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A STUDY TO COMPARE
CHICKERING AND REISSER'S (1993) VECTOR 6,
DEVELOPING PURPOSE AND FRANKL'S (1959)
PURPOSE IN LIFE

presented by

WILLIAM ROBERT MOLASSO

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A STUDY TO COMPARE CHICKERING AND REISSER'S (1993) VECTOR 6, DEVELOPING PURPOSE AND FRANKL'S (1959) PURPOSE IN LIFE

By

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ABSTRACT

A STUDY TO COMPARE CHICKERING AND REISSER'S (1993) VECTOR 6, DEVELOPING PURPOSE AND FRANKL'S (1959) PURPOSE IN LIFE

By

William Robert Molasso

Chickering (1969), an educational researcher in socio-developmental processes, created one of the first and most widely known and studied college student development theories. Chickering (1969) believed that the critical task for college students was the establishment of their identity, and proposed seven vectors of development through which students must progress. Chickering and Reisser (1993) later revised the seven vectors to take into account more recent research and a broader demographic base. Extensive research has been conducted on the seven vectors generally and on several individual vectors (Greeley & Tinsley, 1988; Itzkowitz & Petrie, 1986; Jordan-Cox, 1987; Polkosnik & Winston, 1989; Straub & Rodgers, 1986). Application of the vectors in student affairs practice is widespread. The area of Chickering and Reisser's (1993) work that has received the least extensive exploration is Vector Six, Developing Purpose. The field of clinical psychology provides another approach to measuring purpose in life. Victor Frankl (1959, 1979, 1984, 1997) made a substantial contribution toward developing a theoretical foundation for the study of purpose in life, and has been considered the preeminent scholar on this subject in the field of psychology (Zika and Chamberlain, 1992). Frankl's and Chickering and

Reisser's theoretical writing on developing purpose share a number of common viewpoints. However, no empirical research has been published that compares the instrument designed to assess Chickering and Reisser's Vector Six, Developing Purpose, and Frankl's purpose in life.

This study of 354 college sophomores explored the relationship between Vector 6, Developing Purpose, as measured by the Student Developmental Task and Lifestyle Assessment—Purpose Form (SDTLA-PUR) (Winston, Miller, & Cooper, 1999) and Frankl's purpose in life, as measured by the Purpose in Life Test (PIL) (Crumbaugh & Maholick, 1964). Pearson-product correlational procedures discovered a relatively weak relationship in how the two instruments measured purpose in life. Independent *t* tests determined that significant differences existed between study participants and national normative data for the two tests, with the study participants experiencing a lower sense of purpose than expected. ANOVA procedures discovered that only gender had a statistically significant impact on PIL scores. Other demographic variables did not show to influence PIL and SDTLA-PUR scores. Finally, regression analysis identified a number of environmental factors that influence how a student experiences a sense of purpose, as measured by the PIL and the SDTLA-PUR.

DEDICATION

The work involved in this study, as well as this dissertation, is dedicated to Dr. Elizabeth Broughton.

Liz recruited me into the field of Student Affairs many years ago and later into the faculty role, and has been with me throughout my professional life.

Her guidance and assistance over the last decade has helped make me the professional I am today.

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I would like to thank Dr. Marilyn Amey, Professor, Higher, Adult and Lifelong Education (and my committee chair) at Michigan State University. Dr. Amey has guided, pushed, and prodded me throughout my doctoral work, and I greatly appreciate her patience and insight over those years.

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CHAPTER I

INTRODUCTION

For decades, researchers in higher education have empirically explored how to enhance programs and services to assist the college student in learning and personal development. The best instructional methods for the classroom, administrative efficiency, appropriate intervention techniques for struggling students, the impact of particular activities and programs on various student outcomes, and other issues have all been explored through a variety of research approaches. An area of study that has gained increasing attention over the last 30 years is the developmental processes of college students. Erikson (1968), Havinghurst (1972), Kohlberg (1971), Perry (1970), and others have all made major contributions to the understanding of how and in what ways students develop while in college, guiding the work of student affairs practitioners who must make decisions about policy and practice on a daily basis.

Chickering (1969), an educational researcher in socio-developmental processes, created one of the first and most widely known and studied college student development theories. Prior to Chickering's work, there were few studies related to education beyond adolescence (Reisser, 1995). Chickering believed that in an increasingly complex society, an important psychosocial developmental period had emerged, comprising the college years from age 18 to the mid-20s. "Before *Education and Identity*, little had been published about development beyond adolescence, except for writings by Sanford (1961), Erikson (1959) and Marcia (1965 and 1966)" (Reisser, p. 506). Chickering characterized the college student "as an individual in a distinct psychosocial phase defined by the

emergence of certain inner needs and abilities which interact with the demands or press of the college milieu" (Edman, 1988, p. 4).

Chickering (1969) believed that the critical task for college students was the establishment of their identity, and proposed seven vectors of development through which students must progress. Chickering and Reisser (1993) later revised the seven vectors to take into account more recent research and a broader demographic base, hoping to provide "useful tools to a new generation of practitioners who want to help students become 'excellent all-rounders'" (p. 41). Chickering and Reisser's seven vectors define "major highways for journeying toward individuation–the discovery and refinement of one's unique way of being" (p. 35).

Extensive research has been conducted on the seven vectors generally and on several individual vectors (Greeley & Tinsley, 1988; Itzkowitz & Petrie, 1986; Jordan-Cox, 1987; Polkosnik & Winston, 1989; Straub & Rodgers, 1986). Application of the vectors in student affairs practice is widespread. The area of Chickering and Reisser's (1993) work that has received the least extensive exploration is Vector Six, Developing Purpose.

Concerning Vector Six, Chickering and Reisser (1993) stated that students determine their place in society. They reasoned that "a plan becomes a map for moving from the current situation to a more desirable one, for altering status quo, for composing a life" (p. 210). They concluded that developing purpose requires establishing a plan of action that integrates vocational plans, avocational personal interests, and interpersonal and family commitments. To measure the development of purpose, Winston, Miller, and Cooper (1999) developed the Student Developmental Task and Lifestyle Assessment–Purpose.

The Student Developmental Task and Lifestyle Assessment (SDTLA) is the latest iteration of a counseling tool developed by the University of Georgia (Winston et al., 1999). The theoretical work of Chickering (1969) and Chickering and Reisser (1993) "was a major influence in guiding the creation and evolution of the SDTLA" (Winston et al., p. 4). The general SDTLA is designed to assess three of Chickering's vectors: Developing Mature Interpersonal Relationships, Developing Autonomy, and Developing Purpose, as well as several additional subtasks and scales. Different forms of the instrument are available to measure all three vectors, as well as individual forms to measure single vectors. The SDTLA–PUR is designed specifically to assess the vector of developing purpose (Winston et al.).

Until now, little research has been available in the literature assessing how the STDLA–PUR measures development of purpose, and no research compares this instrument with other tools for measuring purpose in life. Comparing the SDTLA–PUR with another conception of developing purpose may assist in ensuring that the SDTLA–PUR truly measures a student's sense of purpose, and will lend greater understanding to this vector of student development.

The field of clinical psychology provides another approach to measuring purpose in life. Victor Frankl (1959, 1979, 1984, 1997) made a substantial contribution toward developing a theoretical foundation for the study of purpose in life, and has been considered the preeminent scholar on this subject in the field of psychology (Zika & Chamberlain, 1992). Frankl first explored and defined purpose in life in the clinical literature in the 1960s, and is generally considered the father of *Logotherapy*, a form of psychotherapy conceived of as therapy through meaning (Pytell, 2001). Frankl believed that every individual has an

innate desire to develop a purpose in life, which he termed *will to meaning*. He explained, "with this we designate man's striving to fulfill as much meaning in his existence as possible, and to realize as much value in his life as possible" (Frankl, 1959, p. 161). Those who failed to experience a sense of purpose in life, he believed, were in an *existential vacuum* or *existentially frustrated*, "that is, inner emptiness, the feeling of having lost the examining of existence and the content of life" (Frankl, 1959, p. 162). Frankl held that individuals who experienced existential frustration compensated for their lack of purpose through very risky behaviors.

Frankl believed an individual discovered meaning in several ways. The first way, which he felt was quite obvious, was "by creating a work or doing a deed" (Frankl, 1984, p. 115). Purpose could stem from an individual's work or vocation. Frankl also believed that meaning could be derived from experiencing "nature and culture" or "by experiencing another human being in his very uniqueness—by loving him" (p. 115). Finally, Frankl believed individuals found purpose even "when confronted with a hopeless situation" (p. 116)—that what matters is how a person transforms that personal tragedy into achievement.

Based on Frankl's (1953) theory of purpose in life, Crumbaugh and Maholick (1964) developed the Purpose in Life Test (PIL) to measure the degree to which a person experiences a sense of purpose in life. The PIL is the instrument "most commonly used in clinical psychology [and] has been translated into at least six languages" (Moran, 2001, p. 271). The PIL has been used widely in clinical and outpatient contexts. Research in the clinical setting has established a thread of interesting relationships between the PIL and behavioral issues that student affairs professionals deal with on a daily basis.

Frankl's (1959, 1979, 1984, 1997) and Chickering and Reisser's (1993) theoretical writing on developing purpose share a number of common viewpoints. Both theories contain similar definitions of "purpose," and consider that purpose is derived from vocation or work; cultural, artistic, or recreational interests; and interpersonal relationships or love. Both theories hold that developing a sense of purpose is a critical task for healthy development. They differ on when developing purpose occurs, and on the placement or centrality of purpose to the total individual.

Thus the two theories appear to have more similarities than differences. However, no empirical research has been published that compares the instrument designed to assess Chickering and Reisser's (1993) Vector Six, Developing Purpose, and Frankl's (1959, 1979, 1984, 1997) purpose in life.

Purpose of the Study and Research Questions

The purpose of this study was to explore Chickering and Reisser's (1993) Vector 6, Developing Purpose, as measured by the SDTLA–PUR, and Frankl's (1959) purpose in life, as measured by the PIL. Chickering and Reisser's vectors of student development are commonly used foundations for student affairs practice across the country. As the preeminent psychological scholar on the subject of purpose, Frankl provided a useful theoretical concept which to compare how the SDTLA–PUR measured Vector 6, Developing Purpose. This study examined three research questions:

1. Are there differences in the way the PIL and SDTLA–PUR measure a student's sense of purpose in life?
2. What demographic variables impact a student's sense of purpose in life, as measured by the SDTLA–PUR and the PIL?

3. What involvement or environmental factors impact a student's sense of purpose in life, as measured by the SDTLA–PUR and the PIL?

Plan of the Study

This study used Web-based data collection techniques to gather the necessary data to answer the three research questions. The massive expansion of the Internet and Web-based technologies have allowed this means of research to spread rapidly in educational settings, where participants have near-universal access. The nature of the college campus made this means of data collection particularly appealing, and sampling equivalent to the traditional paper-and-pencil surveys could occur (Arnau, Thompson, & Cook, 2001).

A random sample of 1,000 sophomore students, enrolled full-time (12 or more credit hours) at a large Midwestern university was stratified equally by four residential settings: residence halls, residential colleges, emerging apartment communities, and general off-campus. The instrumentation included the SDTLA–PUR, the PIL, demographic questions, and three series of questions on environmental influence factors: Time Spent, Involvement, and Activities.

Data analysis for this study was performed with the Statistical Package for the Social Sciences (SPSS), Macintosh Version 11, using the appropriate statistical methods as outlined by Pallant (2001). To analyze the data appropriately in order to answer the three research questions, several different statistical methods were needed, including basic descriptive statistics, ANOVA procedures, *t* tests, correlations, and multiple regression procedures. Following analysis and discussing the data, recommendations for future study were made.

Rationale for the Study

Having a sense of purpose or meaning in life has been reported to be a strong and consistent predictor of psychological well-being (Chamberlain, 1987). In their review of studies on purpose, Zika and Chamberlain (1992) reported that "meaning in life is consistently related to positive mental health outcomes, while meaninglessness is associated with pathological outcomes" (p. 135).

In the most recent *Freshmen Survey* in the *Chronicle of Higher Education*, 34% of the freshmen surveyed indicated that the phrase "Searching for Meaning/ Purpose in Life" described them to a great extent (Freshmen Survey, 2004). In 2001, Moran called for student affairs professionals to give greater attention to the value of purpose in life for the students with whom they work. She proposed four ways in which purpose in life affects the college student: (1) values-orientation of the student; (2) connectedness with the campus community; (3) degree of risk-taking behaviors; and (4) overall well-being and satisfaction. These propositions have important implications for student affairs professionals.

Before greater attention can be diverted to establishing programs and policies that positively influence the development of a sense of purpose for the college student, additional empirical research must be conducted to give student affairs professionals the requisite tools to make informed decisions. This study provided foundational information related to the SDTLA–PUR and the PIL, as well as investigating how demographic variables and other factors may influence a student's sense of purpose.

Operational Definitions

Purpose in Life. The sense of having a purpose in life, or the construct that is measured by the PIL. Frankl's (1959, 1979, 1984, 1997) scholarly work

in the last half of the 20th century is considered the standard characterization of purpose in life.

Developing Purpose. Those constructs embedded in Chickering and Reisser's (1993) Vector Six.

PIL. The instrument developed by Crumbaugh and Maholick (1964) that purports to measure Frankl's (1959, 1979, 1984, 1997) construct of Purpose in Life.

SDTLA–PUR. The instrument developed by Winston et al. (1999) that purports to measure Chickering and Reisser's (1993) Vector Six, Developing Purpose.

Will to Meaning. The primary motivator of the human experience to strive toward fulfilling as much meaning or purpose in his/her life as possible (Frankl, 1959, 1984).

Meaning in Life. That which gives each individual his/her unique purpose for existence (Frankl, 1959, 1984).

Meaning of Meaning. Denotes the philosophical debate on the meta-meaning of life. For the purpose of this project, meta-meaning was acknowledged to be outside human comprehension, beyond the basic understanding that there is some order to the universe, and the individual has some place in that order (Allport, 1955).

Existential Vacuum or Frustration. Experience of a lack of having a sense of purpose in life (Frankl, 1959, 1984).

Age. The student's age at the time of the study, as typed in by the student.

Gender. The student's identification of gender/sex, as entered in by the student.

Race/Ethnicity. The student's identification of his/her race/ethnicity from the choices identified by the institution of study. These include: African-American, Asian/Pacific Islander, Caucasian, Hispanic/Latino, International, Native American, or Other. Students could choose more than one racial/ethnic category.

Sexual Orientation. The student's identification of his/her sexual orientation, as typed in by the student.

Class. The student's year in school, defined as freshman, sophomore, junior or senior.

Socioeconomic Status. The proxy of receiving a Pell Grant during the academic semester under study served as a measure of socioeconomic status.

Guidelines Used in Study

To report the findings of this study, several manuals and texts on style, statistical tests and interpretation, and the creation of tables and figures were used.

The *Publication Manual of the American Psychological Association, Fifth Edition* (2001) specified the writing, style, and references cited in this study.

Nicol and Pexman's (1999) outstanding text, *Presenting Your Findings: A Practical Guide for Creating Tables*, provided invaluable assistance in the reporting of data and creation of statistical tables. As recommended, the "play it safe" tables were used for each statistical procedure to report the outcomes of this study.

Finally, Pallant's (2001) *SPSS Survival Manual* guided the selection, implementation, and interpretation of statistical procedures needed in the study.

Organization of the Study

This study is presented in five chapters. Chapter I provides a brief

overview of the conceptual foundation of the study, as well as the rationale, purpose, research questions, operational definitions, guidelines used, and organization of the study.

Chapter II reviews the related literature. This review contains a brief overview of the purpose of education and college student development in general; a more extensive review of Chickering and Reisser's (1993) vectors of college student development, with particular focus on Vector Six, Developing Purpose; a general review of literature as it relates to purpose in life broadly conceived; a more extensive review of Frankl's (1959, 1979, 1984, 1997) theory of purpose in life; a comparison of Chickering and Reisser's Vector Six with Frankl's purpose in life; and a review of the most popular measurement instrument for each theory, the Student Developmental Task and Lifestyle Assessment–Purpose Form (Winston et al., 1999) and the Purpose in Life Test (Crumbaugh & Maholick, 1964). The literature review also covers the development of the research design, including Web-based data collection methods, the residential status of the student, and identifying environmental factors affecting development.

Chapter III describes the detailed methodology of the study. It covers the purpose and research questions of the study, the population, the sample selection, and instrumentation. Description of the data collection Web site includes the software package selected, issues of cheaters and repeaters, and the design of the Web-site itself. After a summary of the pilot test and lessons learned, the design of primary data collection is outlined, including contacts and response rates, technological back-up, confidentiality, participant burden, sensitivity of issues, and costs of the study.

Chapter IV describes the results of the data analysis, including a description of the coding procedures and case removal decisions made; description of correlation analysis of the SDTLA–PUR and the PIL; comparison of study scores on the two dependent variables with national norms for the instrument through *t* tests; sample demographics and their relationship to the two dependent variables through ANOVA procedures; and regression analysis of the impact of three series of factors (Time Spent, Involvement, and Activities) on both the SDTLA–PUR and the PIL; and a summary of the major findings in the study.

Chapter V includes a review of the research questions in the study, discussion of the major findings and their implications, limitations of the study, and recommendations for future research related to purpose in life.

CHAPTER II

LITERATURE REVIEW

This review of the research available in the literature explored Chickering and Reisser's (1993) model of the seven vectors of college student development, paying particular attention to Vector Six, Developing Purpose. Viktor Frankl's (1959, 1979, 1984, 1997) work in Logotherapy, or therapy through meaning, provided the conceptual framework of comparison to Vector Six. Frankl's theory of purpose in life was reviewed and compared to Vector Six. The Student Developmental Task and Lifestyle Assessment–Purpose test (Winston et al., 1999) was designed to measure Chickering and Reisser's Vector Six, Developing Purpose; the Purpose in Life Test (Crumbaugh & Maholick, 1964) was designed to measure Frankl's view of his construct. These instruments were also reviewed.

Literature was reviewed as it relates to the methodological implications of the study. Astin's (1993) input–environment–outcomes (I–E–O) model and others were reviewed to assist in identifying environmental and involvement factors that may influence development, including involvement in services and activities, and influence of residential setting on development. Important considerations for study design were also reviewed, including the appropriateness of Web-based data collection on college campuses and recommendations to improve Web-based methodologies.

College Student Development

"Two fundamental presuppositions of education are that people can change and that educators and educational environments can affect that change" (Winston et al., 1999, p. 3). These fundamental assumptions are apparent

throughout the theoretical literature in education (Astin, 1993; Erikson, 1968; Havinghurst, 1972; Kohlberg, 1969; Perry, 1970). Although some researchers explain the educational experience as merely a gain in academic skills and intellectual knowledge, an additional important aspect of college student development is in the areas of interpersonal skills and knowledge about one's own attitudes, beliefs, and ways of being (Astin, 1993). Development of the *total student*, meaning personal development in addition to intellectual skills, has become increasingly regarded as a critical aspect of the mission of educational institutions. Winston et al. (1981) observed:

> The body of research concerning the personal development of college students has grown rapidly in recent years. Students have been observed, interviewed, tested, and variously poked and prodded in efforts to discover what is in their hearts and minds as they advance in college. (p. 429)

Chickering and Havinghurst (1981) felt that the purpose of institutions of higher education "should be to encourage and enable intentional developmental change in students" (p. 2). Erikson (1968), Havinghurst (1972), Kohlberg (1969), Perry (1970), and others have all made major contributions to the understanding of how and in what ways students develop while in college, guiding the work of student affairs practitioners as they make policy and practice decisions on a daily basis. Noted as the creator of one of the first comprehensive models of student development, Chickering (1969) proposed a series of paths or vectors through which students progress developmentally during college. Chickering's work was the first attempt to synthesize available research into a framework. It has gained notoriety and influenced more research and practice than other theoretical

models on college student development (Pascarella & Terenzini, 1991).

Seven Vectors of Development

Chickering (1969) believed that in an increasingly complex society, an important psychosocial developmental period had emerged during the college years from age 18 to the mid-20s. He created one of the most widely known and studied college student development theories. "Before *Education and Identity*, little had been published about development beyond adolescence, except for writings by Sanford (1961), Erikson (1959) and Marcia (1965 and 1966)" (Reisser, 1995, p. 506). Chickering's research on the seven vectors of college student development proved to be a watershed event in the development of psychosocial theories for college students. "Psychosocial theories view development as a series of developmental tasks or stages, including qualitative changes in thinking, feeling, behaving, valuing, and relating to others and to oneself" (Chickering & Reisser, 1993, p. 2). Chickering characterized the college student "as an individual in a distinct psychosocial phase defined by the emergence of certain inner needs and abilities which interact with the demands or press of the college milieu" (Edman, 1988, p. 4).

Chickering (1969) believed that the critical task specifically for college students was the establishment of their identity, and proposed seven vectors of development through which students must progress. Chickering and Reisser (1993) later revised the seven vectors to take into account more recent research and a broader demographic base, hoping to provide "useful tools to a new generation of practitioners who want to help students become 'excellent all-rounders'" (p. 41).

Chickering and Reisser's (1993) seven vectors define "major highways for

journeying toward individuation—the discovery and refinement of one's unique way of being" (p. 35). Unlike many student development theories (Kohlberg, 1969; Perry, 1970), Chickering and Reisser's theory is not linear. Students do not travel down exactly the same highway and make the same stops en route. The seven vectors outline broad constellations of development, through each of which the student must progress. Because it is not a strict linear stage model, individual students traverse down their own highways in different ways, with different turns, speeds, and modes of transportation, but they "eventually all will move down these major routes" (p. 35). The seven vectors simply indicate a series of tasks through which the student must advance during the college years, in no specific order or sequence. It should be noted that "some tasks are more likely to be encountered early in the journey" (p. 37), and "each seems to have direction and magnitude—even though the direction may be expressed more appropriately by a spiral or by steps than by a straight line" (p. 8). There is also some overlap between vectors and their corresponding development trajectory.

Chickering and Reisser's (1993) seven vectors delineate the tasks necessary for the development of the college student's identity: Developing Competence; Managing Emotions; Moving Through Autonomy Toward Interdependence; Developing Mature Interpersonal Relationships; Establishing Identity; Developing Purpose; and Developing Integrity. Progression in each of the seven vectors is equally critical to total development.

Chickering and Reisser (1993) believed that it was critical for student affairs professionals to know and understand what student development looked like, and how to foster it. Their vectors of development have "attracted greater attention and inspired more research and administrative programming than other

psychosocial theories or models" (Pascarella & Terenzini, 1991). As a framework, the seven vectors "can give us the lenses to see these changes and help them along" (p. 43). In their review of relevant research, Pascarella and Terenzini concluded that the theory was frequently criticized in the literature because it lacked specificity for practical application. Many of the seven vectors have been empirically explored to establish that greater specificity and describe how to foster development along the particular trajectory studied (Greeley & Tinsley, 1988; Itzkowitz & Petrie, 1986; Jordan-Cox, 1987; Polkosnik & Winston, 1989; Straub & Rodgers, 1986). However, one vector of student development that has not received significant attention is Vector Six, Developing Purpose.

Vector 6: Developing Purpose

Concerning Vector 6, Developing Purpose, Chickering and Reisser (1993) believed that developing a map is a mechanism for closing the distance between who we are, and where we would like to be. Under Vector Six, students determine "a sense of our place in the larger whole" (p. 234). The researchers reasoned:

> [A] plan becomes a map for moving from the current situation to a more desirable one, for altering status quo, for composing a life. It becomes a servomechanism, a grid for measuring achievement, and a prod for mobilizing further effort to close the gap between the condition we are in and the target we want to reach. (p. 210)

Developing purpose requires establishing a plan of action that integrates vocational plans, avocational personal interests, and interpersonal and family commitments.

Vocation often implies paid employment, but Chickering and Reisser

(1993) believed it included paid or unpaid work, or both. Students' true vocation was determined "by discovering what we love to do, what energizes and fulfills us, and what uses our talents and challenges us to develop new ones, and what actualizes our potentials for excellence" (p. 212). We may work a paid position to pay the bills, but our vocation may be some other primary work, such as being an artist or musician. Alternatively, our vocation may be both our love and our source of income, such as teaching, practicing law, or medicine. Students who engaged in career counseling services available at their university, participated in internships and practica, and discussed their plans with professors were much more likely to have identified their direction for the future—both the next steps and the long term.

"[E]very choice to do one thing is a choice not to do nine others" (Chickering & Reisser, 1993, p. 225). Developing a sense of purpose also includes the stabilization of avocational personal interests and recreational pursuits. Drawing, poetry, sports, stamp collecting, political action and advocacy, and other activities and interests have to be weighed against one another, and long-term interests incorporated into the student's identity. The commitment of personal time and effort must be determined by expanding old interests or replacing those older interests with new ones.

"Considerations of life-style and family also enter the equation" (Chickering & Reisser, 1993, p. 229). Students who "face several forks in the road" (p. 229) have had to make choices about long-term partnerships, future geographic locations, and further education. "When friendships and the intimate exchanges that accompany them are valued and promoted, identity and purpose become clearer" (p. 396).

Developing a sense of purpose is not necessarily an absolute; the same purpose does not have to remain unchanged throughout the lifespan, nor does it need to be extremely specific. In developing a sense of purpose, students must "go beyond what is merely interesting and find an anchoring set of assumptions about what is true, principles that define what is good, and beliefs that provide meaning and give us a sense of our place in the larger whole" (Chickering & Reisser, 1993, p. 234). As a student explores and experiences new things, his/her purpose in life may change. Yet the student must develop that sense of purpose even though it may change in the future.

Purpose in Life

> Since the beginning of recorded history, people have always wondered about such questions as: What is the purpose of being here? Is there any ultimate meaning to human existence? What happens when someone dies? Why do bad things happen to good people? How can one live a meaningful, fulfilling life? (Wong, 1998, p. 111)

The struggle for this sense of purpose or meaning in life is a distinctly human characteristic (Fry, 1998). Literary pundits, self-help authors, religiously affiliated individuals, and others all have expressed a broad range of perspectives on purpose or meaning in life. These perspectives had their philosophical origins in Aristotle's belief that the highest of all human goods was the realization of a person's true potential. Other philosophers, such as Nietzsche and Tolstoy, attempted to further elucidate the meaning of life. Although the work of these philosophers created healthy debate on the meaning or purpose of life in their times, their schematics were often too far removed from daily life to be of

significant value. Defining an exact purpose in life for all humanity was like the horizon: no matter how far you traveled down the road, the horizon remained beyond reach.

Klemke (1981) believed there were three points of view for answering the question of the meaning of life: The questioning semantics answer; the theistic answer; and the nontheistic answer. Philosophers in the first group disputed the meaningfulness of asking the question at all. They focused on the semantics and cognitively attached connotation to the words of "meaning" or "purpose." They asserted that the questions were too ambiguous to answer, and therefore pointless to ask. The theistic perspective holds that meaning in life is focused on the existence of a supremely benevolent and all-powerful being. This god created the universe and created man in his image, endowing him with a preordained purpose in life. Klemke discovered that it was difficult to defend this position explicitly in the literature, but recognized that it was a strongly held conviction among religious believers. Those who asserted the nontheistic alternative ignored the existence of a supreme being, and believed that purpose in life had to be found within the natural known universe. This more humanistic perspective stresses that there cannot be a clear and singular meaning or purpose of life, beyond a basic acceptance that there is some meta-order in the universe and that everyone is a part of that meta-order in some way. Regardless of a person's orientation to the question of the meaning of life, both the nature of that meta-order and an individual's role within it appear to lie beyond human comprehension.

Although the determination of the meta-meaning of life may be beyond human ability, individuals must do their best to determine their place in the

Universe (Allport, 1955) and create a unique sense of purpose in life. Without this fundamental sense of purpose for the individual, behaviors are guided simply by impulse (Baumester, 1991). According to Baumester, a person developing a sense of purpose for his/her *own* life was well within his/her grasp, and that purpose provided direction. Many psychological theorists believed that the development of that sense of purpose is critical for a healthy way of life, as outlined below.

In creating more concrete theoretical paradigms than the existential thinking of philosophers previously discussed, many psychological and sociological theorists have identified having a sense of purpose in life as a fundamental aspect of overall healthy development. These theories leave the question of the meta-meaning of life aside, and articulate the position that each individual needs to discover his or her own particular sense of purpose.

In positing his psychological hierarchy of needs, Maslow (1970) differentiated between basic needs and macro needs in a hierarchal pattern of progression. Maslow theorized that fulfilling one's own potential through self-actualization is the pinnacle of human development. His semantics were different, but related well to Allport's (1955) conception of motivation. Allport's model differentiates between deficiency and growth motives of humans. These growth motives, similar to Maslow's achieving one's own potential, include long-range purpose and striving toward distant goals in the future. Other theories, such as Rogers' (1961) description of the fully functioning person, Jahoda's (1958) criteria for positive mental health, and Jung's (1933) process of individuation, also include a core component based on discovering purpose in one's life. All of these conceptions include several distinct characteristics of human development.

In each, however, a prominent theme of developing a sense of purpose was incorporated into the psychological and sociological account. Viktor Frankl, whose works were required reading in most undergraduate level psychology classes, took the significance of purpose in life one step further. Unlike the researchers cited above, Frankl (1959, 1979, 1984, 1997) believed developing a sense of purpose in life was *the* primary requisite of human development.

Conceptual Framework: Frankl's Purpose in Life

Frankl (1959, 1979, 1984, 1997) first explored and defined purpose in life in the clinical literature over 40 years ago, and is generally considered the father of Logotherapy. From the Greek word *logos* (translated as *meaning*), Logotherapy is a form of psychotherapy conceived of as therapy through meaning (Pytell, 2001). Frankl's initial ideas of meaning or purpose in life were developed prior to World War II. Those ideas were reinforced by his experiences as a prisoner in a concentration camp (Zika & Chamberlain, 1992), revealed in his acclaimed Holocaust testimony, *Man's Search for Meaning* (1959). Frankl's work offered a substantial contribution toward the development of a theoretical foundation for meaning in life and the loss of a sense of purpose. As one of the leading scholars on the issue of purpose in life, Frankl provided a valuable concept to compare to Chickering and Reisser's (1993) Vector Six, Developing Purpose.

Central to Frankl's (1984) Logotherapy was the belief that developing a sense of purpose is the primary objective of human existence (Fabry, 1998). The lack of meaning by itself was not necessarily pathology or disease, but Frankl believed that the distress caused by lack of a sense of purpose could quickly elevate to crisis. These two constructs, termed *will to meaning* and *existential*

vacuum or *frustration* were identified as core elements of Frankl's Western perspective on human motivation (Hutzell, 1987). Frankl (1984) metaphorically compared individuals to a pilot landing in the fog. In this metaphor, the glide path of the human plane is the individual's unique sense of purpose in life that guides his/her decision-making toward the future. Loss of this sense of purpose is comparable to a pilot losing contact with the control tower and being unable to land in the fog.

Frankl's Logotherapy established three basic tenets: freedom of will, will to meaning, and meaning in life. *Freedom of will* declared that individuals have the ability to assert their own decisions in the meta-order of the universe to create their own paths, within obvious limitations (Fabry, 1987). Although humans are not free from external stimuli that often create difficult environmental conditions, they are always free to choose their attitudes towards those circumstances. Maddi (1998) believed that our freedom of will allows us to recognize that as we experience our daily lives, we are constantly making decisions that affect our present and our future. It is the ability, content, and direction of these decisions that give human lives meaning. Individuals create meaning by the choices they are free to make (Frankl, 1984).

As previously articulated, the will to meaning is a primary and basic human motive and the second tenet of Logotherapy. Unlike his contemporaries, Frankl (1959, 1984) believed that the main goal in life was not to attain Adler's (1958) notion of power or Freud's (1938) focus on pleasure. He felt it was to find meaning and value in the life an individual leads. He explained will to meaning as, "with this we designate man's striving to fulfill as much meaning in his existence as possible, and to realize as much value in his life as possible"

(Frankl, 1959, p. 161). Having a purpose in life was not one of many factors (Frankl, 1992), but the central motivator of the human experience.

It is the interaction of a person's freedom of will and the will to meaning that enables humans to transcend external constraints in the here and now to discover *meaning in life*, the third tenet of Logotherapy. Meaning in life can be discovered right up until death and even in the worst of environmental or living conditions, but individuals must discover it for themselves. It is through this developed sense of purpose that the person discerns a reason for existence and gains the ability to survive the worst of conditions. Frankl (1984) believed man does not find meaning within a particular religious dogma, which clearly placed him in a more humanistic orientation towards the meaning of life when compared to others. However, he claimed that meaning could be secular or religious and could be present in religious, interpersonal, and creative contexts (Zeitchik, 2000). Frankl believed that an individual discovers meaning in several ways. The first, which he thought was quite obvious, is "by creating a work or doing a deed" (Frankl, p. 115). Purpose could stem from an individual's work or vocation. Frankl also believed that meaning could be derived from experiencing "nature and culture" or "by experiencing another human being in his very uniqueness—by loving him" (p. 115). Finally, Frankl believed we also find purpose even "when confronted with a hopeless situation" (p. 116). What matters is how we transform that personal tragedy into achievement.

Meaning or purpose in life pervades both the conscious and unconscious thoughts of all human beings at various points in time. Disagreeing with renowned psychologist Maslow (1970) and others, Frankl (1984) believed that a person's concern is to fulfill meaning and to realize value, not to actualize

themselves. An individual who achieved Maslow's true self-actualization in life would not have a further purpose in life, and would falter without this sense of direction. "One characteristic of human existence is its transcendence. That is to say, man transcends his environment toward the world (and toward a higher world); but more than this, he also transcends his being toward an ought"—not to what he/she is, but what he/she should or would like to be (Frankl, 1959, p. 159).

Frankl left the debate of the meta-meaning of life to the philosophers, and focused instead on the application of clinical interventions to assist those who did not have a sense of purpose to discover it for themselves in their current situation. This inner emptiness or void Frankl termed existential vacuum or existential frustration. In Frankl's (1959, 1979, 1984, 1997) use, existential referred to existence in the human mode, the meaning of existence, or the search for concrete meaning—his will to meaning. Boredom and distress were often indicative of existential vacuum or frustration. The individual could compensate for both vicariously by a will to power or money or the will to pleasure, manifested sexually or through other hedonistic behaviors. This state of existential frustration ensued when one failed to identify meaning in his/her life and an inner void or emptiness was experienced with regard to purposive living.

For Frankl (1959, 1979, 1984, 1997), a person who once felt a sense of purpose but has lost sight of it for some reason is no different from the person who never believed that his/her life had meaning or purpose in the first place. Neither experiences a sense of purpose, and both are in need of some kind of intervention to establish a purpose orientation (Zeitchik, 2000). Logotherapy was created to assist people in finding a sense of purpose, especially those who experience a stunted sense of purpose. Frankl's theory posits that people who

suffer from a lack of meaning in their lives need to be educated to be able to respond and commit to the values that can be actualized in a specific situation (Zeitchik, 2000). Through reality-based awareness and focus on future goals and responsibilities, an individual can be assisted toward achieving a sense of purpose in his/her life.

As a clinical psychologist, Frankl (1959, 1979, 1984, 1997) focused on the application of therapy through meaning in the clinical context. Four of Frankl's core theoretical beliefs are germane for the purpose of this study: (1) humans possess a fundamental primary motivation to strive to develop a sense of meaning or purpose in life, denoted as will to meaning; (2) we are only happy when we have developed that sense of purpose in life; (3) there are significant deleterious affects when we fail to develop a sense of purpose, or Frankl's concept of existential frustration; and (4) purpose emanates from work or deeds (vocation), nature and culture (avocational interests and recreation), love (interpersonal commitment), and our attitude toward suffering.

Vector 6 and Frankl's Purpose in Life

In reviewing both Frankl's (1959, 1979, 1984, 1997) and Chickering and Reisser's (1993) work on purpose in life, it is clear that both theories have several themes in common, but also a few differences. In common, both theories contain similar definitions of "purpose"; both posit that developing purpose fundamentally centers on the same three constructs; and in both theories, developing a sense of purpose is a necessary and critical task for healthy development. The theories differ on when the development of purpose occurs and on the placement or centrality of purpose to the total individual.

Developing purpose, in both theories, means establishing a plan that

defines your goals, and then making necessary adjustments to your current situation in order to achieve them. Chickering and Reisser (1993) described this process as a highway; Frankl (1984) used the metaphor of a pilot in the fog. The road map or air control tower corresponds to a person's sense of purpose in life that allows the individual to progress in a forward thinking, intentional way. Both authors agreed that religion may play a part of that sense of purpose, but that purpose stemmed from three distinct areas.

Chickering and Reisser (1993) believed that vocational plans, avocational and recreational interests, and the commitment to interpersonal relationships and lifestyles formed the foundation for a student's progress through Vector Six. Frankl (1984) believed that one's work, nature or cultural interests, and love were the foundation of purpose. Although the semantics differed, the authors both identified three extremely similar elements of purpose.

An additional commonality between the two theories relates to what happens if one does not develop a sense of purpose. Both Frankl (1959, 1979, 1984, 1997) and Chickering and Reisser (1993) articulated the concept that developing purpose is a critical task if the individual is to be happy and healthy. Both theories have in common the notion that not progressing through the vector, that is, not developing that sense of purpose, would lead to deleterious outcomes. As a clinical psychologist, Frankl's focus was more clearly centered on these deleterious outcomes than was Chickering and Reisser's. Because of Frankl's clinical work to minimize these kinds of behaviors, a greater amount of research using Frankl's construct is available in the literature.

A primary difference between the two theories is related to the centrality of purpose to the individual. Frankl (1959, 1979, 1984, 1997), who developed a

line of psychological counseling based on developing purpose, placed purpose in life as the single central focus of a person's development, with other dimensions stemming from it. Chickering and Reisser's (1993) placement of developing purpose as one vector out of seven indicated they felt it was a piece of the larger development, but not necessarily central to all others.

When a person should develop a sense of purpose was also a major difference between the two authors. Frankl (1959, 1979, 1984, 1997) believed that age was irrelevant to the development of purpose—that regardless of a person's place in life, he/she could develop a sense of purpose. Chickering and Reisser (1993) believed that students must progress through the earlier vectors of their schema, and that developing purpose generally begins only in the later college years and continues afterwards. The two theories differ on the centrality of purpose to the individual, and when the development of purpose occurs, but their definitions and descriptions of the elements of purpose and the consequences of a stunted sense of purpose are very similar. However, no empirical research has been published that compares the instruments designed to assess Chickering and Reisser's (1993) Vector Six, Developing Purpose, and Frankl's (1959, 1979, 1984, 1997) purpose in life.

Measurement of Vector 6 and Purpose in Life

Chickering and Reisser's (1993) and Frankl's (1959, 1979, 1984, 1997) conceptions of developing a sense of purpose in life have been shown to be remarkably similar. Because the theories themselves have such commonality, it was expected that the instruments designed to assess them would be similar in design and quantification of the constructs. Based on Chickering and Reisser's (1993) model of student development, the Student Development Task and

Lifestyle Assessment (SDTLA) was designed to measure three of the vectors, including Vector Six, Developing Purpose (Winston et al., 1999). The Purpose in Life Test (PIL) was developed to measure Frankl's view of developing purpose (Crumbaugh & Maholick, 1964).

Student Development Task and Lifestyle Assessment. The SDTLA is the latest iteration of a counseling tool developed by the University of Georgia to measure students' psychosocial development (Winston et al., 1999). Earlier versions of the instrument included the Student Development Task Inventory (SDTI) (Prince, Miller, & Winston, 1974), the SDTI-2 (Winston, Miller, & Prince, 1979), and the Student Developmental Task and Lifestyle Inventory (SDTLI) (Winston, Miller, & Prince, 1987). Although designed primarily as a counseling tool, the SDTLA and its earlier versions have been used widely in student affairs practice to assist students in their growth and development (Evans, Forney, & Guido-DiBrito, 1998).

The theoretical work of Chickering (1969) and Chickering and Reisser (1993) "was a major influence in guiding the creation and evolution of the SDTLA" (Winston et al., 1999, p. 4). The SDTLA is comprised of a series of developmental tasks and subtasks. Developmental tasks are "an interrelated set of behaviors and attitudes that the culture specifies should be exhibited at approximately the same time" (Winston et al., p. 10). The SDTLA was designed to assess three of Chickering and Reisser's developmental tasks or vectors: Developing Purpose, Developing Autonomy, and Developing Mature Interpersonal Relationships. There are four versions of the instrument—one to measure all three developmental tasks and one each to measure the three tasks independently. For comparison with Frankl's Purpose in Life (1959, 1979, 1984,

1997), the SDTLA-PUR test was most appropriate.

The SDTLA-PUR, designed to assess the overall Developing Purpose Vector or developmental task, does so by assessing four subtasks: Educational Involvement, Career Planning, Lifestyle Planning, and Cultural Participation. Students with high achievement on the SDTLA-PUR are expected to be active learners with well-established educational goals, to have well developed career plans and expectations, to have made future plans that take into account family and interpersonal concerns, and to exhibit a wide range of cultural interests and activities (Winston et al., 1999). The instrument also includes a Response Bias Scale, a series of questions designed to determine if the student is trying to portray himself/herself in "an unrealistically favorable way" (p. 12). Students who scored from 4 to 6 on the Response Bias Scale were recommended to be removed from the data pool. The instrument consists of 57 items that assess developing purpose and its corresponding four subtasks, using both multiple choice and true–false formats. The instrument authors assigned individual weights ranging from one to five to item responses for each question, indicating an answer's relative value when compared to other responses. Average responses for sophomores by gender on the SDTLA-PUR tasks and subtasks are included in Table 1. Because only sophomores are included in the sample of the study discussed in Chapter III, other class level scores have not been included in this table.

Test–retest reliability of the developmental task and subtasks clustered around .80, which indicated that the instrument had adequate stability over time. To determine internal consistency, Cronbach alphas were determined from a sample of 1,822 students enrolled in 32 colleges and universities during 1994-

Table 1

Normative Scores for the SDTLA-PUR for Sophomores, as a Function of Gender

	M		*SD*	
Task	Men	Women	Men	Women
Developing Purpose	3.03	3.13	0.67	0.66

Men (n=143); Women (n=222).

Note: From Preliminary Technical Manual for the Student Developmental Task and Lifestyle Assessment (Winston, Miller, & Cooper, 1999).

1996. Alpha coefficients ranged from .76 to .81 for the SDTLA-PUR form and its subtasks, indicating a high degree of internal consistency (Winston et al., 1999).

Of the tasks and subtasks assessed by the SDTLA, Developing Purpose and its four subtasks have had little significant empirical exploration. In their landmark *How College Affects Students,* Pascarella and Terenzini (1991) reviewed over 20 years of research related to college student development. Although the authors cited a number of studies related to the various iterations of the SDTLA, all of the research they reviewed explored tasks and subtasks other than Developing Purpose. Their synthesis made two brief references to purpose, but did not review any research or data. However, a few other studies have explored the SDTLA as it relates to Developing Purpose and its four subtasks.

A series of validation studies were conducted to determine the correlation between the SDTLA-PUR subtasks with other, more established instruments in higher education. Pace (1983) compared scales from the College Student Experiences instrument with the SDTLA-PUR tasks and subtasks, and found correlations for the Career Exploration with the developmental task of Developing Purpose (r = .53) and the subtasks of Career Planning (r = .60), Experiences with Faculty Scale and the Educational Involvement Subtask of the SDTLA-PUR (r = .53), and the Art, Music, and Theatre Scale with the Cultural Participation Subtask (r = .55). Problem Solving and Decision Making Scale from the Life Skills Development Inventory have correlated with the Lifestyle Planning Subtask (r = .56) (Pickleshimer, 1991) and the Career Exploration Scale of the Career Development Inventory has been correlated with the SDTLA-PUR Career Planning Subtask (r = .60) (Super, Thompson, Lindeman, Jordaan, & Myers, 1981).

Wright (1987) found that participation and leadership in student organizations had a positive impact on the scores of seniors in developing mature career plans, mature lifestyle plans, and purpose, when compared to freshman scores. Participation in intercollegiate athletics was found to have a negative impact on the students' development of autonomy, mature interpersonal relationships, and purpose (Lawrence, 1985). Developing purpose was found to be positively related to students' intent to persist in college (Paratore, 1984). Williams and Winston (1985) also found a relationship between participation in student activities and development of appropriate education plans, mature career plans, and mature lifestyle plans, as measured by the SDTI-2, but failed to support the common notion that working students had a developmental advantage over nonworking students in developing purpose.

Other studies correlated the earlier iterations of the SDTLA-PUR with life role participation (Niles, Sowa, & Laden, 1994), members versus nonmembers of student organizations (Cooper, Healy, & Simpson, 1994), racial identity and ethnicity (Pope, 2000; Sheehan & Pearson, 1995), growth due to enrollment in a self-awareness course for underprepared freshmen (Higbee & Dwinell, 1992), moral orientation (Jones & Watt, 1999), and athletic identity (Cornelius, 1995), among others.

The SDTLA-PUR "represents a sample of behavior and reports about feelings and attitudes that are indicative of students who have achieved" the developmental task of developing purpose (Winston et al., 1999, p. 10). Although studies related to the SDTLA-PUR have been conducted on identity development issues, construct instruments, and activity participation, little work has been completed in assessing how the SDTLA-PUR measures purpose compared to

other conceptions of the same construct. Further research is needed related specifically to Vector Six, Developing Purpose as assessed by the SDTLA, beginning with a comparison of the SDTLA-PUR with another measurement of purpose.

Purpose in Life Test. Based on Frankl's (1959, 1984) theory of purpose in life, Crumbaugh and Maholick (1964) developed the Purpose in Life Test (PIL) to assist in measuring the degree to which a person experienced a sense of purpose in life. The PIL was used widely in both clinical and nonclinical populations (Hutzell & Peterson, 1986). Crumbaugh (1968), Crumbaugh and Maholick (1964), Meier and Edwards (1974), and Phillips (1980) all found support for the validity of the instrument as measuring Frankl's construct of purpose in life in relation to other similar measures of this construct, as well as in test–retesting and factorial analysis.

In their initial validation studies of the PIL, Crumbaugh and Maholick (1964) studied the ability of the PIL to discriminate between patient and nonpatient populations. In his summation of previous data collected, Crumbaugh (1968) established benchmark scores for various patient and nonpatient groupings. He reported the differences between the mean scores of patients (M = 92.60, SD = 21.34, n = 346) and non-patients (M = 112.45, SD = 14.07, n = 805) were significant at the $p < .001$ level. As Crumbaugh predicted, the PIL did a reasonable job of discriminating between the two groups with a high significance, lending construct validity to the instrument. A breakdown of mean scores on the PIL by each of the nonpatient groupings is provided in Table 2. Crumbaugh also asserted that the measures of concurrent validity of the PIL were "in line with the level of criterion validity which can usually be obtained from a single

Table 2

Mean Normative Scores of Groupings on the PIL.

Groupings	*M*	*SD*	*N*
Successful business and professional personnel (Rotarians, Kiwanis, etc.)	118.90	11.31	230
Active and leading Protestant parishioners	114.27	15.28	142
College Undergraduates	108.45	13.98	417
Indigent non-psychiatric hospital patients	106.40	17.71	16
Psychiatric In and Out Patients	92.60	21.34	346

From Crumbaugh (1968).

measure of a complex trait" (p. 79). He reported correlations with therapists' ratings of patients (.38, $N = 50$) and ministers of their parishioners (.47, $N = 120$) as evidence. The split-half correlation of the PIL ($N = 120$) yielded a coefficient of .85, corrected by the Spearman-Brown formula to .92, indicating the survey was reliable.

Exploration of the impact that intervening variables (age, sex, religiosity, education level, etc.) may have on PIL scores has also occurred, though with limited results. Some studies show an impact of demographic intervening variables such as race, age, and gender (Crumbaugh, 1972; Doerries, 1970), but many others do not (Crumbaugh, 1972; Crumbaugh & Maholick, 1964; Meier & Edwards, 1974; Yarnell, 1971). Based on these conflicting reports and others, no consistent interaction between the variables of sex, age, education, and intelligence and the PIL has been determined. Since the inception and original validation of the PIL, continued study has provided evidence of its relationship to issues such as engagement in work, values orientation, engagement in risky behaviors, and basic health and well-being. Because the instrument had its basis in clinical psychology, there has been broad research on the impact of the presence or absence of a sense of purpose on other deleterious behaviors.

In addition, there have been a number of studies exploring the PIL in relation to other instruments and psychological constructs. Studies have illustrated the PIL's effectiveness in discriminating levels of occupational meaningfulness (Crumbaugh, 1968), degree of engagement in college campus activities (Doerries, 1970), greater degree of purpose among successful applicants in a religious order (Crumbaugh, Raphael, & Schrader, 1970), and lesser degree of purpose among prison inmates (Reker, 1977). Higher PIL scores

have been found to be positively related to reduced anxiousness and increased self-confidence (Yarnell, 1971), self-acceptance (Crumbaugh & Maholick, 1969), intrinsic religiosity (Crandall & Rasmussen, 1975), social attitudes (Pearson & Sheffield, 1975), satisfaction with current life (Reker & Cousins, 1979), positive expectations of the future (Reker & Cousins, 1979), and emotional stability (Crumbaugh & Maholick, 1969). Individuals with higher PIL scores have also been found to be moderately less neurotic and more sociable, as measured by the Eysenck Personality Inventory (Pearson & Sheffield, 1974).

In the last two decades, purpose or meaning in life has continued to gain the attention of researchers within their own spheres of interest. Lazuras and DeLongis (1983) established that sources of personal meaning influence the stress and coping process throughout the life span. In two different studies, Newcomb and Harlow (1986) found that perceived meaninglessness in life mediated the relation between uncontrollable stress and substance use. Harlow, Newcomb, and Bentler (1986) found purpose in life to mediate between depression and self-degradation, and subsequent drug use for women and suicidal ideation for men, and later found purpose in life positively related to happiness. Padelford (1974) found a significant negative relationship between high school student drug involvement and a sense of purpose in life. Other studies have shown the relationship of purpose in life with responsibility and self-control (Simmons, 1980), and well being (Lazuras & DeLongis, 1983). Additionally, lack of purpose in life has been shown to relate to suicidality and hedonistic value orientation (Crandall & Rasmussen, 1975).

Based on the published research reviewed here and elsewhere about the PIL, having a sense of purpose in life is clearly related to a range of very positive

characteristics, values, and healthy mental outcomes. Lacking that sense of purpose was also shown to relate to a series of extremely detrimental behaviors. The purpose in life construct and its corresponding measurement instrument, the PIL, serves as a valuable theoretical framework to compare the SDTLA-PUR in assessing developing purpose. Although the PIL appears to be a very valuable construct for consideration in the fields of public education, public health, higher education, and others, it is important to consider the context and methodology used in these studies before they are generalized to a different nonclinical focus population.

Frankl's Logotherapy and the PIL instrument both had their conception in the field of clinical psychology. Therefore, much of the available research on the construct is focused on the clinical or outpatient population. Additionally, the few studies available in nonclinical situations tended to use convenience samples, or more random samples with very narrow population definitions. These limitations in the research bring into question the direct applicability of the existing data to nonclinical settings or wider audiences. In his review of the PIL for the 6th Edition of the *Test Critiques*, Hutzell (1987) indicated, "Normative data are notably absent," and recommended caution until data that are more representative are published (p. 445). However, the current PIL research provides some sense of the relationship between purpose in life and other important constructs in certain populations, and points to the possibility of similar relationships in a wider context. The PIL offers a prime opportunity for further exploration of purpose in life with randomized nonclinical populations to explore the applicability of the findings to a broader audience. The research questions outlined in Chapter III are designed to conduct such an exploration.

Methodological Considerations

In developing a research methodology for this study, additional review of the literature was needed in the areas of Web-based data collection methods, the residential status of the student and its impact on development, and environmental factors that may influence student development. The following discussion highlights pertinent literature on these topics.

Web-Based Data Collection Methods. The massive expansion of the Internet and Web-based technologies over the last 10 years has been well documented. The widespread adoption of computers in homes and business has allowed marketing agencies, governmental services, polling organizations, and a growing number of researchers to expand their research methodologies to included Web-based and Internet assisted data collection (Sills & Song, 2002).

Collecting data entirely through Web-based approaches may not yet be possible in the general population of the United States (Dillman, 2000). However, in population subsets with near universal Web access, it is currently effective (Crawford, Couper, & Lamias, 2001). Arnau, Thompson, & Cook (2001) concluded that "some populations, such as those in the university environment, may have sufficient technical sophistication and availability of networked computers for equivalent sampling to occur" (p. 24). Crawford et al. believed that the "high penetration of Web and Internet usage" by college students made Web-based surveys especially popular with this population (p. 146).

Although this mode of data collection is relatively new, it offers significant advantages over other alternatives such as paper and pencil U.S. Mail survey methods. Probably the greatest advantage of this method is lower costs; Web-based data collection is significantly cheaper than other alternatives. Dillman

(2000), Schleyer and Forrest (2000), and others reported that Web surveys were operationally more cost effective because printing and postage costs were essentially eliminated. This is a particularly important advantage for studies involving larger samples. Schleyer and Forrest reported that when comparing Web-based modes of data collection to U.S. Mail, the integrity of the data was improved through Web-based techniques. This primarily resulted from the elimination of transcription error during data entry. Web-based data collection allows the compilation of data from a larger number of participants more quickly and inexpensively and of higher quality than other alternatives. However, as with all methods of data collection, there are trade-offs.

Often the greatest objection to Web-based data collection of this nature is the fear of deception. Uninvited individuals may find the survey through various search engines and take the survey, the participants may not really be who they say they are, or participants may take the survey more than once (Sweet, 1999). Sweet believed that the risk of participants cheating or completing the survey multiple times is minimal.

Even though college students may have increased access to computers, some participants still may be uneasy with use of the technology. Additionally, Dillman (2000) acknowledged that the different configurations of computer systems used by the public may result in items "seen by one respondent with one type of computer operating system and screen configuration appearing significantly different from the same questions seen by a respondent who has another" (p. 354). Dillman provided comprehensive recommendations on the design of Web-based surveys to limit challenges caused by variations in both technological confidence level and respondents' computers used when taking

the survey. Those recommendations included: an introduction to the Web survey that emphasizes ease of use; careful selection of the first question so that every participant could respond, online question formats similar to those used on paper and pencil surveys, minimal use of colors and graphics, testing of the survey on multiple configurations of computers, and specific help instructions on how to take each of the necessary actions. Dillman provided significant direction to the development of Web-based surveys to eliminate or significantly reduce design-related limitations of the medium.

By far the greatest risk in utilizing Web-based data collection is the unknown influence Web-based techniques may have on response rates of the participants (Crawford et al., 2001). There is a significant need for new and more robust data collection techniques, for as Krosnick (1999) observed, "response rates for most major national surveys have been falling during the past four decades" (p. 539). Crawford et al. believed that nonresponse represents *the* main challenge for Web-based surveys. Sills and Song (2002) provided a brief analysis of response rates from their review of the literature, which varied across the continuum of types of surveys and populations of study. In a comparison of Web-based and U.S. Mail survey methods for the collection of drug and alcohol data from students at a similar, nearby institution, researchers randomly assigned 3,500 students to a Web-based methodology and 3,500 to the traditional U.S. Mail mode. They found a 63% response rate via the Web and 40% for U.S. Mail (McCabe, Boyd, & Couper, 2002). It should be noted that these high response rates could be due to the very high incentives provided to each of the participants.

The verdict on response rate mode comparisons among studies in

the literature was still unclear. Because of the concern about response rates generally and with Web-based methods specifically, a number of researchers have begun making significant suggestions on ways to improve response rates in this methodology. Cook, Heath, and Thompson (2000) completed a meta-analysis of response rates in Web-based surveys, exploring strategies that increased or decreased response.

Meta-analysis indicated that the greatest response rates are obtained when three emailed contacts are made; greater numbers of contacts did not necessarily increase response rates (Cook et al., 2000). The authors recommended an initial invitation e-mail, followed by two reminders, to achieve the greatest rate of return. Additionally, the timing of the three emails is significant. Because of natural patterns of work, classes, and free-time, people used emails and the Internet different during the week as compared to the weekends. Emails should be scheduled to take advantage of user-patterns.

The meta-analysis showed that personalized emails generally improve response rates (Cook et al., 2000). Personalization of the e-mail requires the use of merging software that can insert the first and/or last name of the individual to whom the e-mail is being sent. Personalization of an e-mail by beginning it with "Dear _____" had a positive impact on response.

The importance of a survey to the participants' lives had a significant impact on their likelihood to participate. Surveys deemed somewhat salient tended to have the highest response rates (as opposed to Not Salient and Very Salient), according to Cook et al. (2000). Survey salience could be communicated by the subject line of the e-mail, the content of the e-mail message, or the initial introduction of the Web survey.

Common experiences of researchers tended to indicate that providing incentives to participate increased response rates. The meta-analysis by Cook et al. (2000) did not summarily support this belief, but the researchers acknowledged that this result may be due in part to the kinds of surveys examined that offered incentives. When deploying surveys, scholars expecting low participation because of size or content of the instrument provided substantial rewards accordingly.

Dillman (2000) believed that the lack of follow-up with nonresponders to the survey will usually result in response rates that are "20-40 percentage points lower than those normally attained" (p. 177). With traditional U.S. Mail surveys, researchers often provided an additional contact by a different mode (e.g., e-mail). Applying this procedure to online data-collection, in which the initial method of contact is via e-mail, would mean providing some kind of contact via U. S. mail, such as a postcard or personalized letter.

Response rates for all surveys are a major concern. With the rapid expansion of a new means of data collection, recommendations for improving the rate of response in Web-based data collection are beginning to coalesce, providing some guidance to this new methodology.

Residential Status of the Student. Studies related to the impact of students' residential status on their development have been widely cited in the literature. These studies typically compare students living in a residence hall to those living in a residential college, and students living on-campus to those living off-campus (Brown, Winkworth, & Braskamp, 1973; Pascarella & Terenzini, 1991; Riahinejad & Hood, 1984; Rich & Jolicoeur, 1978). A number of configurations of residential settings have emerged in the history of higher education, ranging

from traditional on-campus residence halls to residential colleges to off-campus housing and apartments. Because residential setting has been shown to be a primary determinant of developmental outcomes, it is an important consideration for exploring purpose in life.

Living in an on-campus residence hall is the single most consistent positive influence on student development outcomes, because students are more connected to campus services and activities (Pascarella & Terenzini, 1991). A specialized on-campus residential setting may involve living–learning communities or residential colleges. Living–learning programs have been introduced across the country in the past 30 years (Inkelas & Weisman, 2003). These programs are designed generally to integrate academic endeavors with the residential setting, such as a residence hall or theme house. These residential colleges are characterized by a common set of shared learning opportunities, such as courses, co-curricular activities, and special faculty interactions (Inkelas & Weisman).

Students living off campus, often called commuter students on traditional residential campuses, have increasingly become the norm in American higher education (Stewart, Merrill, & Saluri, 1985). Pascarella and Terenzini (1991) believed that living off campus provided different environmental factors that influence the student's development. Traditionally, students living off campus live with a limited number of friends or acquaintances in houses and apartments or in group settings such as Greek or theme houses. As marketing competition for students intensifies, apartment complexes, residence halls, and others have had to expand their services as an enticement for students to move in.

One emerging off-campus residential setting is large apartment complexes

that offer many of the same services and benefits as on-campus residence halls. These emerging apartment compounds include such traditional on-campus services as weekly activities, social events, and life-skills educational programs; computer labs; fitness and recreation facilities on site; and roommate matching. In addition, community ambassadors serve a role in the apartment complex similar to that of resident advisors in residence halls. These unique attributes augment many of the luxuries of off-campus living, including private bedrooms and bathrooms, in-apartment washers and dryers, Ethernet and cable outlets in each room, and keyless entry and security systems. Students have been easily drawn to these kinds of complexes from on-campus housing and off-campus houses or traditional apartment complexes.

Psychosocial development has been shown to be influenced by the connectedness of students in a residence hall to the campus community, compared to the more isolating off-campus housing (Pascarella & Terenzini, 1991). These new emerging apartment compounds are a hybrid that may minimize the deficits of living off-campus.

Environmental Factors Affecting Development. Assessing student outcomes is critical to the determination of whether or not a particular program, policy, or practice results in gains in student development (Terenzini & Upcraft, 1996). Astin (1991) established one of the "most widely recognized and frequently used frameworks for assessing outcomes" (Terenzini & Upcraft, p. 218). His I–E–O model provided a context in which to explore factors that may contribute to the development of purpose.

In Astin's (1991) I–E–O model, the first dimension of the model is inputs. Students enter college already with 17 or more years of experiences and

development. Because students grow up in different environments, they differ in the inputs they bring to the campus. In addition to the students' academic test scores, choice of major, and degree aspirations, they may also differ substantially on demographic characteristics such as race/ethnicity, age, socio-economic status, and gender (Astin). Each of these inputs can influence educational outcomes, or the O in Astin's I–E–O model. When possible, these inputs need to be taken into account (Terenzini & Upcraft, 1996) or controlled in the design of the study and/or statistical analysis.

Probably the most important segment of Astin's (1991) I–E–O model includes those events, activities, and factors that may influence a student's development while on the college campus, which Astin called environmental factors. Institutional characteristics as identified by Astin, which include the institution's size, student body demographics, faculty morale, etc., are a means to identify differences resulting from students' attending different colleges and universities. In a study involving a single institution, these between-school differences are controlled for in the design. However, student experiences within one institution can be extremely diverse. The I–E–O model takes into account a range of influences that shape the student experience, including place of residence, work experiences, and talking with a professor (Astin, 1993). Astin's (1993) theory of student involvement provides one way of examining the environmental factors that influence student developmental outcomes. He provided a context for results reported in the wide range of literature on environmental influences and student development. Astin (1991) felt that "students learn by becoming involved" (p. 295). In Astin's conception, involvement refers to the amount of physical and psychological energy devoted

to an experience. He believed that the ability of students to develop their skills, both intellectual and psychosocial, was in direct proportion to the time they spent in activities that were designed to produce these gains. Astin outlined five general environmental factors that may influence students differently within an institution: academics, faculty, peer groups, work, and other forms.

Astin (1993) felt that the quantity of involvement with academic activities and faculty was an important environmental influence on student development. He outlined a range of ways in which the extent of academic and faculty involvement could be quantified, ranging from time spent in the classroom and other academic programs to the frequency of involvement with faculty outside of class. Socializing with peers, participation in student organizations and activities, and working both on and off campus were also considered important to development. In assessing student involvement in his longitudinal study, Astin felt that time spent with friends, partying, or participating in student organizations and activities also were important influences.

Astin's (1991) I–E–O model provides a comprehensive model for guiding an exploration of college outcomes such as retention, growth, and development. Astin believed that the incomplete adoption of his model is inappropriate in today's environment. However, his model provides the level of specificity needed to assess general outcomes on a macro-institution level. It was somewhat impractical for application to a study comparing two measurement instruments. Astin's environmental factors did, however, assist in providing some guidance in establishing the factors to be explored that may influence developing purpose.

Summary

Chickering and Reisser's (1993) seven vectors of college student

development outlined the major developmental highways on which students should progress during college. One of those highways, Vector Six, involves developing a sense of purpose through vocational plans, avocational and recreational interests, and family and interpersonal commitments. The SDTLA–PUR test purports to measure Vector Six, Developing Purpose, of Chickering and Reisser's model of student development (Winston et al., 1999). As a preeminent scholar in clinical psychology, Frankl (1959, 1979, 1984, 1997) established the notion of purpose in life in his work through the last half of the 20th century. He believed that the elements of purpose include one's work, nature and cultural interests, and love. Crumbaugh and Maholick's (1964) PIL test purports to measure Frankl's views on purpose. Although both theories have great commonality in their articulation of the same construct, the instruments designed to assess those constructs have not yet been empirically compared.

Important considerations for the design of the study were also reviewed. These included issues related to Web-based data collection as well as a review of Astin's I–E–O (1993) model and the research related to residential setting, which served to guide the identification of specific environmental factors that may influence student development.

CHAPTER III

RESEARCH METHODS

Chickering and Reisser (1993) and Frankl (1959, 1979, 1984, 1997) have developed similar conceptions of developing a sense of purpose in life. The instruments constructed to measure these concepts, the Student Developmental Task and Lifestyle Assessment–Purpose (Winston et al., 1999) and the Purpose in Life Test (Crumbaugh & Maholick, 1964), reflect the theoretical foundations upon which they are based; they focus either on college student development or on clinical psychology. The literature shows that purpose in life relates to a broad range of issues important to student affairs professionals (Moran, 2001). The purpose of this study was to compare how both instruments measure similarly defined conceptions of purpose in life. This study also explored environmental influences on college campuses that may be factors in developing purpose, in order to provide better information for student affairs professionals on how to impact a student's sense of purpose. Using innovative Web-based data collection methodologies and appropriate instrumentation, this study sought to answer the following three research questions:

1. Are there differences in the way the PIL and SDTLA–PUR measure a student's sense of purpose in life?
2. What demographic variables impact a student's sense of purpose in life, as measured by the SDTLA–PUR and the PIL?
3. What involvement or environmental factors impact a student's sense of purpose in life, as measured by the SDTLA–PUR and PIL?

This study provides an empirical comparison of the SDTLA-PUR and the

PIL and explores demographic and other factors to inform future exploration of developing purpose among college students.

Population

From the review of the literature, three important considerations emerged that had direct implications for the definition of the population for this study: enrollment level (full time versus part time), residential status, and development due to maturation. These issues were considered in the definition of the population, as well as in the drawing of the sample.

The University Registrar maintains the names, contact information, enrollment information, demographic variables (such as age, sex, and race) and other data on all of those who currently take or have taken classes at the institution. That is, the University Registrar keeps records on any individual who has taken a class at the institution, from the full-time, regularly enrolled traditional student to the retiree taking one course—a population difference that seemed inappropriate for the purposes of this design. Because much of the data collected on the SDTLA generally is focused on the "traditional student," it was determined that this study would make the greatest contribution to the literature by also examining traditional college students. For the purposes of this investigation, students who were not enrolled full time as defined by the institution (12 or more semester credit hours) would be excluded from the population and sample.

As indicated in the review of literature, the residential status of the student has been shown to impact development (Astin, 1993; Pascarella & Terenzini, 1991). Studies typically compare students living in a residence hall versus a residential college, and students living on-campus versus off-campus. Because of a unique emerging residential setting occurring near the campus of study, it

was determined that more categories of residential setting would be important to this study. No specific limitations were set on the definition of the population based on residential setting, but the stratification of the sample addressed this variable.

Finally, to address the potential confounding variable of development due to maturation, it was decided that the population definition would be limited to a single class level. A number of student development theories chart development over time (Chickering & Reisser, 1993; Erikson, 1968; Kohlberg, 1969; Perry, 1970). Chickering and Reisser believed that the types of development reflected by some of their seven vectors more naturally occur earlier in the student's college experience, and others more naturally occur later. The impact of natural maturation on development is an important consideration in a study of the psychosocial outcome of developing purpose, and must be accounted for in the research design of the study. The sophomore class was selected to control for this development due to maturation.

The population for this project was defined as sophomore students at a large Midwestern university, currently registered for 12 or more credit hours as recorded by the Office of the University Registrar.

Setting

Data were collected in the Fall, 2003, semester at a large mid-western institution of higher education, Michigan State University (MSU). Founded in 1855 as an autonomous institution of higher education for the citizens of the State of Michigan, MSU was later designated as the state's only Land-Grant institution. Located in East Lansing, Michigan, four miles east of the State Capitol, it is comprised of over 660 buildings on a 5,500 acre campus. Almost

45,000 students from every county in the state, all 50-states in the United States, and over 125 other countries are involved in one of over 200 program areas in 17 degree-granting colleges. MSU is a selective institution, admitting students with an average of a 24.5 ACT Score, 1,141 combined SAT Score, and a high school grade point average of 3.58. One of the unique attributes of the campus of study is the size and scope of the on-campus residence hall community. MSU hosts the largest residence hall system in the world, providing almost 15,000 beds in a variety of traditional residence halls, on-campus apartments, learning communities, and other on-campus settings.

Of the over 34,000 undergraduate students enrolled in the institution during the semester of the study (Table 3), 55% were women, 21% were underrepresented minorities, and were distributed across the ages of study (1% 18 years old, 48.46% 19 years old, 35.78% 20 years old, 10.86% 21 years old, and 3.71% 22 years old or older). Over half of the students in the population (52.39%) lived in an on-campus residence hall or learning community, almost 2% lived in an emerging apartment complex as described in the literature review of this document, and the remaining students lived off-campus (45.75%).

Sample

To determine the most appropriate sampling method for this study, several predictive models were created to explore the impact that different sampling methods had on the marginal totals of the demographic variables of interest. Because this study was designed to compare the SDTLA–PUR and the PIL in four different residential settings, it was determined that an equal-probability-of-selection-method (EPSEM) simple random sample of sophomores within each residential setting would be most appropriate. Probability sampling of this nature

Table 3

Demographic Breakdown of Population.

Variable Source		*n*	%
Age	18 Years Old	91	1.19%
	19 Years Old	3709	48.46%
	20 Years Old	2738	35.78%
	21 Years Old	831	10.86%
	22+ Years Old	284	3.71%
Race/Ethnicity	Caucasian	6040	78.92%
	Under Represented Minority	1613	21.08%
Gender	Men	3481	45.49%
	Women	4172	54.51%
Residence	Residence Hall	3539	46.24%
	Residential College	471	6.15%
	Emerging Apartment	142	1.86%
	Off-Campus	3501	45.75%

remains the most respected method used by researchers (Babbie, 1990), and would yield the most credible data. In determining the appropriate sample size, expected response rates were taken into consideration. To aid in determining the final *N* for the sample selection, consultations were held with researchers who regularly implement student surveys on the campus of study. Those discussions indicated that response rates for most surveys generally ranged from 20% to 30%.

Dillman (2000) recommended a completed sample size of 236 to 361 for populations of the size occurring on the campus of study. Salant and Dillman (1994) recommended working backward from the completed sample size to determine the original sample, taking response rates into consideration. Models were completed to determine what level of sampling would be required to achieve 236 to 361 completed surveys, estimating a 25% response rate. It was determined that 1,000 participants divided among the four residential settings would be randomly selected for the sample. The following information was obtained in electronic format for the sample: contact name, university-provided e-mail address, local address, and phone. An electronic format was faster, could be easily used by the emailing system selected for this project without transcription error, and provided the greatest flexibility for making changes to the contact information for nonresponders, if necessary.

Other demographic characteristics, including but not limited to race/ ethnicity, sexuality, socioeconomic class, and disability status, are important considerations for the work of student affairs professionals and have been shown to have an effect on the development of purpose in earlier studies (Crumbaugh, 1972; Crumbaugh & Maholick, 1964; Doerries, 1970; Meier & Edwards, 1974;

Yarnell, 1971). . However, because of the unique sampling challenges involved in obtaining sufficient heterogeneity among each of those characteristics, it was determined that their investigation was better left for future studies.

Instrumentation

The instrumentation needed to answer the research questions in this study included the Student Developmental Task and Lifestyle Assessment– Purpose (Winston et al., 1999); the Purpose in Life Test (Crumbaugh & Maholick, 1964); a series of questions about the demographic characteristics of the participants, including residential status; and finally a series of questions about factors that may interact with a student's sense of purpose in life. Each of these instruments is briefly described in this section. Specific demographic and Factor Series questions have been included verbatim in Appendices A through D.

Student Developmental Tasks and Lifestyle Assessment–Purpose. The purpose of the SDTLA is to assess the socio-emotional development of college students, based on Chickering's (1969) and Chickering and Reisser's (1993) vectors of college student development. Students respond to 153 multiple-choice and true–false questions in the SDTLA. The scoring of the instrument involves assignment of different weighting values for each response option, averaging students' scores on the instrument, and comparing the students' scores to nationally established normative data disaggregated by class and gender. Form 1.99 includes all of the items, and composite scores obtained for three developmental tasks: purpose, relationships, and academic autonomy. Form 2.99, the SDTLA–PUR, includes only those 57 questions necessary for the Developing Purpose task and subtasks of the complete instrument, and was the version used in this study.

Through validity testing, the scores were found to be sensitive to test–retesting, establishing growth from the freshman to senior year (Wachs & Cooper, 2002). Additionally, Winston et al. (1999) found Pearson product corrections for all tasks and subtasks in a test–retest situation to cluster around .80, $p < .01$. Winston et al. also established internal consistency of the SDTLA-PUR, with alpha coefficients from .88 to 62. Although this instrument had not been reviewed yet in the *Mental Measurements Yearbook*, the earlier versions upon which it is based have been reviewed. Henning-Stout (1992) established the reliability and validity of the SDTI–2 (the earlier version from which the SDTLA evolved) in the 1992 yearbook. She concluded that the instrument is "a psychometrically sound inventory that can prove useful in program development and has potential research applications" (p. 5).

Purpose in Life Test. Based on Frankl's (1959, 1979, 1984, 1997) theory of purpose in life, Crumbaugh and Maholick (1964) developed the Purpose in Life Test to assist in measuring the degree to which a person experiences a sense of purpose in life. This instrument has three parts (only part A was used in this study). Part A of the PIL includes 20 items in which students rate themselves on a 7-point scale. For each item, the end points of the scale are different descriptive anchors, and position 4 is labeled as neutral. A summary score for the PIL involves simply adding the rankings for each of the 20 items. Participants with higher scores are expected to have a higher degree of sense of purpose in life. Section B contains 13 sentence completion questions, and Section C requires a free-response paragraph on personal aims and ambitions. "Part A is the only one which is routinely treated quantitatively" (Hutzell, 1987, p. 131), and was the only one used for this study.

The PIL is used widely in both clinical and nonclinical populations (Hutzell & Peterson, 1986). Crumbaugh (1968), Crumbaugh and Maholick (1964), Meier and Edwards (1974), and Phillips (1980) all found support for the validity of the instrument as measuring Frankl's construct of purpose in life in relation to other similar measures of this construct, as well as in test–retesting and factorial analysis. Crumbaugh believed the measures of concurrent validity of the PIL were "in line with the level of criterion validity which can usually be obtained from a single measure of a complex trait" (p. 79). The split-half correlation of the PIL (N = 120) yielded a coefficient of .85, corrected by the Spearman-Brown formula to .92, indicating the survey was reliable.

Demographic Variables. There are a number of ways to look at the demographics of college students, depending primarily on the researcher's field of work or particular interests. The focus of this study was not the delineation of the two instruments by demographic considerations, but to more generally explore demographic variation in the composite scores of the two instruments. For this study, students were asked to manually type in their identification of age, gender/sex, and sexual orientation. The questions of race/ethnicity, residential setting, and socioeconomic status (financial aid awards used as a proxy) were delineated as articulated in Appendix A.

Environmental Factors Affecting Development. In reviewing Astin's (1993) environmental concerns, three series of factors appear to be particularly salient to this study. Astin's view of time spent indicates that quantification of how many hours a student spends on activities each week could be an important variation among students that influences development differently. Students were asked to indicate:

1. how many hours they spend each week on a series of academic, nonacademic, and personal activities (Appendix B);
2. their degree of involvement and leadership in different types of student organizations (Appendix C); and
3. how often they participated in a series of specific university and non-university sponsored activities and services, such as reading the campus newspaper or talking with a professor outside of class (Appendix D).

Web-Site Development

The institution under study provided a particularly good environment for Web-based data collection for several reasons: all entering freshmen were required to purchase a computer before the first day of class; every student was assigned an e-mail address at the time of admission; the campus provided a broad array of on-campus computer laboratories in classrooms, academic buildings and residence halls so that students had easy access to this resource; dial-in options for off-campus students were widely available; and the campus had invested strongly in continual improvement of the campus network and e-mail systems.

Selection of Software Package. Although it would have been less expensive to create the Web page from scratch and use freeware software for the storage of the data, this approach would have created a significantly higher need for researcher expertise in HTML than was currently available, as well as increasing significantly the opportunity of a design flaw or error. Therefore, this study employed a commercial software package that was designed, developed, and tested specifically for the purposes of Web-based survey development.

Using this package significantly increased the reliability of the data collection mechanism itself.

After a review of the most popular Web-based data collection software packages and consultation with local users of such software, the package selected for this project was www.surveymonkey.com. This service, designed for survey data collection of this nature, was more reliable than creating the page with basic HTML and freeware technologies. It provided the options for security, data management, data export, and survey layout needed for this study. Finally, the service had a helpline with technical experts to assist in problem solving, if necessary.

Cheaters and Repeaters. Because deception is generally perceived as a significant challenge to the integrity of Web-based data, the software package selected for this project minimized chance encounters into the Web site by random Web users through a URL naming structure. Additionally, the mechanisms employed to invite the participant to the Web site used a unique Web site address for each respondent. The Web address to which a student was directed had a series of numbers at the end, such as "16761279E9931." The next student in the sample would have the next sequential number, "16761280E9931"—the identifier changing from 79 to 80 immediately prior to the E in the address. When students received the e-mail, they simply used their mouse to click on the Web-page link, and the e-mail program opened the survey in their Internet browser. Students with e-mail software programs that did not automatically open links in this manner were directed to copy and paste the entire Web-site address from the e-mail into their Internet browser software program.

The software packaged recorded and tracked which e-mail address was assigned to which identification number in the Web address. When the student replied to the unique Web address, the software package referred to its data list, matched the Web-page address with the correct e-mail address, and marked that participant as "responded." Once the students responded to the Web site, they were unable to return and make a duplicate response. This procedure provided an appropriate level of security to ensure that only those users who were in the sample submitted data, and eliminated the opportunity for repeaters.

Web-Site Design. Using a personal computer and various Web pages provided by the selected software package, the researcher developed the Web site to integrate the instrumentation for this study. The review of the literature indicated that, similar to paper-and-pencil surveys, the actual design and layout of the data collection Web site may influence a responder's likelihood of participation in and completion of the survey (Dillman, 2000). The use of technology also created additional design considerations. Even though the population of study had increased access to computers, some participants still might be uneasy with use of the technology. Or, those participants comfortable with computing might expect a survey that was easy to use and quick to complete, like the Web pages generally available on the Internet. These challenges were managed by the design of the Web site itself. A number of design elements discussed in the review of literature were included in the design of the Web site to minimize these challenges and increase the likelihood of both beginning and completing the survey.

The initial welcome screen to the Web site integrated the traditional informed consent statement, a statement about the ease of use and speed of

the survey, and announcement of the incentive drawing, as recommended in the review of the literature. For those who may not have a high level of comfort with using Internet browsers, an option to complete a series of help screens was included on this initial welcome screen. The text of the welcome screen is given in Appendix E.

The number of screens (pages) for the survey portion of the Web site was kept to a minimum. Very simple, straightforward questions were formatted similar to their paper-and-pencil equivalents. The data collection sections used traditional design elements such as dropdown boxes and radio buttons, as used widely on Web pages and popular software packages. Questions were generally "point and select." The student simply used the computer mouse to point and select from the options for each question, so that actual typing of information was seldom necessary. The design avoided using graphics and other elements that delayed the instant loading of a Web page. Finally, screen notations indicated progress at the half-way point, and the final screens indicated that the participant would soon be finished.

Because of lessons learned in the pilot study described in the following section, two Web sites with different sequencing of questions were created for primary data collection. Both Web sites began with the informed consent page, help pages (if the student selected that option), and then the demographic questions. Next, the SDTLA-PUR and the PIL were provided. To reduce any bias related to sequence of the instruments, the SDTLA-PUR came first in one Web-site sequence, and the PIL came first in the other. The instruments were followed by the three factor series, and finally by a thank-you and referral page (Appendix F).

Following completion of a first, second, and third draft of the data collection Web site, a small group of graduate students and faculty with varying degrees of technological sophistication were requested to complete the survey. The group provided initial thoughts and feedback about the data collection method. This feedback was reviewed and changes made as appropriate.

Pilot Testing

Once the Web-site was established and preliminary feedback reviewed, a pilot test was conducted. The purpose of the pilot test was to determine the basic usability of the Web-site data collection mechanism, test options for presenting the invitation to participate in order to increase response rates, as discussed in the literature review, and finally test the export of the data and statistical analysis.

The pilot sample included 50 sophomores randomly selected from a list of on-campus students and 50 sophomores randomly selected from a list of off-campus students. In the pilot study, participants took either the SDTLA-PUR or the PIL, but not both. Students were randomly assigned to take either the SDTLA-PUR or the PIL, with 25 on-campus and 25 off-campus students taking each instrument. All pilot participants answered the same demographic and factor series questions.

Half of the participants in each assigned category of the sample were sent a personalized e-mail invitation to participate, as suggested by the meta-analysis (Cook et al., 2000). In addition, half of each cell were sent a U.S. Mail postcard informing and reminding the participants that they were selected to participate. This procedure tested whether follow-up by alternative methods (mail vs. email) improved response rates.

At the conclusion of the pilot study, the data were downloaded, imported

into SPSS, and verified to ensure that the process worked correctly. Finally, recoding and analysis of the pilot data were completed to ensure that the outcomes of the analysis provided sufficient evidence to answer the research questions posed.

Lessons Learned From the Pilot Study

The pilot study provided a number of very important lessons that were incorporated in the research design for primary data collection. Logistical errors were identified and challenges with recoding discovered, instrumentation modified, and the sampling slightly altered.

The pilot study identified a logistical issue concerning the settings on the Web-site that were used in crafting the invitation e-mail. The wrong survey was sent to a set of participants in the final e-mail reminder. This error indicated a need for greater care in selecting parameters in the List Management section of the software package. The challenging nature of recoding the data for the SDTLA-PUR also became apparent.

The pilot study also revealed that the population (full-time sophomores) had fewer than 250 students living in emerging residences–the number originally planned for sampling for this residential setting. However, the total *N* of 1,000 was still important to achieve. All students living in emerging residences were selected for the sample and the general off-campus sample was slightly increased to ensure a total of 1,000 students in the sample.

The pilot study explored the impact of alternative methods of contact by sending a postcard through U.S. Mail to half of the participants. Response rates were similar between those who received the postcards and those who did not. Postcard reminders were not used for primary data collection because they were

expensive and did not have an impact on total response rates. Also, tracking of responses in the pilot study indicated that students generally responded within a 6-hour time frame from the time the e-mail was sent. A postcard simply would not have arrived in time to have a significant impact. Postcards were removed from the primary data collection design because of an unacceptable cost–benefit ratio.

Personalized emails also did not cause a demonstrable improvement in response rates. However, personalized emails would continue to be used in the primary data collection because no additional costs or time commitment would result, and the cost–benefit ratio deemed acceptable.

The data coding and analysis caused a major shift in the design of the study. In the pilot study, half of the participants completed the SDTLA-PUR and half completed the PIL. Data analysis options were explored, and it was determined that the statistical methodology available to complete data analysis with this design would be insufficient to fully answer the research questions. The Web-site was modified so that all students took both the SDTLA-PUR and the PIL as well as the demographic and factor series questions. Although this created a much lengthier survey for the participants to complete and increased the potential for dropout, it was determined that the statistical testing for the research questions took priority over a potential decrease in survey usability rates.

Primary Data Collection

Following the completion of the pilot study, the lessons learned were integrated into the primary data collection design. The final design described below includes the process for making contacts, efforts to increase response rates, and strategies to manage potential technological problems. It also addresses the issues of confidentiality, participant burden, sensitivity of

questions, and costs of the study.

Contacts and Response Rates. Response rates of any survey project are of concern, including a Web-based data collection study (Dillman, 2000). On the campus of study, response rates with all survey methods have been a challenge for a number of years. Traditionally, surveys distributed by U.S Mail often barely achieved a significant response rate, and Web-based data collection variations in response are wide. Campus staff typically employed efforts to bolster response rates up to 25% to 30% of the sample. Because of the concern about response rates generally, and with Web-based methods specifically, a review of the literature related to response rates for Web-based data collection was completed, several options tested in a pilot study, and the outcomes integrated into the research design of this study.

In this project, three e-mail contacts were completed, as recommended in the literature review. The initial e-mail and two reminder emails differed only in the first paragraph. In the reminder emails, a simple paragraph was added at the beginning indicating that in the previous week, the student was invited to participate in the survey and had not yet responded. The text of the initial invitation followed this introductory paragraph. Emails were sent on weekdays and weekends to take advantage of the different usage patterns of the Internet. The content of the initial invitation e-mail is provided in Appendix G, and the text of the reminder emails in Appendix H.

Personalized emails (emails beginning with the name of the participant) have been shown in the literature to increase response. The pilot test found no significant difference in response for personalized e-mail. However, because the Web-site used for this study could easily send personalized emails, a decision

was made to use the personalized e-mail option. Each e-mail used in primary data collection was personalized with "Dear" followed by the first name of the participant.

The literature reviewed indicated that survey salience has an impact on response. Because this project tested pre-existing instruments, the content of the survey itself was somewhat inflexible. Therefore, survey salience was strongly addressed in the invitation e-mail and informed-consent welcome page to the study, indicating how the survey data would impact a broad range of institutional services important to students, such as career services, the counseling center, residence life, and student organization programming. See Appendixes E through H for the texts of the welcoming page, invitation, and reminder emails.

As an incentive to participate in this study, respondents were entered into a drawing for their choice of a $150 gift certificate to Best Buy, a store in the local mall, or the Campus Book Store. It was impractical to provide a substantial incentive to every participant in this study.

The response rate was a significant concern in the design of this study. The methods mentioned above were selected through comprehensive readings in the literature and pilot testing, and represent a good-faith effort to increase response rates.

Technological Backup. Stories are often shared of "almost" completing a paper, research article, or spreadsheet, only to encounter a technological "blip." The power goes out, the computer crashes, a file is accidentally deleted. In a review of other research projects utilizing Web-based data collection, a number of researchers articulated some challenge related to the technology used in the data collection process. The design of this project accounted for anticipated

technological blips reported in several ways.

The Web-site and database were stored on the software's site server. This server was regularly backed up, providing duplicate copies should the data or web-site be destroyed, and server staff were available to manage power outages and service interruptions quickly. Some concern was identified in the literature about server crashes resulting from slow processing speeds, because of the number of hits to the survey in a very short period. Desktop Web-servers may encounter this challenge, but the server used in this study was designed for such high numbers. Additional back-up was scheduled to copy the data automatically from the server to the researcher's personal hard disk, thus creating three copies of the data during collection. The pilot test assisted in determining if the site itself was designed well and worked correctly, and if export and database systems worked as anticipated on a small sample of respondents. Finally, the server provided written guarantees of the security of the data.

Confidentiality. The service utilized for data collection provided a mechanism whereby emails were sent to individual participants, with a link in the e-mail that took the participant to the Web-survey. This link is a unique identifier; when the link is selected and the participant goes to the server, the computer recognizes the original e-mail of the responder and marks the email address as *responded*. This information was maintained in a separate *List Management* section maintained by the service, and was used for entry into the incentives drawing and appropriate follow-up of nonresponders. The program also stored the e-mail and Internet Protocol (IP) address of the responder as the first two fields in the survey data. Those two fields were deleted at the time of download, and the cases were subsequently de-identified. The demographic questions were

designed so that it was impossible to identify individual participants with their survey answers.

Participant Burden. Students experienced only a very slight burden to participate. No costs were associated with participation, and students were informed that they would spend no more than 12 to 15 minutes completing the survey.

Sensitivity of Issues. In the determination of risk to the participant, it was important to review the intrusiveness of the issues under analysis. Because of the manner in which the sample was drawn, all participants were over the age of consent (18 years old or older). In this research study, concerns of over-intrusiveness of the survey questions were minimized because the content and format of the survey questions generally came from other pre-existing sources. Although, at first glance, the PIL and SDTLA appear to ask a variety of personal questions, it should be noted that this instrument had been used in numerous research projects without any reported adverse affects. The demographic questions were relatively generic for surveys of this population, and are frequently asked of students at the campus of study. The additional factors asked of the participant were not very intrusive in their nature. However, in case completion of the study created a sense of unease in the participants, the final thank-you screen provided information related to university counseling and other services as a referral for the student participant. See Appendix F for the text of the final thank-you and referral screen.

Analysis of the Data. This study utilized two existing research instruments to measure developing purpose in life, the SDTLA-PUR and the PIL. Both instruments were scored according to their own parameters, and one

final score for each instrument was computed. These two scores for measuring purpose served as the dependent variables throughout the analysis of the data.

Each of the demographic data questions, and items within each of the three factor series, served as independent variables when used in appropriate statistical testing with the dependent variables. As generally accepted in social science research, a level of $p < .05$ was selected as the standard for determining significance, although lower significance levels were reported when achieved (Pallant, 2001).

For answering research question one, in which the relationship between the two dependent test score variables were determined, correlation procedures were necessary. Franzblau's (1958) standards were used to determine if the correlation was high or low. Those standards were: less than .20, regarded as little to no correlation; .40 to .60, regarded as a moderate correlation; and .80 or higher, regarded as a high degree of correlation. For the purposes of this study, a high degree of correlation was necessary to determine whether the two instruments measured purpose similarly.

Independent *t* test and Analysis of Variance (ANOVA) procedures were necessary for answering research question two, related to the impact of demographic variables on the test scores. In a determination of magnitude for these tests, Cohen's standard definitions of three levels of power were used: .01 = a small effect; .06 = a medium or moderate effect; and .14 = a large effect (Pallant, 2001).

Regression analysis procedures were necessary to analyze the independent variables included in each factor series with the two dependent test score variables to answer the final research question, involving environmental

factors and their influence on the development of purpose. Standard multiple regression procedures were used, entering all variables within a factor series into the equation simultaneously. This method calculated the significance of each independent variable to ascertain if it made a unique contribution to determining variance, as well as calculating the total amount of variance in the dependent variables that the factor series was able to explain as a block.

The data were reported using Pallant's (2001) and Nicol and Pexman's (1999) suggestions for text and tables.

Summary

The methodology of this study was guided by research and recommendations reviewed in the literature. The population definition and sample was delineated as 1,000 sophomores enrolled full-time at a large Midwestern university, stratified by four residential settings: on campus, residential college, emerging residential setting, and general off campus. The instrumentation used in this study, including the SDTLA-PUR, PIL, demographic questions, and three factor series were described. The design of the Web site itself, including a pilot test and lessons learned, were outlined. Finally, the primary data collection methodology, including the methods of contact and of increasing response rates, technological back-ups, confidentiality, participant burden, sensitivity of the issues covered, and analysis of the data were addressed.

CHAPTER IV

DATA ANALYSIS

The purpose of this study was to explore Chickering and Reisser's (1993) schema for Vector 6, Developing Purpose, and Frankl's (1959, 1979, 1984, 1997) Purpose in Life research to determine if the instruments measure the construct in similar ways. This was accomplished by the collection of student data utilizing the Student Developmental Task and Lifestyle Assessment–Purpose Form (Winston et al., 1999) and the Purpose in Life Test (Crumbaugh & Maholick, 1964) to measure Chickering and Reisser's Vector 6 and Frankl's Purpose in Life, respectively. Additionally, three series of other factors, Time Spent, Involvement, and Activities, were explored to determine their relationship to scores on the two instruments. The findings from the study are presented in this chapter.

The first section of this chapter describes the major coding procedures and decisions made, and outlines the basic descriptive statistics of the sample. The following sections present analysis of the data to explore the three research questions identified in this study.

Coding Procedures and Decisions

Data were collected over a two-week period utilizing Web-based software. Therefore, initial data entry was not necessary. The data file was downloaded and imported into SPSS, Macintosh Version 11.1. After descriptive statistics for the demographic variables were analyzed, several variable categories were reduced. Questions for the two instruments were recoded, and decisions were made about the usability of certain cases.

Analysis of Descriptive Statistics. Review of the descriptive statistics of

the sample indicated that heterogeneity was not sufficient in several demographic independent variables, which needed to be reduced. In the independent variable for Sexuality, participants indicating gay, lesbian, bisexual, or unsure/ questioning were collapsed into a single category of Non-Heterosexual, creating a dichotomous independent variable of Sexuality-Coded. There was insufficient heterogeneity in the independent variable of Race/Ethnicity for adequate analysis. Participants indicating African-American, Asian/Pacific Islander, Hispanic/Latino, International, Native American, and Other were collapsed into a single category of Under-represented Minorities (URM). Students who indicated more than one racial/ethnic identity were also coded as URM. This reduction created a new dichotomous independent variable of Race-Coded. The independent variable of Age was recoded, collapsing participants who indicated an age over 22 into a category of 22+. Finally, for the independent variable of Residence, three categories (off campus in the greater city area, off campus outside of the city, and group housing) were collapsed into one, off campus. This variable then had four distinct categories: on campus, residential college, emerging residential setting, and general off campus. The demographic factors of Race/Ethnicity, Sexuality, Class/Age, and Socioeconomic Status could not be fully investigated in this research design because of sampling limitations. Exploration of those variables would be better left to future studies with that sampling focus.

Instrument Recoding. Both the PIL and the SDTLA-PUR required recoding and computations to be usable for analysis. The PIL has 20 scaled questions, with anchors at each end of the scale indicating extremes. Several questions reversed the extreme (the more positive extreme would have originally

been coded as a 1 and the least positive extreme coded as a 7). As indicated in the design of the instrument (Crumbaugh & Maholick, 1969), the scales were reversed so that all questions had the more negative extreme on the left side of the scale and the more positive extreme on the right side of the scale. Next, counts, total scores, and averages were computed for the 20 questions on the PIL. The SDTLA-PUR was coded and computed as outlined in the manual that accompanies the instrument (Winston et al., 1999). Responses on each question had a weighted value between 1 and 5. As appropriate, each question was recoded according to the manual. Finally, counts, totals, and averages were computed for the overall SDTLA-PUR and the Response Bias Scale.

Usability Review. Although 454 students completed part of the survey, not all of those participants completed a sufficient amount of the survey to be adequate for analysis. One of the differences between online and print surveys is the online-researcher is more likely to receive a survey where the participant dropped-out before the end and submits an incomplete instrument. Participants in print surveys who do not complete the entire survey simply do not return it. Because of this methodological differences, removing incomplete cases is more important for an online survey. The SDTLA-PUR manual indicated that completed surveys should only be used when 88% of the survey was completed (Winston et al., 1999). However, review of the overall response patterns of participants indicated that a more stringent standard for removing cases based on the SDTLA-PUR would also significantly reduce missing data on the later questions. Students who completed fewer than 54 of the 57 (95%) questions on the SDTLA-PUR or fewer than 18 of the 20 (90%) PIL questions were removed from the data set. Participants who failed to complete 75% or more of the additional factor

items were removed. This allowed for cases that made a good-faith effort to complete the entire survey. Finally, participants who scored 4 or higher on the Response Bias Scale were removed, as suggested by the SDTLA-PUR manual. A total of 354 cases remained for analysis.

The SDTLA-PUR uses averages, which compensate for missing data within a particular task or subtask. The PIL, however, is computed by summing the responses on the twenty 1-to-7 scales into a final score. For cases with 18 or 19 answers on the PIL, it was decided the average of the completed responses, or two times the average score, would be added to the total for that case as appropriate for each participant to have an accurate 20-question total.

Finally, all variables were organized with labels, location in the database, value labels, to allow for easier manipulation and interpretation of output.

Sample Demographics

As previously described, 445 students attempted to complete the survey, for an initial response rate of 45%. After coding, 354 usable surveys remained, for a usable survey response rate of 35%. The number of usable cases was well within the frame suggested by Salant and Dillman (1994) for a population of this size. These response rates were significantly higher than anticipated, based on estimates provided by other researchers completing both print and Web-based surveys on the campus of study.

Descriptive statistics were computed for the demographic independent variables of Age, Race-Coded, Gender, Sexuality-Coded, Residence, and Socioeconomic Status (as indicated by receiving a Pell Grant). Women (n = 243) outnumbered men (n = 120) by more than 2:1, which is disproportionate to the number of women and men in the population of study. Under-represented

Minorities accounted for 13% (n = 47) of the cases, which is slightly lower than the percentage of Under-represented Minorities on the campus of study. Almost 4% (n = 14) indicated a sexual orientation categorized as Non-Heterosexual. Socioeconomic status was determined based on receiving a Pell Grant for the year (n = 64, 17.60%). Finally, 171 (47.10%) of the students indicated they lived in a general on-campus residence hall; 34 (9.40%) lived in a residential college; 42 (11.60%) lived in an emerging off-campus apartment complex; and the remaining 116 (32%) lived off campus. More specific information about the demographic breakdown of the participants is provided in Table 4 and 5. Chi-square analysis were completed to determine if the respondents differed statistically significantly from the population demographic statistics (Table 6). At a $p < .05$, the responders did not statistically significantly differ from the population on the demographics of age, race/ethnicity, and gender. Differences where noted for residential setting (X^2 = 10.18, df=3), with a lager percentage of residents in emerging apartments responding than appear in the population. This was expected, due to the over-sampling of students in this residential setting.

Research Question One: Are there differences in the way the PIL and SDTLA–PUR measure a student's sense of purpose in life?

Comparison of the Two Instruments. To answer the first research question, the relationship between Chickering and Reisser's (1993) Vector 6 (as measured by the SDTLA-PUR) and Frankl's (1959, 1979, 1985, 1997) purpose in life (as measured by the PIL), was investigated using Pearson product–moment correlation coefficients. Preliminary analyses were performed to ensure that the data contained no violation of the assumptions of normality and linearity (Pallant, 2000). Correlation analysis indicated a statistically significant relationship

Table 4

Demographic Breakdown of Study Participants.

Variable Source		*n*	%
Age	18 Years Old	17	4.70%
	19 Years Old	198	54.50%
	20 Years Old	114	31.40%
	21 Years Old	24	6.60%
	22+ Years Old	10	2.80%
Race/Ethnicity	Caucasian	316	87.10%
	Under Represented Minority	47	12.90%
Gender	Men	120	33.10%
	Women	243	66.90%
Sexuality	Heterosexual	348	95.60%
	Non-Heterosexual	14	3.90%
Residence	Residence Hall	171	47.10%
	Residential College	34	9.40%
	Emerging Apartment	42	11.60%
	Off-Campus	116	31.96%
Socioeconomic Status	Received Pell Grant	64	17.60%
	Did Not Receive Pell Grant	299	82.40%

Table 5

Two-Way Demographic Breakdown of Study Participants.

	18YO	19YO	20YO	21YO	22+	CAU	URM	M	F	Het	NonH	OnC	ResC	Emer	OffC
CAU	88%	88%	84%	83%	100%										
URM	12%	12%	16%	17%	0%										
M	35%	26%	37%	57%	40%	33%	26%								
F	65%	74%	63%	44%	60%	67%	75%								
Het	94%	96%	96%	100%	90%	96%	98%	96%	96%						
NonH	6%	4%	5%	0%	10%	4%	2%	4%	4%						
OnC	41%	60%	34%	26%	0%	46%	57%	46%	48%	48%	36%				
ResC	24%	9%	11%	0%	0%	10%	6%	15%	7%	9%	14%				
Emer	12%	8%	14%	30%	20%	11%	17%	8%	14%	11%	21%				
OffC	24%	24%	41%	44%	80%	34%	19%	32%	32%	32%	29%				
Pell	12%	14%	21%	22%	60%	15%	36%	18%	18%	18%	14%	18%	15%	12%	20%

Table identifies the marginal percentage of participants in two separate demographic variables.

18YO=18 Years Old; 19YO=19 Years Old; 20YO=20 Years Old; 22+=22 Years or Older; CAU=Caucasian; URM=Underrepresented Minorities; M=Male; F=Female; Het=Heterosexual; NonH=Non-Heterosexual; OnC=On-Campus Residence; ResC=Residential Colle Residence; Emer=Emerging Off-Campus Residence; OffC=General Off-Campus Residence.

Table 6

Demographic Breakdown (%) of Population and Responders of the Study

Variable Source		% Pop (n = 7653)	% Sample (n = 354)	X^2	df
Age	18 Years Old	1.19%	4.70%	3.90	4
	19 Years Old	48.46%	54.50%		
	20 Years Old	35.78%	31.40%		
	21 Years Old	10.86%	6.60%		
	22+ Years Old	3.71%	2.80%		
Race/Ethnicity	Caucasian	78.92%	87.10%	2.37	1
	Under Represented Minority	21.08%	12.90%		
Gender	Men	45.49%	33.10%	3.23	1
	Women	54.51%	66.90%		
Residence	Residence Hall	46.24%	47.10%	10.18*	3
	Residential College	6.15%	9.40%		
	Emerging Apartment	1.86%	11.60%		
	Off-Campus	45.75%	31.96%		

* $p < .05$

between scores on both tests for the study participants (r = .55, n = 359, p = .00). By common social science standards, a correlation of this magnitude indicates a moderate relationship between the two instruments. The SDTLA-PUR Instrument also provides sub-scales for measures of Career Planning, Educational Involvement, Cultural Participation, and Lifestyle Planning. Each of these four sub-scales combine to create the overall Purpose score. Correlation analysis between the PIL and each of the four sub-scales were also computed, but no greater correlation between the PIL and the sub-scales were discovered. Means, standard deviations, and intercorrelations for the PIL and the SDTLA-PUR and its four sub-scales are outlined in Table 7.

Because the authors of the SDTLA-PUR indicated that scores vary based on gender and class level (Winston et al., 1999), an additional partial correlation was computed. Class level was controlled for in the design of the study. In this second analysis, the same correlation was computed between the SDTLA-PUR and the PIL, controlled for differences by gender. Controlling for these gender differences had a negligible impact on the strength of the correlation [r = .55, n = 356, p = .00].

Comparison of Study Cases to National Norms. As nationally used instruments, both the SDTLA-PUR and the PIL have published normative estimates. Three independent t tests were conducted to compare scores of study participants with the normative data published for both instruments, as summarized in Table 8. The normative data provided by the instrument authors for the SDTLA-PUR are disaggregated by class level and gender, because of differences discovered by the authors in initial validation studies of the instrument (Winston et al., 1999). When compared to sophomores in the national normative

Table 7

Means, Standard Deviations, and Intercorrelations for the PIL and the SDTLA-PUR Tasks and Subtasks

	Measures						*M*			*SD*		
	PIL	PUR	CAR	EDI	CUL	LIF	All	F	M	All	F	M
PIL		0.55	0.47	0.46	0.18	0.58	105.59	106.70	103.28	15.25	14.75	16.06
PUR	0.55		0.86	0.87	0.55	0.84	2.85	2.88	2.80	0.56	0.56	0.56
CAR	0.47	0.86		0.68	0.20	0.75	2.87	2.90	2.81	0.76	0.75	0.79
EDI	0.46	0.87	0.68		0.39	0.62	3.07	3.08	3.05	0.77	0.76	0.79
CUL	0.19	0.55	0.20	0.39		0.22	3.51	3.54	3.45	0.90	0.87	0.97
LIF	0.58	0.84	0.76	0.62	0.23		3.38	3.43	3.29	0.77	0.78	0.76

Note: Correlation coefficients for all participants (N = 359) are presented below the diagonal. Partial correlations controlling for gender (Men = 116; Women = 243) are presented above the diagonal.

PIL = Purpose in Life Test; PUR = Student Developmental Tasks and Lifestyle Assessment (SDTLA)-Developing Purpose Task; CAR = Career Planning Subtask; EDI = Educational Involvement Subtask; CUL = Cultural Participation Subtask; LIF = Lifestyle Planning Subtask.

All coefficients are significant at $p < .00$.

Table 8

Differences Between Standard National Norms and Study Participants on the SDTLA-PUR and PIL.

	M		*SD*		*n*			
Measure	Norm	Study	Norm	Study	Norm	Study	*t*	*df*
PIL†	108.5	105.6	13.98	15.25	417	359	2.72**	774
SDTLA-PUR								
Men	3.03	2.80	0.67	0.56	143	116	3.01**	257
Women	3.13	2.88	0.66	0.56	222	243	4.44**	463

† National norm scales published for the PIL are not disaggregated by gender.

** $p < .01$.

data table, both men (M = 2.80, SD = .56), and women (M = 2.88, SD = .56) scored statistically significantly lower than the normative SDTLA-PUR scores for men (M = 3.03, SD = .67) and women, respectively [M = 3.13, SD = .66; $t_{SDTLA\text{-}men}(257) = 3.01$, $p < .01$; $t_{SDTLA\text{-}women}(463) = 4.44$, $p < .01$].

Normative scores published by Crumbaugh (1968) for the PIL are more generalized, and include a comparison group of "Undergraduate Students." Disaggregated normative data by class level and/or gender are not currently available for the PIL. The scores of the study participants (M = 105.59, SD = 15.25) were compared with the available normative scores for undergraduate students (M = 108.45, SD = 13.98). A statistically significant difference existed, with study participants scoring lower than the national normative data [$t(774) = 2.72$, $p < .01$]. The magnitude of the differences was relatively small (E^2_{PIL} = .01; $E^2_{SDTLA\text{-}men}$ = .03; $E^2_{SDTLA\text{-}Women}$ = .04).

Research Question Two: What demographic variables impact a student's sense of purpose in life, as measured by the SDTLA and the PIL?

In the review of literature, studies indicated no definitive answer related to the variance in PIL scores due to demographic variables. The authors of the SDTLA-PUR indicated that scores vary by gender and class level (Winston et al., 1999), and other studies revealed variations on demographic variables. Variation in study participants' test scores on the PIL and the SDTLA-PUR because of demographic variables was explored.

One-way ANOVA tests were conducted on PIL and SDTLA-PUR scores and on the independent variables of Age, Race-Coded, Gender, Sexuality-Coded, Residence, and Socioeconomic Status. Table 9 presents the means, standard deviations, and ANOVA outcomes for the PIL and Table 10 shows these

Table 9

Effects of Demographic Variables on PIL Score.

Variable Source	Source	*df*	*SS*	*MS*	*F*
Age	Between Groups	4	572.56	143.14	0.61
	Within Groups	354	82,670.07	233.53	
Race/Ethnicity	Between Groups	1	363.70	363.70	1.57
	Within Groups	357	82,878.92	232.15	
Gender	Between Groups	1	920.38	920.38	3.99*
	Within Groups	357	82,322.24	230.60	
Sexuality	Between Groups	1	167.07	167.07	0.72
	Within Groups	356	83,068.81	233.34	
Residence	Between Groups	3	543.26	181.09	0.78
	Within Groups	355	82,699.36	232.96	
Socioeconomics	Between Groups	1	19.44	19.44	0.08
	Within Groups	357	83,223.19	233.12	

* $p < .05$.

Table 10

Effects of Demographic Variables on SDTLA-PUR Score.

Variable	Source	*df*	*SS*	*MS*	*F*
Age	Between Groups	4	1.76	0.44	1.40
	Within Groups	354	111.03	0.31	
Race/Ethnicity	Between Groups	1	0.75	0.75	2.40
	Within Groups	357	112.04	0.31	
Gender	Between Groups	1	0.48	0.48	1.54
	Within Groups	357	112.31	0.32	
Sexuality	Between Groups	1	0.20	0.20	0.63
	Within Groups	356	112.40	0.32	
Residence	Between Groups	3	0.98	0.33	1.03
	Within Groups	355	111.81	0.32	
Socioeconomics	Between Groups	1	0.35	0.35	1.12
	Within Groups	357	112.44	0.32	

* $p < .05$

results for the SDTLA–PUR. Of the independent variables analyzed, only Gender had a statistically significant effect on the PIL score [$F(1, 357) = 3.99$, $p < .05$]. No other demographic variables showed a relationship with either test scores.

Research Question Three: What involvement or environmental factors impact a student's sense of purpose in life, as measured by the SDTLA–PUR and the PIL?

To further explore the development of purpose in college students, question three examined the relationship between environmental and involvement factors reflected by scores on the SDTLA-PUR and the PIL. Data were collected on three series of factors: hours spent in a week on certain activities (Time Spent), degree of involvement in a list of student organization themes (Involvement), and other activities of interest, as indicated in the literature (Activities). For both the PIL and the SDTLA-PUR, each factor series was entered into one of three multiple regressions for each of the two instruments. Preliminary analyses were performed to ensure the data contained no violation of the assumptions necessary for regression analysis. Tables 11-13 show the intercorrelation coefficients in the check for multicollinearity.

Time Spent Factor Series. Several variables included in the Time Spent factor series had an impact on PIL scores ($R^2 = .16$, $n = 340$, $p < .00$). More time spent on exercising ($B = 1.52$, $SEB = .65$, $p < .02$), studying ($B = 1.89$, $SEB = .65$, $p < .00$), attending parties/social events ($B = 1.44$, $SEB = .70$, $p < .04$), and spending time with friends ($B = 1.36$, $SEB = .58$, $p < .02$) had a positive and statistically significant relationship with PIL scores. Watching TV ($B = -1.54$, $SEB = .61$, $p < .01$) and playing video games ($B = -2.36$, $SEB = .73$, $p < .00$) both showed a negative and statistically significant relationship with PIL scores. A total

Table 11

Intercorrelations for the PIL and SDTLA-PUR with the Time Spent Variables.

Measure	1	2	3	4	5	6	7	8	9	10	11	12
1 PIL/SDTLA*		0.18	0.02	0.22	0.03	0.25	-0.08	-0.19	-0.08	-0.06	-0.20	0.31
2 Work-On	0.01		-0.21	-0.02	-0.02	-0.06	-0.06	-0.13	-0.03	-0.10	-0.03	0.18
3 Work-Off	0.04	-0.21		0.02	0.01	-0.12	0.04	0.02	-0.12	-0.07	-0.11	-0.09
4 Com Service	0.17	-0.02	0.02		0.17	0.17	0.10	-0.04	0.03	0.01	-0.09	0.36
5 Excercise	0.19	-0.02	0.01	0.17		0.12	0.24	0.09	0.00	0.04	0.01	0.12
6 Study	0.21	-0.06	-0.12	0.17	0.12		-0.01	-0.03	0.10	0.09	-0.14	0.19
7 Party	0.13	-0.06	0.04	0.10	0.24	-0.01		0.14	0.14	0.35	0.16	0.08
8 Watch TV	-0.13	-0.13	0.02	-0.04	0.09	-0.03	0.14		0.28	0.27	0.11	-0.11
9 Online	-0.11	-0.03	-0.12	0.03	0.00	0.10	0.14	0.28		0.49	0.23	0.09
10 Friends	0.07	-0.10	-0.07	0.01	0.04	0.09	0.35	0.27	0.49		0.16	0.09
11 Vid Games	-0.23	-0.03	-0.11	-0.09	0.01	-0.14	0.16	0.11	0.23	0.16		-0.03
12 Stu Activities	0.12	0.18	-0.09	0.36	0.12	0.19	0.08	-0.11	0.09	0.09	-0.03	

* Intercorrelations with the PIL presented below the diagonal; Interrcorrelations for the SDTLA-PUR presented above the diagonal.

Table 12

Intercorrelations for the PIL and SDTLA-PUR with the Involvement Variables.

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 PIL/SDTLA		-0.03	0.10	0.01	0.23	0.20	0.19	0.15	0.19	0.08	0.27	0.22	0.16	0.27
2 IC Athletics	0.03		0.19	-0.02	0.06	0.04	0.03	0.03	0.15	0.07	0.09	0.02	0.04	-0.04
3 Club Sports	0.09	0.19		0.08	0.15	-0.01	0.06	0.04	0.04	-0.03	0.12	0.10	0.17	0.13
4 Greek	0.03	-0.02	0.08		0.06	0.04	0.01	0.03	-0.02	0.01	0.06	-0.01	-0.01	0.07
5 Religious	0.15	0.06	0.15	0.06		0.12	0.21	0.04	0.10	0.06	0.20	0.16	0.24	0.26
6 Internation	0.13	0.04	-0.01	0.04	0.12		0.26	0.34	0.21	0.22	0.09	0.24	0.11	0.21
7 Ethnic	0.02	0.03	0.06	0.01	0.21	0.26		0.29	0.15	0.03	0.14	0.40	0.29	0.24
8 PAC	0.03	0.03	0.04	0.03	0.04	0.34	0.29		0.18	0.10	0.18	0.16	0.15	0.27
9 Music/Arts	0.03	0.15	0.04	-0.02	0.10	0.21	0.15	0.18		0.22	0.01	0.13	0.07	0.16
10 Media	0.03	0.07	-0.03	0.01	0.06	0.22	0.03	0.10	0.22		0.07	0.05	0.01	0.11
11 Academic	0.13	0.09	0.12	0.06	0.20	0.09	0.14	0.18	0.01	0.07		0.20	0.17	0.31
12 Stu Gov	0.06	0.02	0.10	-0.01	0.16	0.24	0.40	0.16	0.13	0.05	0.20		0.50	0.34
13 RHA	0.06	0.04	0.17	-0.01	0.24	0.11	0.29	0.15	0.07	0.01	0.17	0.50		0.31
14 Serv Org	0.11	-0.04	0.13	0.07	0.26	0.21	0.24	0.27	0.16	0.11	0.31	0.34	0.31	

* Intercorrelations with the PIL presented below the diagonal; Interrcorrelations for the SDTLA-PUR presented above the diagonal.

Table 13

Intercorrelations for the PIL and SDTLA-PUR with the Activities Variables.

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13
1 PIL/SDTLA		0.07	0.17	0.26	0.31	0.18	0.34	0.37	0.05	0.12	0.38	0.34	0.30
2 Rd State News	0.08		0.30	0.34	0.35	0.08	0.08	0.02	0.21	0.12	0.12	0.17	0.09
3 Rd Newspaper	0.08	0.30		0.51	0.33	0.09	0.34	0.23	0.15	0.17	0.28	0.31	0.17
4 Flyers/Brochures	0.14	0.34	0.51		0.58	0.09	0.40	0.34	0.17	0.16	0.42	0.39	0.41
5 B Boards	0.19	0.35	0.33	0.58		0.20	0.32	0.36	0.11	0.14	0.31	0.36	0.38
6 Web	0.09	0.08	0.09	0.09	0.20		0.08	0.06	0.03	0.05	0.07	0.17	0.01
7 Ed Wrkshop	0.24	0.08	0.34	0.40	0.32	0.08		0.61	0.21	0.23	0.41	0.26	0.35
8 Cultural Event	0.14	0.02	0.23	0.34	0.36	0.06	0.61		0.10	0.13	0.37	0.23	0.46
9 Watch Sports	0.13	0.21	0.15	0.17	0.11	0.03	0.21	0.10		0.35	0.16	0.07	0.20
10 Play Sports	0.15	0.12	0.17	0.16	0.14	0.05	0.23	0.13	0.35		0.15	0.16	0.28
11 Talk w/Prof	0.25	0.12	0.28	0.42	0.31	0.07	0.41	0.37	0.16	0.15		0.30	0.35
12 Dis Cur Events	0.28	0.17	0.31	0.39	0.36	0.17	0.26	0.23	0.07	0.16	0.30		0.33
13 Encouraged	0.14	0.09	0.17	0.41	0.38	0.01	0.35	0.46	0.20	0.28	0.35	0.33	

* Intercorrelations with the PIL presented below the diagonal; Interrcorrelations for the SDTLA-PUR presented above the diagonal.

of 16% of the variance in PIL scores was accounted for by these six variables.

Of the Time Spent factor series variables, four items showed a statistically significant relationship with SDTLA-PUR scores (R^2 = .21, n = 340, p < .00). Time spent working on campus (B = .01, SEB = .02, p < .01), studying (B = .01, SEB = .02, p < .00), and participating in student activities (B = .01, SEB = .02, p < .00) had a positive relationship with the SDTLA-PUR score. Playing video games (B = -.01, SEB = .03, p < .01) had a negative relationship with SDTLA-PUR scores. Over 21% of the variance in SDTLA-PUR scores are accounted for by these factors. A summary of the Time Spent regression analysis is included in Table 14.

Involvement Factor Series. A regression analysis of involvement in student organizations indicated that level of involvement in the 13 student organizations included in the survey did not have a statistically significant relationship with PIL scores (R^2 = .05, n = 340, p = .18).

Data on involvement in 13 student organizations were entered into a regression analysis with the dependent variable of the SDTLA-PUR. Several types of student organizations showed a statistically significant relationship with the SDTLA, accounting for 18% of variance in the outcome score (R^2 = .18, n = 340, p = .00). Participating in student religious organizations (B = .11, SEB = .05, p < .03), music or art organizations (B = .15, SEB = .06, p < .02), and academic or honorary organizations (B = .18, SEB = .05, p < .00), had a positive relationship with a student's SDTLA-PUR score. A summary of the Involvement regression analysis is included as Table 15.

Activities Factor Series. A regression analysis of items included in the Activities factor series and their relationship with PIL scores showed that several activities have a statistically significant relationship with PIL score (R^2 = .19, n

Table 14

Regression Analysis Summary for Time Spent Variables Predicting PIL and SDTLA-PUR Scores.

	B		*SEB*		β	
Time Spent Variables	PIL	SDTLA	PIL	SDTLA	PIL	SDTLA
Work On-Campus	0.16	0.05	0.45	0.02	0.02	0.15**
Work Off-Campus	0.16	0.02	0.41	0.02	0.02	0.07
Community Service	1.24	0.06	0.91	0.03	0.08	0.10
Exercise/Athletic Activity	1.52	0.00	0.65	0.02	0.13*	-0.01
Study/Class Attendance	1.89	0.08	0.65	0.02	0.16**	0.18**
Attending Social Evts/Parties	1.44	-0.02	0.70	0.03	0.12*	-0.05
Watching TV	-1.54	-0.04	0.61	0.02	-0.14**	-0.10
Online/Accessing Internet	-1.00	-0.01	0.56	0.02	-0.11	-0.02
Talking with Friends	1.36	0.00	0.58	0.02	0.15*	0.00
Playing Vid/Comp Games	-2.36	-0.07	0.73	0.03	-0.17**	-0.13**
Student Org./Activities	0.26	0.09	0.62	0.02	0.02	0.22**

PIL R^2 = .164 (n = 340, p < .00); SDTLA-PUR R^2 = .213 (n = 340, p < .00).

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

Table 15

Regression Analysis Summary for Involvement in Student Activities Variables Predicting PIL and SDTLA-PUR Scores.

	B		*SEB*		β	
Involvement Variables	PIL	SDTLA	PIL	SDTLA	PIL	SDTLA
Intercollegiate Athletics	0.32	-0.10	1.90	0.07	0.01	-0.08
Intramural or club sports	1.43	0.03	1.41	0.05	0.06	0.04
Social Fraternity or Sorority	-0.23	-0.03	1.34	0.05	-0.01	-0.03
Religious or interfaith groups	2.60	0.11	1.44	0.05	0.11	0.12*
International or language groups	5.46	0.16	2.77	0.10	0.12	0.10
Minority or ethnic organizations	-1.83	0.04	1.93	0.07	-0.06	0.04
Political and social action groups	-1.01	0.02	2.11	0.07	-0.03	0.01
Music or other performing arts groups	0.14	0.15	1.78	0.06	0.00	0.13*
Student newspaper, radio, TV, magazine, etc.	-2.15	-0.03	3.21	0.11	-0.04	-0.01
Pre-professional, honor or academic groups	2.11	0.18	1.55	0.05	0.08	0.18**
Campus student government	0.36	0.11	2.63	0.09	0.01	0.08
Residence hall government	-0.57	-0.01	2.24	0.08	-0.02	-0.01
Service organization	1.77	0.11	1.65	0.06	0.07	0.11

PIL R^2 = .051 (n = 340, p = .183); SDTLA-PUR R^2 = .179 (n = 340, p = .00).

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

= 340, $p < .00$). PIL scores were positively related with students' attending an educational workshop ($B = 2.46$, $SEB = .10$, $p < .01$), talking with professors outside of class time ($B = 2.00$, $SEB = .67$, $p < .00$), and discussing current events with friends ($B = 1.67$, $SEB = .63$, $p < .01$). Scores were negatively related to reading a local newspaper ($B = -1.02$, $SEB = .51$, $p < .05$). Almost 19% of the variance in SDTLA-PUR scores were accounted for by these involvement factors.

Activities included in the Activities factor series were entered into a regression analysis to determine their relationship with the dependent variable of SDTLA-PUR scores (Table 16). Three activities showed a statistically significant relationship with the SDTLA-PUR, accounting for over 31% of the variance in the score ($R^2 = .31$, $n = 340$, $p < .00$). Accessing the World Wide Web/Internet ($B = .11$, $SEB = .04$, $p < .00$), talking with a professor outside of class time ($B = .10$, $SEB = .02$, $p < .00$), and discussing current events with friends ($B = .01$, $SEB = .02$, $p < .00$), had a positive relationship with SDTLA-PUR scores.

Meta-Regression of Significant Factors. Following the completion of the regression analysis for the three factor series and the PIL and SDTLA-PUR, all of those items that were discovered to be statistically significantly related to the PIL or SDTLA-PUR were entered into a step-wise regression analysis to determine of all of the variables identified as relating to the test scores, which items had the greatest independent contribution to the resultant test-score.

For the SDTLA-PUR, talking with a professor outside of class ($B = .08$, $SEB = .02$, $p < .00$), time spent on student activities ($B = .07$, $SEB = .02$, $p < .00$), discussing current events with friends ($B = .09$, $SEB = .02$, $p < .00$), level of involvement in student academic ($B = .17$, $SEB = .05$, $p < .00$), religious ($B = .09$, $SEB = .04$, $p < .03$), and music/arts organizations ($B = .012$, $SEB = .05$, $p < .02$),

Table 16

Regression Analysis Summary for Activities Variables Predicting PIL and SDTLA-PUR Scores.

	B		*SEB*		*β*	
Activity Variables	PIL	SDTLA	PIL	SDTLA	PIL	SDTLA
Read the State News	0.12	0.00	0.52	0.02	0.02	0.00
Read Another Daily Newspaper	-1.02	-0.01	0.51	0.02	-0.13*	-0.03
Read educational flyers/brochures	-0.35	0.00	0.71	0.02	-0.04	-0.03
Read something on bulletin board†	0.32	0.02	0.67	0.02	0.08	0.07
Access the WWW/Internet	1.23	0.11	1.15	0.04	0.06	0.15**
Attend an educational wkshp/spkr†	2.46	0.05	1.00	0.03	0.18**	0.09
Attend a cultural/intellectual event†	-1.09	0.05	0.91	0.03	-0.09	0.12
Attend a sporting event as a spectator	0.45	-0.03	0.63	0.02	0.04	-0.07
Participate in a sporting event/activity	0.29	0.00	0.52	0.02	0.04	0.00
Contact professor outside of class†	2.00	0.09	0.67	0.02	0.19**	0.24**
Talk with friends about current events	1.67	0.06	0.63	0.02	0.16**	0.16**
Get encouraged to attend event/activity†	-0.31	0.04	0.63	0.02	-0.03	0.11

† Text of original question truncated for reasons of space.

PIL R^2 = .188 (n = 340, p = .00); SDTLA-PUR R^2 = .314 (n = 340, p = .00).

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

and use of the web were shown to be positively related to SDTLA-PUR scores. Only time spent playing video and computer games (B = -.07, SEB = .02, p < .00) showed a negative relationship with SDLTA-PUR scores in this final regression (R^2 = .35, p < .000). Table 17 summarizes this step-wide regression analysis.

All factors that showed as statistically significant with the PIL in the initial regression analysis were entered into a step-wise regression analysis (Table 18). Of those variables, discussing current events with friends (B = 2.19, SEB = .55, p < .00), attending educational workshops (B = 2.65, SEB = .78, p < .00), time spent exercising (B = 2.06, SEB = .60, p < .00), and talking with a professor outside of class (B = 1.42, SEB = .59, p < .02), had a positive and statistically significant contribution to PIL scores. Time spent playing video games (B = -3.37, SEB = .72, p < .00), and reading an off-campus newspaper (B = -.84, SEB = .42, p < .05), both showed a negative contribution to PIL scores (R^2 = 22, p < .00).

Summary

To prepare to answer the three research questions, data were downloaded and recoded and incomplete cases removed. A statistically significant moderate correlation between the PIL and the SDTLA-PUR was discovered. Analysis for research question two indicated that only gender had the expected statistically significant relationship with PIL scores; no other demographic influence was found on the SDTLA-PUR. Finally, three series of factors, Time Spent, Involvement, and Activities, were placed in multiple regression for both the SDTLA-PUR and the PIL. Several of the items in the three series showed statistically significant predictive power on the independent variables. These items were then placed into a final regression analysis for each test, to determine of all the items included, which had the greatest, unique contribution to the test score.

Table 17

Stepwise Regression Analysis for the SDTLA-PUR.

Model	Variables	R^2	ΔR^2	*B*	*SEB*	β	*t*	Sig.
1	(Constant)	0.15		2.39	0.07		36.31	0.00
	Talk w/Prof			0.15	0.02	0.39	7.72	0.00
2	(Constant)	0.21	0.06	2.25	0.07		32.07	0.00
	Talk w/Prof			0.13	0.02	0.34	6.77	0.00
	TM Stu Activities			0.10	0.02	0.25	4.96	0.00
3	(Constant)	0.26	0.05	1.87	0.11		17.86	0.00
	Talk w/Prof			0.10	0.02	0.27	5.41	0.00
	TM Stu Activities			0.09	0.02	0.23	4.83	0.00
	Dis Cur Events			0.09	0.02	0.23	4.69	0.00
4	(Constant)	0.30	0.04	1.66	0.11		14.55	0.00
	Talk w/Prof			0.10	0.02	0.25	5.05	0.00
	TM Stu Activities			0.08	0.02	0.19	4.01	0.00
	Dis Cur Events			0.09	0.02	0.24	4.91	0.00
	IN Academic			0.19	0.05	0.20	4.20	0.00
5	(Constant)	0.32	0.02	1.80	0.12		14.88	0.00
	Talk w/Prof			0.09	0.02	0.23	4.77	0.00
	TM Stu Activities			0.08	0.02	0.19	4.05	0.00
	Dis Cur Events			0.09	0.02	0.25	5.20	0.00
	IN Academic			0.18	0.05	0.19	4.08	0.00
	TM Vid Games			-0.07	0.02	-0.14	-3.14	0.00

Steps 1-5, or 8.

Table 17, Continued

Stepwise Regression Analysis for the SDTLA-PUR.

	(Constant)	0.33	0.01	1.66	0.13		12.63	0.00
	Talk w/Prof			0.09	0.02	0.22	4.59	0.00
	TM Stu Activities			0.07	0.02	0.18	3.82	0.00
6	Dis Cur Events			0.09	0.02	0.25	5.19	0.00
	IN Academic			0.19	0.04	0.19	4.17	0.00
	TM Vid Games			-0.07	0.02	-0.15	-3.19	0.00
	IN Music/Arts			0.13	0.05	0.12	2.59	0.01
	(Constant)	0.34	0.01	1.03	0.30		3.44	0.00
	Talk w/Prof			0.08	0.02	0.22	4.52	0.00
	TM Stu Activities			0.07	0.02	0.18	3.91	0.00
	Dis Cur Events			0.09	0.02	0.24	5.02	0.00
7	IN Academic			0.19	0.04	0.20	4.26	0.00
	TM Vid Games			-0.07	0.02	-0.14	-3.07	0.00
	IN Music/Arts			0.13	0.05	0.12	2.58	0.01
	Web			0.09	0.04	0.11	2.34	0.02
	(Constant)	0.35	0.01	0.94	0.30		3.13	0.00
	Talk w/Prof			0.08	0.02	0.21	4.45	0.00
	TM Stu Activities			0.07	0.02	0.17	3.64	0.00
	Dis Cur Events			0.09	0.02	0.23	4.91	0.00
8	IN Academic			0.17	0.05	0.18	3.84	0.00
	TM Vid Games			-0.07	0.02	-0.14	-3.12	0.00
	IN Music/Arts			0.12	0.05	0.11	2.43	0.02
	Web			0.10	0.04	0.11	2.45	0.02
	IN Religious			0.09	0.04	0.10	2.21	0.03

Table 18

Stepwise Regression Analysis for the PIL

Model	Variables	R^2	ΔR^2	*B*	*SEB*	β	*t*	Sig.
1	(Constant)	0.08		90.36	3.01		30.00	0.00
	Dis Cur Events			2.86	0.54	0.28	5.27	0.00
2	(Constant)	0.13	0.05	95.82	3.17		30.28	0.00
	Dis Cur Events			2.93	0.53	0.28	5.55	0.00
	TM Vid Games			-3.36	0.74	-0.23	-4.54	0.00
3	(Constant)	0.17	0.04	93.24	3.15		29.56	0.00
	Dis Cur Events			2.35	0.53	0.23	4.40	0.00
	TM Vid Games			-3.69	0.73	-0.25	-5.07	0.00
	Ed Wrkshop			3.00	0.73	0.21	4.12	0.00
4	(Constant)	0.20	0.03	88.76	3.39		26.17	0.00
	Dis Cur Events			2.23	0.53	0.22	4.22	0.00
	TM Vid Games			-3.69	0.72	-0.26	-5.16	0.00
	Ed Wrkshop			2.91	0.72	0.21	4.04	0.00
	TM Excercise			2.00	0.61	0.16	3.30	0.00
5	(Constant)	0.21	0.01	86.98	3.47		25.04	0.00
	Dis Cur Events			1.97	0.54	0.19	3.67	0.00
	TM Vid Games			-3.43	0.72	-0.24	-4.75	0.00
	Ed Wrkshop			2.33	0.76	0.17	3.05	0.00
	TM Excercise			1.97	0.60	0.16	3.27	0.00
	Talk w/Prof			1.27	0.59	0.12	2.15	0.03
6	(Constant)	0.22	0.01	87.46	3.47		25.22	0.00
	Dis Cur Events			2.19	0.55	0.21	4.01	0.00
	TM Vid Games			-3.37	0.72	-0.23	-4.67	0.00
	Ed Wrkshop			2.65	0.78	0.19	3.41	0.00
	TM Excercise			2.06	0.60	0.17	3.43	0.00
	Talk w/Prof			1.42	0.59	0.13	2.40	0.02
	Rd Newspaper			-0.84	0.42	-0.11	-1.98	0.05

CHAPTER V

DISCUSSION

Chickering (1969), an educational researcher in socio-developmental processes, created one of the first and most widely known and studied college student development theories. Chickering held that in an increasingly complex society, an important psychosocial developmental period had emerged, comprising the college years from age 18 to the mid-20s. "Before *Education and Identity*, little had been published about development beyond adolescence, except for writings by Sanford (1961), Erikson (1959) and Marcia (1965 and 1966)" (Reisser, 1995, p. 506). Chickering characterized the college student "as an individual in a distinct psychosocial phase defined by the emergence of certain inner needs and abilities which interact with the demands or press of the college milieu" (Edman, 1988, p. 4).

Chickering (1969) believed that the critical task for college students was the establishment of their identity, and proposed seven vectors of development through which students must progress. Chickering and Reisser (1993) later revised the seven vectors to take into account more recent research and a broader demographic base, hoping to provide "useful tools to a new generation of practitioners who want to help students become 'excellent all-rounders'" (p. 41). Chickering and Reisser's seven vectors define "major highways for journeying toward individuation—the discovery and refinement of one's unique way of being" (p. 35).

Extensive research has been conducted on the seven vectors generally and on several individual vectors (e.g., Greeley & Tinsley, 1988; Itzkowitz &

Petrie, 1986; Jordan-Cox, 1987; Polkosnik & Winston, 1989; Straub & Rodgers, 1986). Application of the vectors in student affairs practice is widespread. The area of Chickering and Reisser's (1993) work that has received the least extensive exploration is Vector 6, Developing Purpose.

Concerning Vector Six, Chickering and Reisser (1993) stated that students determine their place in society. They reasoned that "a plan becomes a map for moving from the current situation to a more desirable one, for altering status quo, for composing a life" (p. 210). They concluded that developing purpose requires establishing a plan of action that integrates vocational plans, avocational personal interests, and interpersonal and family commitments. To measure the development of purpose, Winston et al. (1999) developed the Student Developmental Task and Lifestyle Assessment–Purpose instrument.

The field of clinical psychology provides another approach to measuring purpose in life. Victor Frankl (1959, 1979, 1984, 1997) made a substantial contribution toward developing a theoretical foundation for the study of purpose in life, and has been considered the preeminent scholar on this subject in the field of psychology (Zika & Chamberlain, 1992). Frankl first explored and defined *purpose in life* in the clinical literature in the 1960s, and is generally considered the father of Logotherapy, a form of psychotherapy conceived of as *therapy through meaning* (Pytell, 2001). Frankl believed that every individual has an innate desire to develop a purpose in life, which he termed *will to meaning*. He explained, "with this we designate man's striving to fulfill as much meaning in his existence as possible, and to realize as much value in his life as possible" (Frankl, 1959, p. 161). Those who failed to experience a sense of purpose in life, he believed, were in an *existential vacuum* or *existentially frustrated*,

"that is, inner emptiness, the feeling of having lost the examining of existence and the content of life" (Frankl, 1959, p. 162). Frankl held that individuals who experienced existential frustration compensated for their lack of purpose through very risky behaviors.

Frankl believed an individual discovers meaning in several ways. The first way, which he felt was quite obvious, was "by creating a work or doing a deed" (Frankl, 1984, p. 115). Purpose could stem from an individual's work or vocation. Frankl also believed that meaning could be derived from experiencing "nature and culture" or "by experiencing another human being in his very uniqueness—by loving him" (p. 115). Finally, Frankl believed individuals found purpose even "when confronted with a hopeless situation" (p. 116)—that what matters is how a person transforms that personal tragedy into achievement.

Based on Frankl's (1953) theory of purpose in life, Crumbaugh and Maholick (1964) developed the Purpose in Life Test to measure the degree to which a person experiences a sense of purpose in life. The PIL is the instrument "most commonly used in clinical psychology [and] has been translated into at least six languages" (Moran, 2001, p. 271). The PIL has been used widely in clinical and outpatient contexts. Research in the clinical setting has established a thread of interesting relationships between the PIL and behavioral issues that student affairs professionals deal with frequently, such as substance abuse, depression, responsibility and others.

Frankl's (1959, 1979, 1984, 1997) and Chickering and Reisser's (1993) theoretical writing on developing purpose share a number of common viewpoints. Both theories contain similar definitions of *purpose*, and consider that purpose is derived from vocation or work; cultural, artistic, or recreational interests; and

interpersonal relationships or love. Both theories hold that developing a sense of purpose is a critical task for healthy development. Although both theories establish from where an individual develops a sense of purpose, neither Frankl or Chickering and Reisser provide specific examples of factors that can assist individuals in gaining that sense of purpose (Pascarella & Terenzini, 199). They differ on when developing purpose occurs, and on the placement or centrality of purpose to the total individual. Thus, the two theories appear to have more similarities than differences. However, no empirical research has been published that compares the instrument designed to assess Chickering and Reisser's (1993) Vector Six and Frankl's (1959, 1979, 1984, 1997) purpose in life.

Purpose of the Study and Research Questions

The purpose of this study was to explore Chickering and Reisser's (1993) Vector 6, Developing Purpose, as measured by the SDTLA–PUR, and Frankl's (1959) purpose in life, as measured by the PIL. Chickering and Reisser's vectors of student development are commonly used foundations for student affairs practice across the country. As the preeminent psychological scholar on the subject of purpose, Frankl provided a useful comparison by which to evaluate how the SDTLA–PUR measured Vector 6, Developing Purpose. This study examined three research questions:

1. Are there differences in the way the PIL and SDTLA–PUR measure a student's sense of purpose in life?
2. What demographic variables impact a student's sense of purpose in life, as measured by the SDTLA–PUR and the PIL?
3. What involvement or environmental factors impact a student's sense of purpose in life, as measured by the SDTLA–PUR and PIL?

Methods

A random sample of 1,000 sophomore students, enrolled full time (12 or more credit hours) at a large Midwestern university, was stratified equally by four residential settings: residence halls, residential colleges, emerging apartment communities, and general off campus. Web-based data collection methods were utilized to survey the sample participants. Participants in the study completed the Student Developmental Tasks and Lifestyle Assessment-Purpose Form (Winston et al., 1999) and the Purpose in Life Test (Crumbaugh & Maholick, 1964), provided demographic information, and indicated how they spent their time each week on a list of activities, level of involvement in a series of student organizations, and frequency of completing a list of other common activities on college campuses. Each participant was contacted three times via email, and invited to complete the instrumentation on a Web page designed specifically for survey-data collection of this nature. Participants were randomly assigned to one of two Web sites, in which the SDTLA-PUR and the PIL were reversed in sequence to minimize bias. As an incentive, participants in the study were entered into a drawing for a $150 gift certificate for their choice of a store in the local mall.

Instrumentation

Student Developmental Tasks and Lifestyle Assessment–Purpose. The purpose of the SDTLA was to assess the socio-emotional development of college students, based on Chickering's (1969) and Chickering and Reisser's (1993) vectors of college student development. Students respond to 153 multiple-choice and true–false questions in the SDTLA. The scoring of the instrument involved the assignment of different weighting values for each response option,

averaging of the student's score on the instrument, and comparison of the student's score to nationally established normative data disaggregated by class and gender. Form 1.99 includes all of the items and scores obtained for three developmental tasks: purpose, relationships, and academic autonomy. Form 2.99 includes only those 57 questions necessary for the Developing Purpose task and subtasks of the greater instrument, and was the version used in this study. Through validity testing, the scores were found to be sensitive to test–retesting, establishing growth from the freshmen to senior year (Wachs & Cooper, 2002). Additionally, Winston et al. (1999) found Pearson product corrections for all tasks in a test–retest situation to cluster around .80, $p < .01$. Those authors also established internal consistency with alpha coefficients from .88 to 62. Although the SDTLA had not been reviewed yet in the *Mental Measurements Yearbook*, the earlier versions upon which this instrument is based have been. Henning-Stout (1992) established the reliability and validity of the SDTI–2 (the earlier version from which the SDTLA evolved) in the 1992 yearbook. She concluded that the instrument was "a psychometrically sound inventory that can prove useful in program development and has potential research applications" (p. 5).

Purpose in Life Test. Based on Frankl's (1959, 1979, 1984, 1997) theory of purpose in life, Crumbaugh and Maholick (1964) developed the Purpose in Life Test to assist in measuring the degree to which a person experiences a sense of purpose in life. This instrument has three parts. Part A contains 20 items in which students rate themselves on a 7-point scale. The end points of each scale are descriptive anchors, and position 4 is labeled as neutral. A summary score for the PIL involves simply adding the rankings for each of the 20 items. Participants with higher scores are expected to have a higher degree of sense of purpose

in life. Section B involves 13 sentence completion questions, and Section C requires a free-response paragraph on personal aims and ambitions. "Part A is the only one which is routinely treated quantitatively" (Hutzell, 1987, p. 131), and was the only one used for this study. The PIL is used widely both in clinical and non-clinical populations (Hutzell and Peterson, 1986). Crumbaugh (1968), Crumbaugh and Maholick (1964), Meier and Edwards (1974), and Phillips (1980) all found support for the validity of the instrument as measuring Frankl's construct of purpose in life in relation to other similar measures of this construct, as well as in test–retesting and factorial analysis. Crumbaugh believed the measures of concurrent validity of the PIL were "in line with the level of criterion validity which can usually be obtained from a single measure of a complex trait" (p. 79). The split-half correlation of the PIL (N = 120) yielded a coefficient of .85, corrected by the Spearman-Brown formula to .92, indicating the survey was reliable.

Demographic Variables. There are a number of ways to look at the demographics of college students, depending primarily on the researcher's field of work or particular interests. The focus of this study was not the delineation of the two instruments by demographic considerations, but to more generally explore demographic variation. For this study, students were asked to manually type in their identification of age, gender/sex, and sexual orientation. The questions of race/ethnicity, residential setting, and socioeconomic status (financial aid awards used as a proxy) were delineated as articulated in Appendix A of this study.

Environmental and Involvement Factors. Three series of questions were designed to assess the involvement level and activities of student participants. Students were asked to indicate how many hours they spend each

week on a series of academic, non-academic, and personal activities. The degree of involvement and leadership in different types of student organizations was asked. Finally, the respondent was asked to indicate how often they participated in a series of specific University and non-University sponsored activities and services. These questions ranged from reading the campus newspaper to talking with a professor outside of class.

Sample

A total of 445 students attempted to complete the survey for an initial response rate of 45%. After coding and removing incomplete cases, 354 usable surveys remained, for a usable survey response rate of 35%. Of those usable surveys, women (n = 243) outnumbered by more than two times the number of men (n = 120), which is disproportionate to the number of women and men in the population of study. Underrepresented Minorities accounted for 13% (n = 47) of the cases, which is slightly lower than the percentage of Underrepresented Minorities on the campus of study. Almost 4% (n = 14) indicated a sexual orientation categorized as Non-Heterosexual. Socio-economic status was determined based on receiving a Pell Grant for the year (n = 64, 17.60%). Finally, 171 (47.10%) of the students indicated they lived in a general on-campus residence hall; 34 (9.40%) indicated they lived in a Residential College; 42 (11.60%) indicated they lived in an emerging off-campus apartment complex; and the remaining 116 (32%) indicated they lived off-campus. Chi-Square analysis to determine if the responders differed significantly from the population concluded that the sample was representative of the population for the variables of age, race/ethnicity, and gender. However, differences existed between responders and the population for residential setting, with greater representation of responders

in emerging apartments than appeared in the population. This was anticipated because of the sampling method employed (Table 19).

Major Findings

The relationship between the PIL and the SDTLA-PUR was explored through a Pearson product-moment correlation coefficient analysis. Correlation analysis indicated a statistically significant relationship between scores on both tests for the study participants [$r = .55$, $n = 359$, $p = .00$]. By common social science standards, a correlation of this magnitude would indicate that a moderate relationship existed between the two instruments. The authors of the SDTLA-PUR indicate that scores may vary based on gender and class level. (Winston et al., 1999) Class was controlled for in the design of the study by sampling only sophomore students. Statistically controlling for gender differences had a negligible impact on the strength of correlation [$r = .55$, $n = 356$, $p = .00$]. Means, standard deviations, and intercorrelations for the PIL and the SDTLA-PUR are outlined in greater detail in Table 20.

As nationally used instruments, both the SDTLA-PUR and the PIL have published normative estimates for the instruments. Three independent *t* tests were conducted to compare scores of study participants with the normative data published for both instruments, as summarized in Table 21. When compared to sophomores in the national normative SDTLA-PUR data table provided by the instrument authors (Winston et al., 1999) both men ($M = 2.80$, $SD = .56$), and women ($M = 2.88$, $SD = .56$) scored statistically significantly lower than the normative SDTLA-PUR Scores for men ($M = 3.03$, $SD = .67$) and women, respectively [$M = 3.13$, $SD = .66$; $t_{SDTLA\text{-}men}(257) = 3.01$, $p < .01$; $t_{SDTLA\text{-}women}(463) = 4.44$, $p < .01$]. Normative scores published by Crumbaugh (1968) for the PIL

Table 19

Demographic Breakdown (%) of Population and Responders of the Study

Variable Source		% Pop (n = 7653)	% Sample (n = 354)	X^2	df
Age	18 Years Old	1.19%	4.70%	3.90	4
	19 Years Old	48.46%	54.50%		
	20 Years Old	35.78%	31.40%		
	21 Years Old	10.86%	6.60%		
	22+ Years Old	3.71%	2.80%		
Race/Ethnicity	Caucasian	78.92%	87.10%	2.37	1
	Under Represented Minority	21.08%	12.90%		
Gender	Men	45.49%	33.10%	3.23	1
	Women	54.51%	66.90%		
Residence	Residence Hall	46.24%	47.10%	10.18*	3
	Residential College	6.15%	9.40%		
	Emerging Apartment	1.86%	11.60%		
	Off-Campus	45.75%	31.96%		

* $p < .05$

Table 20

Means, Standard Deviations, and Intercorrelations for the PIL and the SDTLA-PUR Tasks and Subtasks

	Measures						*M*			*SD*		
	PIL	PUR	CAR	EDI	CUL	LIF	All	F	M	All	F	M
PIL		0.55	0.47	0.46	0.18	0.58	105.59	106.70	103.28	15.25	14.75	16.06
PUR	0.55		0.86	0.87	0.55	0.84	2.85	2.88	2.80	0.56	0.56	0.56
CAR	0.47	0.86		0.68	0.20	0.75	2.87	2.90	2.81	0.76	0.75	0.79
EDI	0.46	0.87	0.68		0.39	0.62	3.07	3.08	3.05	0.77	0.76	0.79
CUL	0.19	0.55	0.20	0.39		0.22	3.51	3.54	3.45	0.90	0.87	0.97
LIF	0.58	0.84	0.76	0.62	0.23		3.38	3.43	3.29	0.77	0.78	0.76

Note: Correlation coefficients for all participants (N = 359) are presented below the diagonal. Partial correlations controlling for gender (Men = 116; Women = 243) are presented above the diagonal.

PIL = Purpose in Life Test; PUR = Student Developmental Tasks and Lifestyle Assessment (SDTLA)-Developing Purpose Task; CAR = Career Planning Subtask; EDI = Educational Involvement Subtask; CUL = Cultural Participation Subtask; LIF = Lifestyle Planning Subtask.

All coefficients are significant at $p < .00$.

Table 21

Differences Between Standard National Norms and Study Participants on the SDTLA-PUR and PIL.

	M		*SD*		*n*			
Measure	Norm	Study	Norm	Study	Norm	Study	*t*	*df*
PIL†	108.5	105.6	13.98	15.25	417	359	2.72**	774
SDTLA-PUR								
Men	3.03	2.80	0.67	0.56	143	116	3.01**	257
Women	3.13	2.88	0.66	0.56	222	243	4.44**	463

† National norm scales published for the PIL are not disaggregated by gender.

** $p < .01$.

are more generalized, and included a comparison group of "Undergraduate Students." Disaggregated normative data by class level and/or gender are not currently available for the instrument. The scores of the study participants (M = 105.59, SD = 15.25) were compared with the available normative scores for undergraduate students (M = 108.45, SD = 13.98). A statistically significant difference existed, with study participants scoring lower than the national normative data ($t(774) = 2.72$, $p < .01$). The magnitude of the differences in the means was small to moderate ($E^2_{PIL} = .01$; $E^2_{SDTLA\text{-}Men} = .03$; $E^2_{SDTLA\text{-}Women} = .04$).

One-way analysis of variance tests (ANOVA) were conducted on the scores on the PIL and the SDTLA-PUR and the independent variables of Age, Race-Coded, Gender, Sexuality-Coded, Residence, and Socio-Economic Status. Of the independent variables analyzed, only Gender had a statistically significant effect on the PIL Score $F(1, 357) = 3.99$, $p < .05$. No other demographic variables showed a relationship with either the PIL or the SDTLA-PUR Scores.

A series of regression analyses were completed to explore the influence of environmental and involvement factors related to how students spend their time, are involved in student organizations, and other activities that may impact scores on the PIL and the SDTLA-PUR. A number of factors showed a statistically significant relationship with both dependent test score variables, as summarized below and on Table 22 for the PIL and Table 23 for the SDTLA-PUR.

For the dependent variable of PIL score, three regression analyses indicated that students who spend more time exercising (B = 1.52, SEB = .65, $p < .02$), studying (B = 1.89, SEB = .65, $p < .00$), attending parties or social events (B = 1.44, SEB = .70, $p < .04$), and spending time with friends (B = 1.36, SEB = .58, $p < .02$), or who more frequently attend an educational workshop (B = 2.46,

Table 22

Regression Summary of Variables Predicting PIL Scores

Variables	*B*	*SEB*	*β*
TIME SPENT SERIES			
Exercise/Athletic Activity	1.52	0.65	0.13*
Study/Class Attendance	1.89	0.65	0.16**
Attending Social Evts/Parties	1.44	0.70	0.12*
Watching TV	-1.54	0.61	-0.14**
Talking with Friends	1.36	0.58	0.15*
Playing Vid/Comp Games	-2.36	0.73	-0.17**
INVOLVEMENT SERIES			
ACTIVITIES SERIES			
Read Another Daily Newspaper	-1.02	0.51	-0.13*
Attend an educational wkshp/spkr†	2.46	1.00	0.18**
Contact professor outside of class†	2.00	0.67	0.19**
Talk with friends about current events	1.67	0.63	0.16**

† Text of original question trunicated for reasons of space.

Only variables with $p < .05$ included in table.

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

Table 23

Regression Summary of Variables Predicting SDTLA-PUR

Variables	*B*	*SEB*	*β*
TIME SPENT SERIES			
Work On-Campus	0.05	0.02	0.15**
Study/Class Attendance	0.08	0.02	0.18**
Playing Vid/Comp Games	-0.07	0.03	-0.13**
Student Org./Activities	0.09	0.02	0.22**
INVOLVEMENT SERIES			
Religious or interfaith groups	0.11	0.05	0.12*
Music or other performing arts groups	0.15	0.06	0.13*
Pre-professional, honor or academic groups	0.18	0.05	0.18**
ACTIVITIES SERIES			
Access the WWW/Internet	0.11	0.04	0.15**
Contact professor outside of class†	0.09	0.02	0.24**
Talk with friends about current events	0.06	0.02	0.16**

† Text of original question trunicated for reasons of space.

Only variables with $p < .05$ included in table.

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

SEB = .10, $p < .01$), talk with professors outside of class time (*B* = 2.00, *SEB* = .67, $p < .00$), and discuss current events with friends (*B* = 1.67, *SEB* = .63, $p < .01$) had a higher PIL score. Watching TV (*B* = -1.54, *SEB* = .61, $p < .01$), playing video games (*B* = -2.36, *SEB* = .73, $p < .00$), and reading a local newspaper (*B* = -1.02, *SEB* = .51, $p < .05$) showed a negative and statistically significant relationship on a student's PIL score. As a block in the regression analysis, the Time Spent factors accounted for 16% of the variance and the Activities factors accounted for almost 19% of the variance in PIL scores.

The dependent variable of SDTLA-PUR score was related to a number of variables included in three regression analyses. Working on-campus (*B* = .01, *SEB* = .02, $p < .01$), studying (*B* = .01, *SEB* = .02, $p < .00$), and participating in student activities (*B* = .01, *SEB* = .02, $p < .00$), had a positive relationship with the SDTLA-PUR score. Level of participation in religious student organizations (*B* = .11, *SEB* = .05, $p < .03$), music/art organizations (*B* = .15, *SEB* = .06, $p < .02$), and academic/honorary organizations (*B* = .18, *SEB* = .05, $p < .00$), also was positively related to a student's SDTLA-PUR score. Finally, increased frequency of accessing the WWW/Internet (*B* = .11, *SEB* = .04, $p < .00$), talking with a professor outside of class time (*B* = .01, *SEB* = .02, $p < .00$), and discussing current events with friends (*B* = .01, *SEB* = .02, $p < .00$) was positively related to a student's SDTLA-PUR score. Only time spent playing video games (*B* = -.01, *SEB* = .03, $p < .01$) had a negative relationship with SDTLA-PUR scores. Variance in SDTLA-PUR scores were accounted for by the three factor series, Time Spent (21%), Involvement (18%) and Activities (31%).

Following the completion of the regression analysis for the three factor series and the PIL and SDTLA-PUR, all of those items that were discovered to

be statistically significantly related to the PIL or SDTLA-PUR were entered into a step-wise regression analysis to determine of all of the variables identified as relating to the test scores, which items had the greatest independent contribution to the resultant test-score.

For the SDTLA-PUR, talking with a professor outside of class (B = .08, SEB = .02, p < .00), time spent on student activities (B = .07, SEB = .02, p < .00), discussing current events with friends (B = .09, SEB = .02, p < .00), level of involvement in student acadmic (B = .17, SEB = .05, p < .00), religious (B = .09, SEB = .04, p < .03), and music/arts organizations (B = .012, SEB = .05, p < .02), and use of the web were shown to be positively related to SDTLA-PUR scores. Only time spent playing video and computer games (B = -.07, SEB = .02, p < .00) showed a negative relationship with SDLTA-PUR scores in this final regression (R^2 = .35, p < .000). Table 24 summarizes this step-wide regression analysis.

Similarly for the PIL Test, all factors that showed as statistically significant in the initial regression analysis were entered into a step-wise regression analysis. Of those variables, discussing current events with friends (B = 2.19, SEB = .55, p < .00), attending educational workshops (B = 2.65, SEB = .78, p < .00), time spent exercising (B = 2.06, SEB = .60, p < .00), and talking with a professor outside of class (B = 1.42, SEB = .59, p < .02), had a positive and statistically significant contribution to PIL scores. Time spent playing video games (B = -3.37, SEB = .72, p < .00), and reading an off-campus newspaper (B = -.84, SEB = .42, p < .05), both showed a negative contribution to PIL scores (R^2 = 22, p < .00). Table 25 summarizes this step-wide regression analysis.

Implications of Major Findings

This study discovered a number of important considerations for both the

Table 24

Stepwise Regression Analysis for the SDTLA-PUR.

Model	Variables	R^2	ΔR^2	*B*	*SEB*	β	*t*	Sig.
1	(Constant)	0.15		2.39	0.07		36.31	0.00
	Talk w/Prof			0.15	0.02	0.39	7.72	0.00
2	(Constant)	0.21	0.06	2.25	0.07		32.07	0.00
	Talk w/Prof			0.13	0.02	0.34	6.77	0.00
	TM Stu Activities			0.10	0.02	0.25	4.96	0.00
3	(Constant)	0.26	0.05	1.87	0.11		17.86	0.00
	Talk w/Prof			0.10	0.02	0.27	5.41	0.00
	TM Stu Activities			0.09	0.02	0.23	4.83	0.00
	Dis Cur Events			0.09	0.02	0.23	4.69	0.00
4	(Constant)	0.30	0.04	1.66	0.11		14.55	0.00
	Talk w/Prof			0.10	0.02	0.25	5.05	0.00
	TM Stu Activities			0.08	0.02	0.19	4.01	0.00
	Dis Cur Events			0.09	0.02	0.24	4.91	0.00
	IN Academic			0.19	0.05	0.20	4.20	0.00
5	(Constant)	0.32	0.02	1.80	0.12		14.88	0.00
	Talk w/Prof			0.09	0.02	0.23	4.77	0.00
	TM Stu Activities			0.08	0.02	0.19	4.05	0.00
	Dis Cur Events			0.09	0.02	0.25	5.20	0.00
	IN Academic			0.18	0.05	0.19	4.08	0.00
	TM Vid Games			-0.07	0.02	-0.14	-3.14	0.00

Steps 1-5, or 8.

Table 24, Continued

Stepwise Regression Analysis for the SDTLA-PUR.

	(Constant)	0.33	0.01	1.66	0.13		12.63	0.00
	Talk w/Prof			0.09	0.02	0.22	4.59	0.00
	TM Stu Activities			0.07	0.02	0.18	3.82	0.00
6	Dis Cur Events			0.09	0.02	0.25	5.19	0.00
	IN Academic			0.19	0.04	0.19	4.17	0.00
	TM Vid Games			-0.07	0.02	-0.15	-3.19	0.00
	IN Music/Arts			0.13	0.05	0.12	2.59	0.01
	(Constant)	0.34	0.01	1.03	0.30		3.44	0.00
	Talk w/Prof			0.08	0.02	0.22	4.52	0.00
	TM Stu Activities			0.07	0.02	0.18	3.91	0.00
	Dis Cur Events			0.09	0.02	0.24	5.02	0.00
7	IN Academic			0.19	0.04	0.20	4.26	0.00
	TM Vid Games			-0.07	0.02	-0.14	-3.07	0.00
	IN Music/Arts			0.13	0.05	0.12	2.58	0.01
	Web			0.09	0.04	0.11	2.34	0.02
	(Constant)	0.35	0.01	0.94	0.30		3.13	0.00
	Talk w/Prof			0.08	0.02	0.21	4.45	0.00
	TM Stu Activities			0.07	0.02	0.17	3.64	0.00
	Dis Cur Events			0.09	0.02	0.23	4.91	0.00
8	IN Academic			0.17	0.05	0.18	3.84	0.00
	TM Vid Games			-0.07	0.02	-0.14	-3.12	0.00
	IN Music/Arts			0.12	0.05	0.11	2.43	0.02
	Web			0.10	0.04	0.11	2.45	0.02
	IN Religious			0.09	0.04	0.10	2.21	0.03

Table 25

Stepwise Regression Analysis for the PIL

Model	Variables	R^2	ΔR^2	*B*	*SEB*	β	*t*	Sig.
1	(Constant)	0.08		90.36	3.01		30.00	0.00
	Dis Cur Events			2.86	0.54	0.28	5.27	0.00
2	(Constant)	0.13	0.05	95.82	3.17		30.28	0.00
	Dis Cur Events			2.93	0.53	0.28	5.55	0.00
	TM Vid Games			-3.36	0.74	-0.23	-4.54	0.00
3	(Constant)	0.17	0.04	93.24	3.15		29.56	0.00
	Dis Cur Events			2.35	0.53	0.23	4.40	0.00
	TM Vid Games			-3.69	0.73	-0.25	-5.07	0.00
	Ed Wrkshop			3.00	0.73	0.21	4.12	0.00
4	(Constant)	0.20	0.03	88.76	3.39		26.17	0.00
	Dis Cur Events			2.23	0.53	0.22	4.22	0.00
	TM Vid Games			-3.69	0.72	-0.26	-5.16	0.00
	Ed Wrkshop			2.91	0.72	0.21	4.04	0.00
	TM Excercise			2.00	0.61	0.16	3.30	0.00
5	(Constant)	0.21	0.01	86.98	3.47		25.04	0.00
	Dis Cur Events			1.97	0.54	0.19	3.67	0.00
	TM Vid Games			-3.43	0.72	-0.24	-4.75	0.00
	Ed Wrkshop			2.33	0.76	0.17	3.05	0.00
	TM Excercise			1.97	0.60	0.16	3.27	0.00
	Talk w/Prof			1.27	0.59	0.12	2.15	0.03
6	(Constant)	0.22	0.01	87.46	3.47		25.22	0.00
	Dis Cur Events			2.19	0.55	0.21	4.01	0.00
	TM Vid Games			-3.37	0.72	-0.23	-4.67	0.00
	Ed Wrkshop			2.65	0.78	0.19	3.41	0.00
	TM Excercise			2.06	0.60	0.17	3.43	0.00
	Talk w/Prof			1.42	0.59	0.13	2.40	0.02
	Rd Newspaper			-0.84	0.42	-0.11	-1.98	0.05

theoretical work on purpose in life and for student affairs practitioners working with students on developing that sense of purpose.

Correlation between the SDTLA–PUR and the PIL. The data analyzed in this study show that by common social science standards, the SDTLA–PUR and the PIL have a moderate degree of correlation. However, considering the similarities in the theoretical foundations of both instruments, a higher correlation was expected. Franzblau (1958) defined correlation standards as follows: less than .20, little to no correlation: .40 to .60, a moderate correlation; and .80 or higher, a high degree of correlation. This study did not achieve a correlation coefficient of .80 or higher, indicating that although the two instruments show some commonality in measuring a student's sense of purpose, they do not accurately reflect the high degree of similarity between Chickering and Reisser's (1993) and Frankl's (1959) theoretical foundations.

This finding raises important considerations for potential study including the SDTLA–PUR or the PIL, as well as further revision of the SDTLA–PUR in the future. As an established instrument in psychology, the PIL has been the standard device for assessing a person's sense of purpose. That the SDTLA–PUR and the PIL failed to achieve a high degree of correlation with each other indicates that further theoretical work is needed to ensure the instruments accurately reflect the theoretical foundation upon which they are based. Practitioners and scholars who use the SDTLA–PUR or the PIL in their work should view the resultant scores with caution, as they may not truly indicate a student's sense of purpose. If determining a student's purpose or directedness in life is of specific interest, it may be best to use multiple instruments until further exploration establishes a better method for measuring this construct.

Demographic Variation on Test Scores. Score differences on the SDTLA–PUR and the PIL based on demographic variation generally supported expectations, but also provided a few surprises. The authors of the SDTLA–PUR indicated that scores on the instrument varied based on class level and gender (Winston et al., 1999). Validation studies of the PIL indicate that this instrument also shows some variation based on gender, yet researchers have not achieved consensus on these gender differences (Crumbaugh, 1972; Crumbaugh & Maholick, 1964; Doerries, 1970; Yarnell, 1971). The data from this study support the notion that scores on the PIL vary by gender, but did not support the notion that scores on the SDTLA-PUR vary by gender, unlike the expectations of the instrument authors (Winston et. al., 1999). Because of the study design, it could not be determined whether this difference was due to a measurement issue of the instrument, or if men generally have less sense of purpose in life compared to women. Contrary to expectations articulated by the authors, class level did not impact scores on the SDTLA–PUR (Winston et al., 1999). The design of the study precluded analysis based on class level, because the sample design controlled for class. Study results showed no differences on socioeconomic status or race/ethnicity, and none were expected and supported by the validation studies reviewed on the two instruments (Crumbaugh, 1972; Crumbaugh & Maholick, 1964; Doerries, 1970; Winston et al., 1999; Yarnell, 1971) nor the theoretical writings of Chickering and Reisser (1993) and Frankl (1959, 1979, 1984, 1997).

A surprising finding based on demographic variables was that residential status had no discernible impact on developing a sense of purpose. Pascarella and Terenzini (1994) indicate that residential status impacts almost all areas

of college student development, with on-campus students generally achieving higher levels of development than off-campus students. In fact, Pascarella and Terenzini indicate that the single most consistent determinant of impact on overall measures of development is living on campus (Pascarella & Terenzini, 1991). Unlike other studies of college student development, this study did not find that residential setting had an impact on student test scores on the SDTLA–PUR and the PIL. Today, on-campus residence halls are unable to house the increasing number of students attending post-secondary institutions, and more of those students are forced to live off-campus. Because of this paradigm shift for institutions of higher education, campuses are establishing strategies to further connect off-campus students with the campus community, possibly reducing the impact of on- and off-campus residential settings on student development. Additionally, the emerging off-campus complexes reviewed in the literature are beginning to provide services more like those found in on-campus residence halls, such as educational programs, computer and fitness areas, and community ambassadors/resident advisors. The increase in services to off-campus residents by both of these trends may help to explain why residential setting did not impact scores on the SDTLA-PUR and the PIL. Exploration of the impact of residential setting for this generation of college students will be an important consideration for socio-developmental studies in the future.

Comparison of Study Scores With National Normative Data. For student affairs professionals on the campus of study, one of the important findings was the difference between the scores of study participants with the nationally established normative scores for both PIL and the SDTLA–PUR. Students on the campus of study appeared to have less sense of purpose when

compared to the nationally established normative scores for both instruments. A number of factors could account for this finding.

When the PIL is considered independently, plausible explanations for lower scores could be established from the design of the study itself. This finding may be explained by the design decision to sample only sophomores, and then comparing results to normative data including all class levels. Therefore, this finding could have been due simply to developmental differences in class levels, and lends credibility to Chickering and Reisser's (1993) assertion that developing purpose occurs later in the college career. Another explanation for the difference between the study scores and the normative scores of the PIL could be a function of generations—the normative scores for the PIL were established almost 30 years ago. Less sense of purpose in life could be generally felt by all today, when compared to U.S. society in the 1960s and 1970s.

However, for SDTLA–PUR data, neither generational differences nor development due to maturity can be considered plausible explanations for lower test scores among study participants. The normative data for the SDTLA–PUR have been established within the past five years and are disaggregated by class level to account for differences by age. Because students scored lower than the nationally established normative data for both the PIL and the SDTLA–PUR, the explanations just articulated for lower study participant scores on the PIL become less plausible. Study participants scored lower on both the PIL and the SDTLA-PUR. The nature of the SDTLA-PUR normative data accounts for the challenges in the nature of the PIL normative data previously discussed.

One possible explanation for lower scores of study participants on both instruments could be a result of institutional culture. This raises the question of if

a student's sense of purpose is affected by different institutional types, such as large, research institutions versus small, liberal arts colleges, or if purpose plays a role in the choice of the student to attend a particular institutional setting. The data from this study do not allow for analysis based on these questions.

However, the conclusion based on both PIL and SDTLA–PUR data is that students on *this* campus do generally have less sense of purpose than expected. This conclusion should be of significant concern for student affairs professionals and health educators on the campus of study. Chickering and Reisser (1993) believe that developing purpose is one of the critical vectors of development for college students. A number of studies related to the PIL indicate that less sense of purpose is related to deleterious behaviors, such as lack of self-control and responsibility (Simmons, 1980), increase in substance abuse (Padelford, 1974), and other problem behaviors. The campus of study has struggled for a number of years with the ways these issues are manifested in the campus community, including high levels of alcohol and drug use among students and several serious riots in the past five years. The general lack of a sense of purpose among students on this campus may serve as one important factor in explaining these occurrences. Staff on the campus of study should consider expanding their prevention efforts to include programs and services designed to increase a student's sense of purpose, in an effort to decrease the negative behaviors experienced by the campus community. The regression analyses of factors related to the development of purpose discussed below can assist student affairs professionals in creating programs that have been shown to influence this developmental issue.

Factors That Influence a Student's Sense of Purpose. The regression

analyses completed in this study identify a number of factors that are related to a student's sense of purpose. The outcomes of these analyses can guide student affairs professionals who are interested in having a positive impact on development of purpose in students

The findings of this study indicate that staff who work with students experiencing a lack of direction or purpose should encourage them to spend time in activities in which the students will engage with others in the campus community, a primary outcome of most research on student development (Pascarella & Terenzini, 1991). Spending more time with friends, studying, exercising, attending parties and social events, working on campus, and participating in student activities have a statistically significant positive relationship with a student's sense of purpose. Minimizing time spent watching TV and playing video games is also recommended, based on the negative relationship of those activities on the PIL and SDTLA–PUR scores. One way to summarize these findings is that activities that engage the student with others within the campus community positively relate to the development of purpose, while more isolating activities, such as watching TV and playing video games, more negatively relates to the construct. These findings are consistent with Astin's (1993) theory of student involvement.

Level of involvement in student organizations did not show any significant relationships to PIL scores, but several were significant on the SDTLA–PUR. Becoming more involved with organizations focusing on music or the arts, religion, or academic or honorary issues has a positive relationship with a student's sense of purpose, as measured by the SDTLA–PUR. In the regression previously addressed, participating in student activities had a significant

relationship with development purpose. When combined with the findings of this regression, it can generally be concluded that it is the involvement itself, not the type of student organization specifically, that is related to developing purpose. However, as shown by the specific organizations showing a statistically significant relationship with SDTLA-PUR scores, those organizations that relate to personal and future interests, and specifically academic issues and religion, are more likely to be related to the development of purpose than others.

Finally, student affairs professionals can assist students to develop a sense of purpose by planning programs and services that allow them to attend educational workshops not associated with classes, talk with professors outside of class time, and discuss current events with friends. These kinds of activities have been shown to have a positive relationship with a student's sense of purpose; providing opportunities for students to participate in such activities may support them in developing purpose.

Summary of Major Implications. This study explored three research questions related to a student's sense of purpose in life. Although a moderate correlation was discovered between the PIL and the SDTLA–PUR, a much higher degree of correlation was expected because the theoretical foundations of both instruments share so many commonalities. This study showed gender differences in PIL test scores but not in SDTLA–PUR scores. No differences based on race/ ethnicity, socioeconomic impact, or residential setting were discovered for either instrument. Professionals working on the campus of study should be concerned that the study participants scored significantly lower than the normative data established for both the PIL and SDTLA–PUR. Finally, regression analyses led to recommendations for programs and activities that student affairs professionals

could develop to produce a positive impact on students' sense of purpose.

Limitations

The study design had a number of limitations. Because the sample was limited to sophomores only, presumed development due to maturation could not be explored. In addition, because the PIL provides normative data only for undergraduates in general, any conclusions based on comparison of the sophomore study participants to the PIL's normative data must be more restricted than the widespread implications of the PIL data.

This study included only a single large, residential campus in the Midwest. The role of organizational cultural differences in student development across institutional type could not be ascertained from this research design limitation. A multiple-institution study involving various types of institutions could aid in determining the impact of institutional setting and culture on the development of purpose. Additionally, additional study of this nature may assist in determining if a student's sense of purpose develops differently in dissimilar institutional settings, or if a student's sense of purpose impacts college choice.

The sample design of this study was not intended to explore in-depth issues related to differences based on demographic variables. Scholars and staff working with specific subpopulations of the campus community, such as students of color, non-heterosexual students, or students over the traditional age, would be better served to explore purpose with sampling designs tailored to exploration of these variables. Exploring how SDTLA-PUR and PIL scores differ between these kinds of subpopulations of the campus community could assist student affairs professionals in establishing one explanatory factor to behavioral issues common among a particular subpopulation, such as fraternity/sorority members

and high levels of alcohol and substance abuse. These kinds of studies could also assist in determining focused interventions to increase the sense of purpose of members of that particular subpopulation.

Despite these limitations, the findings of this study provide support for the necessity to explore the sense of purpose in life among college students. As important theoretical foundations of the student affairs profession reveal the significance of developing purpose among students, a greater understanding of the dynamics of this construct is clearly needed.

Additional Research

This study informed the exploration of developing purpose among college students in a several ways, as discussed previously. A number of additional studies are needed to improve the practical application of this construct.

The SDTLA–PUR failed to achieve a high correlation with the PIL, indicating that the two instruments may not be measuring the same construct of purpose in life. Additional correlation study of the SDTLA–PUR with other instruments that purport to measure purpose, as well as correlation studies involving the PIL and those same measures, may assist in determining why the SDTLA–PUR and the PIL were not more strongly correlated in this study.

Normative data for the PIL, established more than 30 years ago, categorize "general undergraduate students" as a group. Contemporary normative data for the PIL is needed. A multi-institution study of students in all class levels would answer several of the critical questions raised in this study. Additionally, studies designed to identify specific factors that may disproportionately affect the development of purpose in specific subpopulations of interest in higher education, such as students of color, fraternity/sorority members, athletes, and others, could

be very useful for student affairs professionals working with those specific sub-populations.

The review of the literature indicated that a lower PIL score relates to a number of negative behaviors, while a higher PIL relates to behaviors that are more positive. Student affairs professionals often struggle with how often these negative behaviors occur and their impact on the broader campus community. Although the PIL has clearly established relationships between test scores and these behaviors, it should be noted that most of those studies used inpatient populations and/or convenience samples outside of the college context. It is important to conduct additional study of the relationship between the PIL and constructs such as alcohol and other drug use, persistence in college, involvement with activities and organizations suicidality, and major life changes. Using stronger empirical methodology with randomized samples of college students will permit the findings to be generalized to all college students with a greater degree of confidence. Similar research exploring the relationship of the SDTLA–PUR and these kinds of behaviors should be completed.

One of the greatest criticisms of Chickering and Reisser's (1993) vectors of student development is that the vectors lack specificity (Pascarella & Terenzini, 1991). Little research has been completed to lend greater clarity to Vector 6, Developing Purpose. Exploring ways to improve students' sense of purpose as measured by the SDTLA–PUR, including intervention strategies, would provide additional information to student affairs professionals as they assist the psychosocial development of their students. Intervention strategies for increasing purpose in life have been developed in the clinical psychology literature surrounding the PIL. Translating those strategies from the clinical environment

to the campus context is an important additional area of study that would benefit student affairs professionals and the students they serve.

Finally, additional study on improving response rates and refining Web-based data collection methodology is also needed. With the continued rapid expansion of the Internet and greater availability of Web-based data collection software packages, student affairs practitioners will be drawn to the many advantages of this method, but not enough direction is yet available in the literature to guide its use.

APPENDIX A

DEMOGRAPHIC QUESTIONS ASKED

The following demographic questions were asked of all participants in the survey.

1. How old are you? (please type in your age)
2. What is your race/ethnicity? (check all that apply)

   African American

   Asian/Pacific Islander

   Caucasian

   Hispanic/Latino

   International

   Native American

   Other (please specify)
3. How do you identify your sex/gender (please type in your sex/gender)
4. How do you identify your sexual orientation? (please type in your sexual orientation)
5. Where do you currently live? (Please select the one best choice)

   On-Campus Residence Hall

   Lyman Briggs/James Madison College

   Apartments in the Northern Tier of East Lansing (Melrose, Chandler, Crossing Place, Capstone Commons)

   Off-Campus House or Apartment in Greater Lansing/East Lansing Area

   Off-Campus Housing Outside of Lansing/East Lansing

   Group Housing (Greek, Co-Op, Scholarship House, etc.)
6. What kinds of financial aid did you receive this year (mark all that apply)?

   Pell Grant

MEAP Scholarship

Work Study Award

Student Loans

Merit-Based Scholarship/Fellowship other than MEAP

Other (please specify)

APPENDIX B

TIME SPENT FACTOR SERIES

The following items were included in the Time Spent Factor Series. Participants where asked to indicate the average number of hours spent each week on the list of activities, using the following scale: 1=No Time; 2=2 or less hours; 3=3-5 hours; 4=6-10 hours; 5=11-20 hours; 6= 21-30 hours; 7=31-35 hours; and 8=36 or more hours.

Work On-Campus

Work Off-Campus

Community Service

Exercise/Athletic Activity

Study/Class Attendance

Attending Social Events/Parties

Watching TV

Online/Accessing the Internet

Talking with Friends

Playing Video/Computer Games

Student Organizations/Activities

APPENDIX C

INVOLVEMENT FACTOR SERIES

The following items were included in the Involvement Factor Series. Participants where asked to indicate to what extent they participated in the following activities in the past year, using the following scale: 1=Not Involved; 2=Attended or Member; 3=Appointed Leadership Position; and 4=Elected Top 5 Leadership Position.

Intercollegiate Athletics

Intramural or club sports

Social Fraternity or Sorority

Religious or interfaith groups

International or language groups

Minority or ethnic organizations

Political and social action groups

Music or other performing arts groups

Student newspaper, radio, TV, magazine, etc.

Pre-professional, honor or academic groups

Campus student government

Residence hall government

Service organization

APPENDIX D

ACTIVITIES FACTOR SERIES

The following items were included in the Activities Factor Series. Participants where asked to how often they engaged in the list of activities, using the following scale: 1=Never; 2=Once/Semester; 3=Once/Month; 4=Twice/Month; 5=1-2 Times/Week; 6=3-4 Times/Week; and 7=Daily.

Read the State News

Read Another Daily Newspaper

Read educational flyers/brochures

Read something on a bulletin board in a campus building.

Access the WWW/Internet

Attend an educational workshop or speaker outside of a classroom setting/ requirement

Attend a cultural/intellectual event or activity on-campus.

Attend a sporting event as a spectator.

Participate in a sporting event/activity.

Contact a professor outside of a classroom setting

Talk with friends about current events.

Get encouraged by someone you know to attend an event/activity on-campus.

APPENDIX E

INFORMED CONSENT STATEMENT

The following text appeared as the initial screen on the survey, and served as the informed consent statement.

You have been selected to participate in an important study exploring MSU Students' experience of having purpose in their lives. The outcomes of this study may have significant implications for a broad range of University departments and the services they provide you and other students–from Career Services, to the Counseling Center, to Olin Health Center, to the programs provided by student organizations and Residence Life.

Your participation should take no more than 12-15 minutes from start to finish!

Participants in this study will be entered into a drawing for a $150 gift certificate to the winner's choice of Best Buy, a store in the Meridian Mall, or the Student Book Store.

Your participation in this study is completely voluntary, and will not involve any cost to you. There are several questions that are of a personal nature related to your well-being, as well as how you spend your time and involvement in on-campus activities and programs. You may withdraw from the survey at any time while you are taking it, and/or decline to answer any particular question(s) without any penalty. We hope, however, that you will spend a few minutes and help us discover ways to improve programs and services for college students.

Your privacy will be protected to the maximum extent allowable by law. This web-page will record that you have completed the survey so that we will not continue to follow-up with you and to enter you into the incentives drawing. All identifying information will be removed from your responses while it is being

downloaded. Your responses will not be identifiable in any research report or in storage of the survey responses.

If you have questions about this study, please contact Billy Molasso, Doctoral Student, at 316-1454, billym@msu.edu. You may also contact Marilyn Amey, Ph.D., Associate Professor and Committee Chair, Department of Education Administration, 432-1056, amey@msu.edu. If you have questions about your rights as a research subject you may contact, anonymously if you prefer, Peter Vasilenko, Ph.D., Chairperson of the University Committee on Research Involving Human Subjects, 202 Olds Hall, 355-2180, ucrihs@msu.edu.

By clicking next below, I voluntarily agree to participate in this study.

APPENDIX F

FINAL THANK YOU AND REFERRAL SCREEN

The text below was included on the final screen at the conclusion of the survey.

Your responses to this survey will assist us as we learn how to better provide for the needs of our students.

If this survey brought to mind things in your life that are problematic for you, one or more of the following services may be of assistance to you:

Olin Health Center • 355-4510 • olin.msu.edu

MSU Counseling Center • 355-8270 • counseling.msu.edu

Career Services and Placement •355-9510 • csp.msu.edu/index.htm

Department of Student Life • 355-8286 • studentlife.msu.edu

Thank you for your help in this study!

APPENDIX G

INITIAL INVITATION EMAIL

RE: Research Study About the Purpose in Life of MSU College Students

Dear [insert first name],

As a Michigan State University Student, you have been randomly selected to participate in an important study exploring how college students experience having purpose in their lives.

Your participation in this study is very important!

So that you may easily participate in this (6-8 or 10-12) minute survey, we have designed an easy to use web-site for you to complete at:

[web address inserted here]

Complete the survey for a chance to win a $150 gift certificate to your choice of Best Buy, a store in the Meridian Mall, or the Student Book Store (1:1000 chance to win!)!

Click the link above to go to the online survey. If your email software program does not provide links to web-pages, simply copy and paste the Web Address above to your web-browser.

The outcomes of this study may have significant implications for a broad range of University departments and the services they provide you and other students–from Career Services, to the Counseling Center, to Olin Health Center, to the programs provided by student organizations and Residence Life.

I am completing this study as part of my doctoral work in the Department of Educational Administration in the College of Education at Michigan State.

Your participation in this study is completely voluntary, and will not involve any cost to you. There are several questions that are of a personnel nature related to your well-being, as well as how you spend your time and involvement

in on-campus activities and programs. You may withdraw from the survey at any time while you are taking it, and/or decline to answer any particular question(s) without any penalty. We hope, however, that you will spend a few minutes and help us discover ways to improve programs and services for college students.

Your privacy will be protected to the maximum extent allowable by law. This web-page will record that you have completed the survey so that we will not continue to follow-up with you and to enter you into the incentives drawing. All identifying information will be removed from your responses while it is being downloaded. Your responses will not be identifiable in any research report or in storage of the survey responses.

If you have questions about this study, please contact Billy Molasso, Doctoral Student, at 316-1454, billym@msu.edu. You may also contact Marilyn Amey, Ph.D., Associate Professor and Committee Chair, Department of Education Administration, 432-1056, amey@msu.edu. If you have questions about your rights as a research subject you may contact, anonymously if you prefer, Peter Vasilenko, Ph.D., Chairperson of the University Committee on Research Involving Human Subjects, 202 Olds Hall, 355-2180, ucrihs@msu.edu.

Please note: If do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list. [unique web-page link]

APPENDIX H

REMINDER EMAIL TEXT

RE: Important! Research Study About MSU Students

Dear [insert first name],

Earlier this week, you were emailed a formal invitation to participate in an important research study. Thank you to all of those who already completed the short (6-8 or 10-12) minute online survey! If you have not completed the survey and entered the drawing for a $150 gift certificate, please do so today! The original invitation email is below.

As a Michigan State University Student, you have been randomly selected to participate in an important study exploring how college students experience having purpose in their lives.

Your participation in this study is very important!

So that you may easily participate in this (6-8 or 10-12) minute survey, we have designed an easy to use web-site for you to complete at:

[web address inserted here]

Complete the survey for a chance to win a $150 gift certificate to your choice of Best Buy, a store in the Meridian Mall, or the Student Book Store (1:1000 chance to win!)!

Click the link above to go to the online survey. If your email software program does not provide links to web-pages, simply copy and paste the Web Address above to your web-browser.

The outcomes of this study may have significant implications for a broad range of University departments and the services they provide you and other students–from Career Services, to the Counseling Center, to Olin Health Center, to the programs provided by student organizations and Residence Life.

I am completing this study as part of my doctoral work in the Department of Educational Administration in the College of Education at Michigan State.

Your participation in this study is completely voluntary, and will not involve any cost to you. There are several questions that are of a personnel nature related to your well-being, as well as how you spend your time and involvement in on-campus activities and programs. You may withdraw from the survey at any time while you are taking it, and/or decline to answer any particular question(s) without any penalty. We hope, however, that you will spend a few minutes and help us discover ways to improve programs and services for college students.

Your privacy will be protected to the maximum extent allowable by law. This web-page will record that you have completed the survey so that we will not continue to follow-up with you and to enter you into the incentives drawing. All identifying information will be removed from your responses while it is being downloaded. Your responses will not be identifiable in any research report or in storage of the survey responses.

If you have questions about this study, please contact Billy Molasso, Doctoral Student, at 316-1454, billym@msu.edu. You may also contact Marilyn Amey, Ph.D., Associate Professor and Committee Chair, Department of Education Administration, 432-1056, amey@msu.edu. If you have questions about your rights as a research subject you may contact, anonymously if you prefer, Peter Vasilenko, Ph.D., Chairperson of the University Committee on Research Involving Human Subjects, 202 Olds Hall, 355-2180, ucrihs@msu.edu.

Please note: If do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list. [unique web-page link]

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