the Office of Community Services at Colorado State University, I have given my approval to Christopher A. Payne to involve students who participate in community service programs coordinated by our office. I have read the proposal and after discussing the procedures and expectations with him, I have no reservations about our participation.

Please contact me if I can provide any additional support to this authorization request.

Sincerely,

Victoria Keller
Director, Office of Community Services

APPENDIX K

CSU CONSENT FORM

SUBJECT CONSENT FORM FOR PARTICIPATION OF HUMAN SUBJECTS IN RESEARCH
COLORADO STATE UNIVERSITY

Students at Colorado State University with an interest in community service have been selected to participate in a study to investigate the validity and reliability of a new paper and pencil test. The new test (The Service-Learning Inventory) is designed to identify feelings, actions and thoughts about how students experience and understand what it is to be a responsible citizen as a result of helping others. If you agree to participate in this study, you will be asked to complete two paper and pencil tests and a demographic profile. The two tests and demographic profile will take between 15-20 minutes to complete.

The results of your participation will be strictly confidential. No names will be maintained. A number appears in the upper right hand corner of each test and demographic profile to allow matching to occur in the event the test packet becomes separated. Your responses will be reported in group form, and therefore further assures confidentiality. This research project is to fulfill partial requirements for the Degree of Doctor of Philosophy.

AUTHORIZATION:

I, _____ (print name) CONSENT TO SERVE AS A SUBJECT IN THE RESEARCH INVESTIGATION ENTITLED:

Construction of an instrument to assess the Service Learning Model:
Establishing concurrent validity and internal reliability.

THE NATURE AND GENERAL PURPOSE OF THE EXPERIMENTAL PROCEDURES AND RISKS HAVE BEEN MADE KNOWN TO ME BY:

Christopher A. Payne, Department of Professional Psychology, CSPA
University of Northern Colorado

He is authorized to proceed on the understanding that I may terminate my service as a subject in this research at any time. I understand that all precautions have been taken to assure my confidentiality. The nature of the information requested by the Learning-Styles Inventory, Service-Learning Inventory and demographic profile does not pose any legal, financial, social or personal risks to the subjects. All test packets will be shredded upon analysis.

I understand that it is not possible to identify all potential risks in an experimental procedure, but I believe that reasonable safeguards have been taken to minimize both the known and the potential, but unknown, risks.

If a subject is injured in the course of the research investigation and he/she contends that Colorado State University or an employee thereof is at fault for the injury, the subject must file a claim within 180 days of the date of injury with the State Attorney General and the State Board of Agriculture. The University's legal and financial responsibility, if any, for such injuries is controlled by state law. Your claim will be referenced to the Risk Management Liaison Office for review, and you should direct your inquiries to that office (303/491-5257). The University cannot otherwise compensate subjects for their injuries, and subjects must depend on their own health and disability insurance for compensation for injuries sustained in the course of the research investigations which are not the fault of CSU or its employees.

_____ _____
Participant Signature Date

APPENDIX L

SUBJECT INFORMATION SHEET FOR CSU

COLORADO STATE UNIVERSITY
SUBJECT INFORMATION SHEET

PROJECT TITLE: Construction of an instrument to assess the Service Learning Model: Establishing concurrent validity and internal reliability.

PRINCIPAL INVESTIGATOR: Dr. Dave McKelfresh, Director of Housing, Colorado State University

CO-INVESTIGATOR: Christopher A. Payne, Doctoral Student, University of Northern Colorado Division of Professional Psychology, College Student Personnel Administration

CONTACT PERSON FOR QUESTIONS/PROBLEMS: Dr. William A. Bamard, Chair, UNC Internal Review Board (303) 351-2508

OBJECTIVES/PURPOSE OF THE RESEARCH: A paper and pencil test has been constructed to assess the Service Learning Model. The objective of this research is to establish concurrent validity by correlating this instrument with another criterion test (The Learning-Styles Inventory). Internal reliability will also be investigated as a result of this study.

PROCEDURES TO BE USED: Subjects will be requested to complete the paper and pencil tests and demographic profile. Total time to complete this request is estimated to be between 15-20 minutes. Subjects have access to the final results of this study by contacting Christopher A. Payne, Dean of Students Office, Carter Hall 3005, University of Northern Colorado, Greeley, CO 80639.

RISKS: The nature of the information provided by subjects on the paper and pencil tests and demographic profile does not pose any legal, financial, social or personal risks to the subjects. All information is confidential and all test packets will be shredded after final analysis.

ASSURANCE OF CONFIDENTIALITY: Subjects will not be asked to identify themselves. All tests and the demographic profile will be numbered so that matching can occur if the tests become separated. Responses will be presented as a group in the Results Section of the dissertation, thereby further assuring confidentiality.

I AGREE THAT THE SUBJECT HAS THE RIGHT TO TERMINATE PARTICIPATION IN THIS RESEARCH PROJECT AT ANY TIME.

Christopher A. Payne
Co-Investigator

Date

PLEASE KEEP THIS INFORMATION SHEET FOR YOUR FUTURE REFERENCE

APPENDIX M

UNC CONSENT FORM

SUBJECT CONSENT FORM FOR PARTICIPATION OF HUMAN SUBJECTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Students residing in the residence halls at the University of Northern Colorado have been randomly selected to participate in a study to investigate the validity and reliability of a new paper and pencil test. The new test (The Service-Learning Inventory) is designed to identify feelings, actions and thoughts about how students experience and understand what it is to be a responsible citizen as a result of helping others. If you agree to participate in this study, you will be asked to complete two paper and pencil tests and a demographic profile. The two tests and demographic profile will take between 15-20 minutes to complete.

All precautions have been taken to assure your confidentiality. The nature of the information requested by the Learning-Styles Inventory, the Service-Learning Inventory and demographic profile does not pose any legal, financial, social or personal risks to the subjects.

The results of your participation will be strictly confidential. No names will be maintained. A number appears in the upper right hand corner of each test and demographic profile to allow matching to occur in the event the test packet becomes separated. Your responses will be reported in group form, and therefore further assures your confidentiality. All test packets will be shredded upon analysis.

AUTHORIZATION

I have read the above and understand the nature of the study and agree to participate. I understand that by agreeing to participate in this study I have not waived any legal or human rights. I also understand that I have the RIGHT TO REFUSE TO PARTICIPATE and that MY RIGHT TO WITHDRAW FROM PARTICIPATION AT ANY TIME during the study WILL BE RESPECTED with no coercion or prejudice.

If I have any questions for my selection for this study or how I was treated, I will contact: Dr. William A. Barnard, Chair of the Internal Review Board, Department of Psychology, University of Northern Colorado, Greeley, CO 80639 (Telephone: 303/351-2508).

_____ _____

Participant Signature Date

_____ _____

Research Assistant Date

APPENDIX N

LETTER TO RESIDENT DIRECTORS

DEPARTMENT OF RESIDENCE LIFE
CARTER HALL ROOM 2007
MEMORANDUM

TO: Hall Directors

FROM: Andy

DATE: April 12, 1992

RE: Christopher A. Payne's Dissertation Research

Christopher A. Payne is conducting research on how students experience and understand what it is to be a responsible citizen as a result of involvement in community service activities. This information will be useful for future programming considerations in Residence Life.

Attached is a letter and test packets that will be distributed to a random sample of students from your hall. Also there are attached instructions to RAs outlining distribution and collection procedures. Please encourage your RAs to get the students to return the test packets as quickly as possible but in no case later than 12:00 noon on Friday, April 17, 1992.

AB/dbs
Attachment

APPENDIX O

LETTER TO RESIDENT ASSISTANTS

DEPARTMENT OF RESIDENCE LIFE
CARTER HALL ROOM 2007
MEMORANDUM

TO: Resident Assistants

FROM: Andy

DATE: April 11, 1992

RE: Christopher A. Payne's Community Service Research

Christopher A. Payne is conducting research on community service and classroom learning for his doctoral dissertation. This information will be useful for future programming considerations in Residence Life.

The attached envelopes contain a test packet including a Service-Learning Inventory, Learning-Styles Inventory, and a demographic profile. Since this is a random sample, it is very important that we have as many test packets returned as possible.

Please follow this procedure:

1. Personally distribute the test packets to the participants on your house.

2. Ask them to return the test packets to you as soon as possible but in no case later than 12:00 noon Friday, April 17, 1992.

3. After the test packets are returned to you, please verify that the student has signed the consent form and completed all of the material in the packet.

4. After the test packets are returned to you, please deliver them to Dee Schriner in my office in Carter Hall.

Thank you for your help on this matter. If you have any questions, please call me or Dee at 2721.

AB/dbs
Attachment

APPENDIX P

COVER LETTER TO UNC RESIDENTS

UNIVERSITY OF NORTHERN COLORADO

[illegible]

April 12, 1992

Dear Student:

You have been randomly selected to participate in a survey pertaining to how students experience and understand what it entails to be a responsible citizen. This information will be useful for future programming considerations in Residence Life.

Please complete the following:

1) Sign the consent form and return it with the test packet.

2) Complete the Learning-Style Inventory, Service-Learning Inventory and demographic profile. After you have finished, please check your work to be sure all questions have been answered. Do not skip an items.

Please return the test packet and consent form to your Resident Assistant as soon as possible, but in no case later than 12:00 noon on Friday, April 17, 1992.

I thank you in advance for your help in this matter. You will be hearing about the results through staff and student government.

Sincerely,

Christopher A. Payne

APPENDIX Q

FOLLOW-UP LETTER TO UNC STUDENTS

UNIVERSITY OF NORTHERN COLORADO

[illegible]
[illegible]
[illegible]

April 19, 1992

Dear Student:

Recently your RA provided you a test packet pertaining to community service research.

Thank you for your participation in this study. The results will be useful for future programming considerations in Residence Life.

Since this is a random sample, it is important that as many packets as possible are returned. If you have not already done so, would you please complete and return the test packet to your RA as soon as possible. Thank you.

Sincerely,

Christopher A. Payne

LIST OF REFERENCES

A Nation at Risk: Another view. (1990). In J. Kendall & Associates (Eds.), Combining service and learning: Vol. 1. A resource book for community and public service (pp. 114-115). Raleigh, NC: National Society for Internships and Experiential Education.

Abdennur, A. (1987). The conflict resolution syndrome: Volunteerism, violence and beyond. Ottawa: University of Ottawa Press.

Abeles, E. (1969). The student and the university: A background book on the campus revolt. New York: Parent's Magazine Press.

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.

Altbach, P. G., & Berdahl, R. O. (1981). Higher education in American society. Buffalo, NY: Prometheus Books.

American Council on Education. (1989). The student personnel point of view, 1949. In Points of View. Washington, DC: National Association of Student Personnel Administrators. (Originally published 1949).

Anastasi, A. (1988). Psychological testing (4th ed.). New York: Macmillan Publishing Co., Inc.

Astin, A. W. (1977). Four critical years: Effects of college on beliefs, attitudes, and knowledge. San Francisco: Jossey-Bass, Inc.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, 25(4), 297-308.

Astin, A. W. (1985). Achieving educational excellence. San Francisco: Jossey-Bass, Inc.

Astin, A. W. (1991, January). This year's college freshmen: Attitudes and characteristics. The Chronicle of Higher Education, pp A30-31.

Baird, L. (1985). Do grades and tests predict adult accomplishment? Research in Higher Education, 23(1), 3-85.

Baxter Magolda, M. B. (1987). The affective dimension of learning: Faculty-student relationships that enhance intellectual development. The College Student Journal, 21(1), 46-58.

Blocker, D. (1978). Campus learning environments and the ecology of student development. In J. Banning (Ed.), Campus ecology (pp. 17-23). Cincinnati, OH: National Association of Student Personnel Administrators.

Brabeck, M. M. (1983). Critical thinking skills and reflective judgement development: Redefining the aims of higher education. Journal of Applied Developmental Psychology, 4(1), 23-34.

Borg, W. R., & Gall, M. D. (1989). Educational research: An introduction (5th ed.). New York: Longman Inc.

Burnard, P. (1988). Experiential learning: Some theoretical considerations. International Journal of Lifelong Education, 7(2), 127-133.

Chickering, A. W. (1969). Education and identity. San Francisco: Jossey-Bass, Inc.

Christenson, R. A. (1982, Fall). The legal definition of 'volunteer'. Voluntary Action Leadership, pp. 17-18.

Cohen, S., & Sovet, C. A. (1989). Human service education, experiential learning and student development. College Student Journal, 23(2), 117-122.

Conrad, D., & Hedin, D. (1990). Learning from service: Experience is the best teacher - or is it? In J. C. Kendall & Associates (Eds.), Combining service and learning: Vol I. A resource book for community and public service (pp. 87-98). Raleigh, NC: National Society for Internships and Experiential Education.

Creamer, D. G. (1990). Progress toward intentional student development. In D. G. Creamer & Associates (Eds.), College student development: Theory and practice for the 1990s, No. 49 (pp. 3-23). Alexandria, VA: American College Personnel Association.

Crocker, L., & Algina, J. (1986). Introduction to classical and modern test theory. New York: Holt, Rinehart and Winston.

Crosson, P. (1983). Public service in higher education: Practices and priorities. ASHE-ERIC Higher Education Research Report No. 7. Washington, DC: Association for the Study of Higher Education.

Davis, J., Steen, T., & Rubin, S. (1987). A study of the internship experience. Journal of Experiential Education, 10(2), 22-24.

Davison, M. L., King, P. M., Kitchener, K. S., & Parker, C. A. (1980). The stage sequence concept in cognition and social development. Developmental Psychology, 16(2), 121-131.

Delve, C. I., Mintz, S. D., & Stewart, G. M. (1990a). Promoting values development through community service: A design. In C. I. Delve, S. D. Mintz, & G. M. Stewart (Eds.), New directions for student services: Community service as values education, No. 50 (pp. 7-29). San Francisco: Jossey-Bass, Inc.

Delve, C. I., Mintz, S. D., & Stewart, G. M. (1990b). Editors notes. In C. I. Delve, S. D. Mintz, & G. M. Stewart (Eds.), New directions for student services: Community service as values education, No. 50 (pp. 1-5). San Francisco: Jossey-Bass, Inc.

Dewey, J. (1916). Democracy and education: An introduction to the philosophy of education. New York: The Macmillan Company.

Dewey, J. (1938). Experience and education. New York: The Macmillan Company.

Erikson, E. (1968). Identity: Youth and crisis. New York: W. W. Norton.

Erwin, T. D., & Marcus-Mendoza, S. T. (1988). Motivation and student's participation in leadership and group activities. Journal of College Student Personnel, 24(4), 356-361.

Feldman, K. A., & Newcomb, T. M. (1969). The impact of college on students. San Francisco: Jossey-Bass, Inc.

Fitch, R. T. (1987). Characteristics and motivations of college students volunteering for community service. Journal of College Student Personnel, 28(5), 424-431.

Fitch, R. T. (1991). The interpersonal values of students at differing levels of extracurricular involvement. Journal of College Student Personnel, 32(1), 24-30.

Freedman, M. B. (1965). Personality growth in the college years. College Board Review, 56, 25-32.

Freedman, R. D., & Stumpf, S. A. (1978). What can one learn from the Learning Style Inventory? Academy of Measurement Journal, 21(2), 275-282.

Garland, P. H. (1985). Serving more than students: A critical need for college student personnel services. ASHE-ERIC Higher Education Report No. 7. Washington, DC: Association for the Study of Higher Education.

Gelineau, V. A., & Kantor, D. (1964). Pro-social commitment among college students. Journal of Social Issues, 20(4), 112-130.

Giles, D., Honnet, E. P., & Migliore, S. (1991). Research agenda for combining service and learning in the 1990s. Raleigh, NC: National Society for Internships and Experiential Education.

Gilligan, C. (1982). In a different voice: Psychological theory and women's development. Cambridge, MA: Harvard University Press.

Ginter, E. J., Brown, S., Scalise, J., & Ripley, W. (1989). Perceptual learning styles: Their link to academic performance, sex, age, and academic standing. Perceptual and Motor Skills, 68(3, Pt. 2), 1091-1094.

Glass, G. V., & Hopkins, K. D. (1984). Statistical methods in education and psychology (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Guilford, J. P. (1954). Psychometric methods (2nd ed.). New York: McGraw-Hill.

Gregg, N. (1989). Review of the LSI. In J. C. Conoley & J. J. Kramer (Eds.), The tenth mental measurements yearbook (pp. 441-442). Lincoln, NE: University of Nebraska Press.

Hanson, G. R. (1982). Critical issues in the assessment of student development. In G. R. Hanson (Ed.), New directions for student services: Measuring student development, no. 20 (pp. 47-63). San Francsico: Jossey-Bass, Inc.

Hayden, R. R., & Brown, M. S. (1985). Learning styles and correlates. Psychological Reports, 56(1), 243-246.

Hedin, D., & Conrad, D. (1990). The impact of experiential education on youth development. In J. C. Kendall and Associates (Eds.), Combining service and learning: Vol. I. A resource book for community and public service (pp. 119-129). Raleigh, NC: National Society for Internships and Experiential Education.

Helmstadter, G. C. (1964). Principles of psychological measurement. New York: Meredith Publishing Company.

Hobfoll, S. E. (1980). Personal characteristics of the college volunteer. American Journal of Community Psychology, 8(4), 503-505.

Hodgkinson, H. L. (1985, June). All one system: Demographics of education - kindergarten through graduate school. Available from the Institute for Educational Leadership, Inc., Washington, DC.

Illich, I. (1990). To hell with good intentions. In J. Kendall & Associates (Eds.), Combining service and learning: Vol I. A resource book for community and public service (pp. 314-320). Raleigh, NC: National Society for Internships and Experiential Education.

Johnson, B. (1946). Campus versus classroom: A candid appraisal of the American college. New York: Ives Washburn, Inc.

Katz, N. (1986). Construct validity of Kolb's Learning Style Inventory, using factor analysis and Guttman's smallest space analysis. Perceptual and Motor Skills, 63(1), 1323-1326.

Keeton, M. T., & Tate, P. J. (1978). Editors' notes: The boom in experiential learning. In M. T. Keeton & P. J. Tate (Eds.), New directions for experiential learning: Learning by experience - what, why, how, No. 1 (pp. 1-8). San Francisco: Jossey-Bass, Inc.

Kelly, H. J. (1974). The effect of the helping experience upon the self-concept of the helper. Dissertation Abstracts International, 35, 190-191A. (University microfilms No 74-14, 964)

Kendall, J. C. (1990). Combining service and learning: An introduction. In J. C. Kendall and Associates (Eds.), Combining service and learning: Vol I. A resource book for community and public service (pp. 1-33). Raleigh, NC: National Society for Internships and Experiential Education.

Khalili, H., & Hood, A. B. (1983). A longitudinal study of change in conceptual level in college. Journal of College Student Personnel, 24(5), 389-394.

King, P. M. (1978). William Perry's theory of intellectual and ethical development. In C. Widick, C. A. Parker & L. Knefelkamp (Eds.), New directions for student services: Applying new developmental findings, No. 4 (pp. 35-51). San Francisco: Jossey-Bass, Inc.

Kitchener, K., & King, P. (1981). Reflective judgement: Concepts of justification and their relationship to age and education. Journal of Applied Developmental Psychology, 2(2), 89-116.

Kline, P. (1986). A handbook of test construction: Introduction to psychometric design. New York: Methuen & Co. Ltd.

Kohlberg, L. (1969). Stage and sequence: The cognitive developmental approach to socialization theory and research. New York: Rand McNally.

Kohlberg, L. (1975). The cognitive-developmental approach to moral education. Phi Delta Kappan, 56, 670-677.

Kohlberg, L. (1984). The psychology of moral development: The nature and validity of moral stages. San Francisco: Harper & Row.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Kolb, D. A. (1985). Learning-Style Inventory: Revised manual. Boston: McBer & Company.

Learning-Style Inventory. (1985). Technical specifications. Boston: McBer and Company.

Leonard, E. A. (1956). Origins of personnel services in American higher education. Minneapolis: University of Minnesota Press.

Levinson, D. J. (1978). The seasons of a man's life. New York: Knopf.

Levison, L. (1990). Choose engagement over exposure. In J. C. Kendall and Associates (Eds.), Combining service and learning: Volume I. A resource book for community and public service (pp. 68-75). Raleigh, NC: National Society for Internships in Experiential Education.

Levy, T. (1986). The NCSS Public Issues Program: A teacher's guide. In Social Education, 50(6), 1-10.

Little, T. C. (1979). Intellectual passion. Synergist: National Center for Service-Learning, 8(1), 45-48.

Lipton, J. D., & Garza, R. T. (1978). A sociocultural analysis of volunteer work among Chicano and Anglo college students. Journal of College Student Personnel, 19(3), 268-274.

Luks, A. (1988, October). Helper's high. Psychology Today, pp. 39-42.

Luthi, J. R. (1980). Personal needs and objectives of volunteers. The Bulletin of the Association of College Unions-International, 6(1), 14-15.

McLaughlin, G., & Smart, J. (1987). Baccalaureate recipients: Developmental patterns in personal values. Journal of College Student Development, 28(2), 162-168.

McPherson, K., & Nebgen, M. K. (1991). Connections: Community service and school reform recommendations. Education and Urban Society, 23(3), 326-334.

Miller, T. K., & Winston, R. B., Jr. (1990). Assessing development from a psychosocial perspective. In D. G. Creamer and Associates (Eds.), College student development: Theory and practice for the 1990s. No. 49 (pp. 99-126). Alexandria, VA: American College Personnel Association.

Moore, L. V., & Upcraft, M. L. (1990). Theory in student affairs: Evolving perspectives. In L. V. Moore (Ed.), New directions for student services: Evolving theoretical perspectives on students, No. 51 (pp. 3-24). San Francisco: Jossey-Bass, Inc.

Newman, F. (1987). Students in public service: Honoring those who care. Change, 19(4), 19-27.

Newmann, F. M. (1990). Reflective citizen participation. In J. C. Kendall and Associates (Eds.), Combining service and learning: Volume I. A resource book for community and public service (pp. 76-84). Raleigh, NC: National Society for Internships and Experiential Education.

Nunnally, J. C. (1978). Psychometric theory. New York: McGraw-Hill Book Company.

Olafson, F. A. (1977). The school and society: Reflections on John Dewey's philosophy of education. In Cahn, S. M. (Ed.), New studies in the philosophy of John Dewey (pp. 172-203). Hanover, NH: University Press of New England.

Ory, J. C., & Braskamp, L. A. (1988). Involvement and growth of students in three academic programs. Research in Higher Education, 28(2), 116-129.

Pace, C. R. (1980). Assessing diversity among campus groups. In L. L. Baird, R. T. Harnett & Associates (Eds.), Understanding student and faculty life (pp. 90-112). San Francisco: Jossey-Bass, Inc.

Parker, M. D., & Newman, B. S. (1989). Volunteerism and social work educators: Findings from a national survey. Journal of Social Work Education, 25(3), 257-267.

Pascarella, E. T. (1985). Student's affective development within the college environment. Journal of Higher Education, 56(6), 640-663.

Pascarella, E. T. (1989). The development of critical thinking: Does college make a difference? Journal of College Student Personnel, 30(1), 19-26.

Pascarella, E. T., Ethington, C., & Smart, J. C. (1988). The influence of college on humanitarian/civic involvement values. Journal of Higher Education, 59(4), 412-437.

Perry, W. G., Jr. (1968). Intellectual and ethical development in the college years: A scheme. Cambridge: President and Fellows of Harvard College.

Piaget, J. (1985). The equilibration of cognitive structures: The central problem of intellectual development. Chicago: The University of Chicago Press.

Pinto, J. K., & Geiger, M. A. (1991). Changes in learning-style preferences: A prefatory report of longitudinal findings. Psychological Reports, 68(1), 195-201.

Polkosnik, M. C., & Winston, R. B., Jr. (1989). Relationships between students' intellectual and psychosocial development: An exploratory investigation. Journal of College Student Personnel, 30(1), 10-18.

Pyle, K. R. (1981). International cross-cultural service/learning: Impact on student development. Journal of College Student Personnel, 22,(6), 509-514.

Rajecki, D. W. (1990). Attitudes (2nd ed.). Sunderland, MA: Sinauer Associates, Inc.

Riesman, D. (1980). On higher education: The academic enterprise in an era of rising student consumerism. San Francisco: Jossey-Bass, Inc.

Rodgers, R. F. (1980). Theories underlying student development. In D. G. Creamer (Ed.), Student development in higher education: Theories, practices and future directions (pp. 10-86). Cincinatti, OH: America College Personnel Association.

Rosenthal, R. (1965). The volunteer subject. Human Relations, 18(4), 389-406.

Sanford, N. (1962). The American college: A psychological and social interpretation of the higher learning. New York: John Wiley & Sons, Inc.

Sanford, N. (1966). Self and society: Social change and individual development. New York: Atherton Press.

Sanford, N. (1967). Where colleges fail: A study of the student as a person. San Francisco: Jossey-Bass, Inc.

Schindler-Rainman, E., & Lippitt, R. (1975). The volunteer community: Creative use of human resources (2nd ed.). Fairfax, VA: NTL Learning Resources Corporation.

Schmidt, J. A. (1985). Older and wiser? A longitudinal study of the impact of college on intellectual development. Journal of College Student Personnel, 26(5), 388-394.

Schmidt, J., & Davison, M. (1981). Does college matter? Reflective judgement: How students tackle the tough questions. Moral Education Forum, 6(1), 2-14.

Schmidt, J., & Davison, M. (1983). Helping students think. Personnel and Guidance Journal, 61(9), 563-569.

Schmidt-Posner, J. (1989, March). The student experience of public service. Paper presented at the American Educational Research Association Annual Conference, San Francisco.

Schultz, S. K. (1990). Learning by heart: The role of action in civic education. In J. C. Kendall and Associates (Eds.), Combining service and learning: Volume I. A resource book for community and public service (pp. 210-24). Raleigh, NC: National Society for Internships and Experiential Education.

Serow, R. C. (1989). Community service, religious commitment and campus climate. Youth & Society, 21(1), 105-119.

Serow, R. C. (1990). Volunteering and values: An analysis of students' participation in community service. Journal of Research and Development in Education, 23(4), 198-203.

Serow, R. C., & Dreyden, J. I. (1990). Community service among college and university students: Individual and institutional relationships. Adolescence, 25(99), 553-566.

Shaver, P. R., & Scheibe, K. E. (1967). Transformation of social identity: A study of chronic mental patients and college volunteers in a summer camp setting. The Journal of Psychology, 66, 19-37.

Sims, R. R., Veres, J. G., III, Watson, P., & Buckner, K. E. (1986). The reliability and classification stability of the Learning Style Inventory. Educational and Psychological Measurement, 46(3), 753-760.

Slepitza, R. A. (1990). Service learning in the residence halls: A fertile ground for student development. In C. Delve, S. Mintz, & G. Stewart (Eds.), New directions for student services: Community service as values education, No. 50 (pp. 65-75). San Francisco: Jossey-Bass, Inc.

Smith, D. M., & Kolb, D. A. (1986). User's guide for the Learning-Style Inventory. Boston, MA: McBer and Company.

Sovilla, E. S. (1989/90). Experiential education: Learning by working. College Placement Council Annual: Vol. 1, 73-76.

Stanton, T. (1990). Liberal arts, experiential learning and public service: Necessary ingredients for socially responsible undergraduate education. In J. C. Kendall and Associates (Eds.), Combining service and learning: Vol I. A resource book for community and public service (pp. 175-189). Raleigh, NC: National Society for Internships and Experiential Education.

Stewart, G. M. (1990). Learning styles as a filter for developing service-learning interventions. In C. I. Delve, S. D. Mintz, & G. M. Stewart (Eds.), New directions for student services: Community service as values education, No. 50 (pp. 31-42). San Francisco: Jossey-Bass Inc.

Theus, K. T. (1988). Campus-based community service. Change, 20(5), 27-38.

Tomlinson-Keasey, C., & Eisert, D. C. (1978). Can doing promote thinking in the college classroom? Journal of College Student Personnel, 19(2), 99-105.

UNC Bulletin. (1990-1992). Mission and goals statement. Greeley, CO: UNC News and Publications.

Veres, J. G., III, Sims, R. R., & Shake, L. G. (1987). The reliability and classification stability of the Learning Style Inventory in corporate settings. Educational and Psychological Measurement, 47(4), 1127-1133.

Wagner, J. (1990). Beyond curricula: Helping students construct knowledge through teaching and research. In C. I. Delve, S. D. Mintz, & G. M. Stewart (Eds.), New directions for student service: Community service as values education, No. 50 (pp. 43-53). San Francisco: Jossey-Bass, Inc.

Welfel, E. R., & Davison, M. L. (1986). The development of reflective judgement during the college years: A 4-year longitudinal study. Journal of College Student Personnel, 27(3), 209-216.

Westman, A. S., & Kamoo, R. L. (1990). Relationship between using conceptual comprehension of academic material and thinking abstractly about global life issues. Psychological Reports, 66(2), 387-390.

White, R. (1981). Humanitarian concern. In A. Chickering & Associates (Eds.), The modern American college: Responding to the new realities of diverse students and a changing society (pp. 158-171). San Francisco: Jossey-Bass, Inc.

Widick, C., Parker, C. A., & Knefelkamp, L. (1978). Erik Erikson and psychosocial development. In C. Widick, C. A. Parker, & L. Knefelkamp (Eds.), New directions for student service: Applying new developmental findings, No. 4 (pp. 1-18). San Francisco: Jossey-Bass, Inc.

Williams, M. E., & Winston Jr., R. B. (1985). Participation in organized student activities and work: Differences in developmental task achievement of traditional aged college students. NASPA Journal, 22(3), 52-59.

Wilson M. (1976). The effective management of volunteer programs. Boulder, CO: Volunteer Management Associates.

Wilson, R. C., Woods, L., & Gaff, J. G. (1974). Social-psychological accessibility and faculty-student interaction beyond the classroom. Sociology of Education, 47(1), 74-92.

Winston, R. B., Jr., & Massaro, A. V. (1987). Extracurricular involvement inventory: An instrument for assessing intensity of student involvement. Journal of College Student Personnel, 28(2), 169-174.

VITA

NAME: Christopher A. Payne

BIRTHPLACE: Boise, Idaho

BIRTHDATE: December 20, 1956

EDUCATION:

Ph.D., 1992
College Student Personnel Administration
University of Northern Colorado
Greeley, CO

M.S., 1982
Education - Guidance and Counseling
University of Wisconsin-Platteville
Platteville, WI

B.S., 1980
Psychology
Colorado State University
Ft. Collins, CO

H. S. Diploma, 1975
Arvada High School
Arvada, CO

EXPERIENCE:

1991-1992 Graduate Assistant - Cultural Diversity
University of Northern Colorado
Greeley, CO

1989-1991 Graduate Assistant - Admissions
University of Northern Colorado
Greeley, CO

1982-1989 Marketing Officer
First National Bank in Loveland
Loveland, CO

1980-1982 Resident Director/Supervising Director
University of Wisconsin-Platteville
Platteville, WI

1978-1980 Student Assistant
Colorado State University
Ft. Collins, CO