CREATION AND VALIDATION OF THE SOCIAL WORK STUDENT SELF-APPRAISAL INVENTORY

by

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(Under the direction of PATRICK BORDNICK)

ABSTRACT

Current efforts to evaluate social work education rely on traditional outcome measures with well-known limitations (Buchan, 1991). The fact that students in both B.S.W. and M.S.W. programs continue to report feeling unprepared for practice in real world settings (DeWeaver & Kropf, 1995) and the lack of emipirical evidence showing that specific skills taught in class transfer to practice (Sowers-Hoag & Thyer, 1985) are evidence of these shortcomings. To address such problems, educators have begun to apply Bandura's (1977) construct of perceived self-efficacy to professional social work education (Cherniss, 1993; Holden, Meenaghan, Anastas, & Metrey, 2002; Koob, 1998). The social work student Self-Appraisal Inventory (SAI) was developed to provide a reliable and valid measure of perceived self-efficacy, based on current professional curriculum standards, for use specifically with social work students.

The purpose of the first phase of this study was to create and pilot test a pool of items that reflect the content of the most recent version of the Council on Social Work Education's policy and accreditation standards. Internal consistency reliability and factorial validity, using exploratory factor analysis, of the SAI were estimated in phase one. The second phase of this investigation was designed to be an initial validation of the SAI, using confirmatory factor analysis. A cross-sectional survey methodology and correlational analyses were used to investigate convergent, discriminant, and factorial construct validity and internal consistency reliability of the SAI with a non-random sample BSW and MSW students.

The results of both phases of inquiry provided good preliminary support for the reliability and validity of the social work student Self-Appraisal Inventory. Such an empirically validated self-efficacy instrument could provide a valuable onging measure of student capability in CSWE-accredited schools of social work. The SAI could be used by educators to tailor curricula and provide feedback on program strengths, potentially improving the quality of services provided by students in practice settings. Despite the need for future cross-validation studies using the SAI, the findings of this investigation suggest that the SAI would be an appropriate and effective measure of social work student self-efficacy in academic settings.

INDEX WORDS: Self-efficacy, Social work, Scale development, Instrument validation, Exploratory factor analysis, Confirmatory factor analysis

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CHAPTER 1

INTRODUCTION

Challenged to provide evidence of professional accountability and effective practice, the Council on Social Work Education (CSWE) has mandated that accredited schools of social work in the United States provide content in eight different domains: (a) social work values and ethics, (b) diversity, (c) social justice, (d) human behavior in the social environment, (e) social welfare policy and services, (f) social work practice, (g) research, and (h) field education (Council on Social Work Education, 2001). However, despite recent revisions, the CSWE Educational Policy and Accreditation Standards (EPAS) document has been a source of growing debate. Professional social work educators have questioned whether the EPAS represents a relevant, evidence-based listing of professional tasks and abilities (see Gambrill, 2002). Similarly, Buchan (1991) and others (Hull, Mather, Christopherson, & Young, 1994) have criticized the utility of traditional educational outcome measures, like grades and national licensure exams, routinely used to determine student mastery of CSWE-mandated knowledge. Such criticism is based on the fact that social work students continue to report feeling unprepared for practice in "real world" settings (DeWeaver & Kropf, 1995; Koerin & Miller, 1995), and there is little empirical evidence that social work knowledge and skills taught in classroom settings actually transfer to practice settings, such as field placements (Dickson & Bamford, 1995; Sowers-Hoag & Thyer, 1985).

The potential consequences of these academic quality-control problems cannot be overstated. In fact, the widespread perception of inadequate preparation may be characterized as a "crisis of confidence" among helping professionals, contributing to higher rates of professional burnout among social workers and the increasing number of students opting out of direct practice fields (Bush, Powell, & Herzberg, 1993; Cherniss, 1993; Figley, 1999; Yadama & Drake, 1995). To address these issues and to compliment more traditional educational outcome measures, college educators have developed alternative, multidimensional, educational outcome measures that assess cognitive variables related to personal agency as predictors of academic motivation, capacity, and performance (Bandura, 1997; Frans, 1993; Pajares, 1996, 1997; Schunk, 1995).

In particular, educators have begun to apply Bandura's (1977) construct of self-efficacy, defined as personal beliefs about one's ability to perform a defined task in a specific situation, to professional social work education. By specifically structuring social work training and education to target self-efficacy, educators hope to enhance student confidence, to mediate professional burnout, and, ultimately, to improve the quality of service provided by graduates of accredited schools of social work (Cherniss, 1993; Holden, Meenaghan, Anastas, & Metrey, 2002; Koob, 1998). Consequently, studies contributing to the development and refinement of standardized tools that can reliably assess student self-efficacy represent an important area for social work research.

In order to describe the empirical development of a new measure of social work student self-efficacy, the remainder of this chapter will focus initially on problems inherent in the one existing general measure of social work student self-efficacy (Holden, Meenaghan, Anastas, & Metrey, 2002). Subsequent discussion will focus on the purpose

of this study and the research questions generated for each phase of the investigation. Finally, this chapter will focus on a theoretical overview of classical test theory—the conceptual framework that will guide the study—and a brief statement about the remaining chapters.

Statement of Problem

Methods to enhance and measure student self-efficacy in higher education have been successfully implemented in fields ranging from nursing (Laschinger, McWilliam, & Weston, 1999), career development (Betz & Hackett, 1981; Lent, Brown, & Hackett, 1994), and medicine (Gottlieb, Mullen, & McAlister, 1987) to school counseling (Sutton & Fall, 1995) and counseling psychology (Larson & Daniels, 1998). However, there is currently only one empirically validated, multi-dimensional measure of social work self-efficacy related specifically to general professional skills. This instrument, titled the Social Work Self-Efficacy Scale (SWSE), was developed by Holden, Meenaghan, Anastas, and Metrey (2002) "to address professional practice in general"(p.117) and to create a psychometrically valid instrument that could be utilized effectively as an alternative outcome measure in the Ehrenkranz School of Social Work. Despite its broad coverage of pertinent social work skill areas, the SWSE has two important limitations: its length (e.g., 52 items) makes it potentially difficult to administer in academic settings where time is limited, and its inclusion of confusing and uninformative "double-barreled" items to assess academic knowledge, skills, and abilities limits its utility as an alternative student outcome measure. Interestingly, Bandura (2001) has indicated that such general or mislabeled instruments are of questionable utility and are primarily responsible for ambiguous research outcomes pertaining to social cognitive variables. Recognizing these

limitations, which will be discussed at length in Chapter 2 of this document, and the fact that other schools of social work may need to assess content different from the Ehrenkranz School, the authors of the SWSE have joined others (Koob, 1998; Montcalm, 1999; Wodarski, 1992) in calling for the development of a variety of new instruments to measure the construct of social work self-efficacy (Holden, Meenaghan, Anastas, & Metrey, 2002).

Purpose of the Study

The purpose of this study is to describe the development, psychometric properties, and initial validation of a new paper-and-pencil, self-report instrument designed to assess social work student self-efficacy in CSWE-accredited baccalaureate- and master's-level social work programs. This instrument, titled the social work student Self-Appraisal Inventory (SAI), will assess efficacy beliefs related specifically to the knowledge, skills, and abilities described in both the foundation and advanced curriculum content sections of the CSWE (2001) EPAS (Appendix A). The multi-dimensional SAI could be useful to those interested in empirically and systematically measuring social work student self-efficacy for the purposes of program monitoring, student outcome evaluation, and, ultimately, improving social work education and professional service provision.

From the perspective of educators, the evaluation of social work education remains a challenge (Dickson & Bamford, 1995), in part because of the difficulty of measuring practice change while students remain in an academic setting. Educators have used traditionally a variety of student-focused measures, ranging from tests and course evaluations to alumni surveys and rates of program completion, to assess the outcomes of social work training programs (Hull, Mather, Christopherson, & Young, 1994). The

limitations of these methods, however, continue to be a source of debate (Holden, Barker, Meenaghan, & Rosenberg, 1999). For example, although testing may be a useful part of student assessment, it is often "for practice certification or licensing after the educational process is completed" and therefore, "most tests currently used to assess in a major field were developed with other purposes in mind" (Buchan, 1991, p.27). In addition, student testing has been criticized for failing to promote "the more complex goals of higher education, such as creativity, integration, and conceptual understanding" (Buchan, 1991, p.27). Similarly, d'Apollonia and Abrami (as cited in Holden, Barker, Meenaghan, & Rosenberg, 1999) "report that in a prior meta-analysis they found a correlation of only .33 between student ratings of general instruction skill and student learning"(p.463).

The construct of self-efficacy, however, offers a potential solution to this problem. Student judgments of self-efficacy predict a variety of behaviors (Bandura, 1997) and have been found to impact positively clinical training outcomes for counselors (O'Brien, Heppner, Flores, & Bikos, 1997), physicians (Lorenz, Gregory, & Davis, 2000), and psychologists (Larson, Suzuki, Gillespie, Potenza, Bechtel, & Toulouse, 1992). Hence, social work students who exhibit high degrees of skill-related self-efficacy would hopefully demonstrate desirable practice outcomes. By assessing student confidence to perform successfully specific academic tasks or practice skills, social work educators can evaluate the training needs of individual learners and, simultaneously, get an overall sense of a given curriculum's success. Educators may thus improve training outcomes by targeting student beliefs through structured learning activities that emphasize successful student skill performance, the most significant influence on self-efficacy (Bandura, 1997).

From an administrative perspective, an empirically validated measure of social work self-efficacy specifically related to skill areas mandated by the CSWE EPAS could serve as a tool for program monitoring. In response to the CSWE standard of continuous program assessment and improvement, outlined in Section 8.0 and 8.1 of the EPAS (CSWE, 2001), the data generated from the periodic administration of a social work skill self-efficacy measure could be indicative of how well different topic-areas are being covered. This information might be used by administrators for ongoing program planning and revision or during the reaccreditation process, as evidence supporting the school's successful inclusion of mandated content. In fact, Buchan (1991) has recommended multidimensional approaches to student assessment as a part of any ongoing social work program monitoring and evaluation.

Research Questions

The comprehensive measurement of student self-efficacy requires the use of a brief, multi-dimensional instrument that is both concise enough to correlate with relevant classroom content and broad enough to cover the variety of subject-matter areas mandated by the CSWE. To describe the development of such an instrument, the following set of research questions was developed to guide the first phase of this study:

1. Do baccalaureate- and master's-level social work students find pilot social work student Self-Appraisal Inventory (SAI-P) items clear and understandable?
2. Which items on the SAI-P adequately discriminate among student respondents?
3. Which items on the SAI-P can be eliminated to create a shorter, more reliable measure?

4. To what degree do individual items on the SAI-P reflect the overall construct of social work student self-efficacy and the related constructs of social work policy, diversity, human behavior in the social environment, practice, ethics, and research?
5. To what extent are the SAI-P and its subscales internally consistent?

The second phase of this study was guided by the following set of research questions:

1. Which items on the social work student Self-Appraisal Inventory (SAI) adequately discriminate among student respondents?
2. Which items on the SAI can be eliminated to create a shorter, more reliable measure?
3. To what degree do individual items on the SAI reflect the overall construct of social work student self-efficacy and the related constructs of social work values, practice, policy, ethics, HBSE, and research?
4. To what degree do individual items on the SAI reflect the overall construct of social work student self-efficacy and the related constructs of social work values, practice, HBSE, and research?
5. To what extent are the SAI and its subscales internally consistent?
6. What is the relationship between the SAI and theoretically related constructs?

Conceptual Framework

The conceptual framework used to determine the psychometric properties of the social work student Self-Appraisal Inventory (SAI) is classical test theory (CTT; Spearman, 1904). The dominant methodology for test and scale development in the social

sciences (Truskosky, 1999), CTT represents a straightforward, evaluative strategy for instruments designed to assess psychological or behavioral traits/attributes. In the context of assessing latent constructs, such as perceived self-efficacy, measurement may be defined as the process of empirically matching observed scores on a given measure, such as the SAI, to a priori assumptions that define the abstract concept or latent trait. A classical measurement approach (Spearman, 1904; Truskosky, 1999) posits that observed test scores may be partitioned into two components: (a) a true score, assumed to be a stable, hypothetical value reflecting one's ability under perfect circumstances; and (b) an error term, comprised of both systematic and random elements that account for the difference between the true and observed scores. To determine the psychometric strengths of a new measurement instrument, characteristics associated with individual test scores, such as reliability and validity, are of primary interest (Spector, 1992; Springer, Abell, & Hudson, 2002).

Reliability

Reliability is considered to be the "proportion of variance in scores on the measure that is attributable to true variance on the latent trait"(Bellack & Hersen, 1998, p.31). A measure is considered to be reliable if scores consistently measure the same phenomena over time, providing reproducible findings. Formally, reliability is defined as the squared correlation between observed and true scores and is determined by estimating the error variance associated with observed scores (Springer, Abell, & Hudson, 2002). In CTT, there are essentially three approaches to measuring reliability: (a) estimating stability, (b) estimating equivalence, and (c) estimating internal consistency (Crocker & Algina, 1986).

Stability. An instrument is considered to be stable when the results obtained from repeated testing using the same sample of people are consistent (Crocker & Algina, 1986). This aspect of reliability is measured via test-retest methodology. A test-retest approach involves administering the same instrument to the same sample at two or more different times under similar conditions. If scores on the instrument from each administration are highly correlated, then they are stable and the test is considered to be reliable. Common problems with test-retest methods include error arising from subject learning or maturation, different time intervals, and varied test conditions (Nunnally & Bernstein, 1994; Springer, Abell, & Hudson, 2002). Based on these limitations, a test-retest methodology is the logical choice for evaluating the reliability of instruments that measure relatively stable, trait-like constructs, like self-esteem (Mone, Baker, & Jeffries, 1995), rather than state-like constructs such as self-efficacy (Bandura, 1997; Nunnally & Bernstein, 1994).

Equivalence. Tests are considered to be equivalent when 2 different forms of an instrument testing the same concept produce similar results (Nunnally & Bernstein, 1994). Alternate or parallel forms methodology is used to determine test equivalence and involves administering two distinct forms of an instrument, differing in wording or question design, to the same group of people at the same time. If the two forms are highly correlated, then they are judged equivalent. Typically, the development of alternate test forms is avoided due to limited research resources and time (Rubin & Babbie, 1997).

Consistency. Item homogeneity or internal consistency refers to how well the different items on a test appear to reflect the same construct (Nunnally & Bernstein, 1994; Rubin & Babbie, 1997). There are three methods of estimating internal

consistency: (a) split-half reliability, (b) inter-item correlations, and (c) coefficient alpha. When using a split-half approach, all of the test items are randomly divided into two sets that are given to one sample of people at one point in time. The total score of each half is calculated and these two scores are correlated with each other. If both halves correlate highly, the test items are considered to be reliable. When estimating inter-item correlations, the entire test is given to one sample at one point in time and the results of every item are correlated with each other. If these inter-item correlations are high, the measure is deemed reliable. The third and most popular method of estimating reliability, coefficient alpha (Cronbach, 1951; DeVellis, 1991; Rubin & Babbie, 1997), is defined as the average of all possible split-half correlations, corrected for scale length (Cronbach, 1951). Alpha coefficients may range from 0 to 1, with values equal to 0.7 or greater indicative of reliability. Cronbach's alpha may also be used to evaluate specific items and their contribution to the overall scale, as the reliability of the test may decrease when an important item is deleted (DeVellis, 1991; Clark & Watson, 1998).

Validity

Validity refers to the notion that a test or scale actually measures what it is intended to measure (Crocker & Algina, 1986; Nunnally & Bernstein, 1994). Although an instrument may reliably measure something from one instance to another, its utility is in question if the construct measured is not what one intended. For a test to be of practical and theoretical value, it is necessary to determine whether test scores are truly representative of the theoretical construct of interest (Clark & Watson, 1998; DeVellis, 1991). The four different conceptualizations of validity covered in this study are: (a) face

validity, (b) content validity, (c) criterion validity, and (d) construct validity (Crocker & Algina, 1986; Springer, Abell, & Hudson, 2002).

Face Validity. Items on a test are considered to be face valid if a sample of individuals, similar to those on whom the test will be used, judge them to be relevant to both the purpose and the knowledge that the test is intended to assess (Clark & Watson, 1998). This is often considered to be a necessary first step in achieving all other forms of validity (DeVellis, 1991; Springer, Abell, & Hudson, 2002).

Content Validity. When items on an instrument seem to accurately reflect information relevant to the construct of interest, according to a group of subject-matter experts, it is considered to have content validity. While this concept is closely related to face validity, it is differentiated by the use of expert judgment (Clark & Watson, 1998).

Criterion Validity. Criterion validity indicates that the measurement instrument can predict or agree with outcome measures or constructs similar to the construct of interest. There are two types of criterion validity: (a) predictive, and (b) concurrent (Nunnally & Bernstein, 1994). Predictive validity refers to the ability of an instrument to produce findings that predict external constructs or variables. Concurrent validity refers to the notion that an instrument produces results that agree with other constructs thought to commonly co-exist with the construct of interest (Clark & Watson, 1998; Nunnally & Bernstein, 1994).

Construct Validity. When an instrument has construct validity, the results produced by the instrument correlate with other related constructs in a logical, expected manner (Springer, Abell, & Hudson, 2002). This is considered to be the most exact and important form of validity by social scientists using classical test theory (Nunnally &

Bernstein, 1994). Carmines and Zeller (1979) have listed three steps to establishing both convergent and discriminant construct validity: (a) specification of the theoretical relationship among the concepts or constructs of interest; (b) examination of the empirical relationships between measures of the constructs of interest; and (c) subsequent interpretation of the empirical relationships in keeping with hypothesized patterns.

Summary

As part of the empirical scale development process (Springer, Abell, &Hudson, 2002), this study incorporated the concepts of face and content validity as well as initial estimates of item reliability, using Cronbach's (1951) coefficient alpha, in the pilot phase. The concept of factorial construct validity was also addressed using exploratory factor analysis. In the second phase of inquiry, construct validity was assessed in two ways: (a) by generating confirmatory factor analytic solutions for two competing models of social work student self-efficacy; and (b) by estimating both convergent and discriminant validity for the final scale (Nunnally & Bernstein, 1994; Spector, 1992). Scale and subscale reliability were calculated using coefficient alpha with a substantially larger sample than that used in the pilot phase of this study (Clark & Watson, 1998).

This chapter has provided a brief overview of the purpose and conceptual theory underlying the development of a new social work self-efficacy scale. The second chapter will review the basic tenets of Bandura's (1977, 1986) social cognitive theory, define the construct of self-efficacy, and review relevant research related to self-efficacy in social work and related fields. The third chapter will outline the empirical methodology and analytic procedures that were used to create and revise item content, assess scale reliability, and investigate the construct validity of the social work student Self-Appraisal

Inventory (SAI). The fourth chapter will present the results of both phase one and two of this study. Finally, the fifth chapter will discuss the professional and theoretical implications of the development of a reliable and valid measure of social work student self-efficacy, as well as the limitations inherent in this study and directions for future research.

CHAPTER 2

LITERATURE REVIEW

This study focused on the development of an alternative outcome measure for use in CSWE-accredited schools of social work, namely a student self-efficacy scale titled, the social work student Self-Appraisal Inventory (SAI). Although educators and researchers alike have begun practically to apply elements of Bandura's social cognitive theory (SCT) to the profession of social work, there remains considerable confusion concerning certain central constructs, such as perceived self-efficacy, throughout academia (Bandura, 2001; Pajares, 1997). This chapter, therefore, begins by reviewing the basic concepts and assumptions of SCT and differentiating the construct of perceived self-efficacy from similar expectancy beliefs. Next, this chapter will briefly review empirical findings from a variety of fields supporting the use and predictive validity of positive efficacy beliefs. This chapter will conclude by reviewing both theoretical treatments and practical outcome studies using perceived self-efficacy within the domain of social work education.

Social Cognitive Theory

In his book *Social Foundations of Thought and Action: A Social Cognitive Theory*, Albert Bandura (1986) introduced a theory of human behavior, incorporating various causal "self-beliefs," called social cognitive theory (SCT). According to Bandura (1986), SCT is based on the idea of "triadic reciprocal determinism," a model that integrates overt behavioral factors, personal factors such as cognition, and environmental

factors to explain all of human behavior. In this model, individuals possess beliefs that enable them to exercise a measure of control over their thoughts, feelings, and actions and that these cognitions and actions reciprocally influence the environment. "Triadic reciprocity" implies that all behavioral outcomes are the result of dynamic, bi-directional interactions between an individuals' self-system, their actions, and situational factors. Bandura's (1986) concept of a self-system refers to "cognitive structures that provide reference mechanisms," and a "set of sub functions for the perception, evaluation, and regulation of behavior"(p.16) that people use to help guide their actions in relation to their environment. A person's self-system is defined by five basic human capabilities: (a) symbolizing, (b) forethought, (c) vicarious learning, (d) self-regulation, and (e) self-reflection (Bandura, 1986). The interaction between these self-capabilities and the environment serves as the conceptual basis for all human behavior from a social cognitive perspective.

Basic Self-Capabilities

Symbolizing. Ones' symbolic capability is the primary mechanism by which meaning is attributed to experience (Bandura, 1986). The ability to use symbols "touches virtually every aspect of people's lives (and) provides them with a powerful means of altering and adapting to their environment"(Bandura, 1986, p.18). People draw on their knowledge of symbols to "process and transform experiences into internal models that serve as guides for future action" (p.18) and are thus mentally able to select possible courses of action based on prior experiences, to communicate effectively with others, and to "create ideas that transcend their sensory experiences" (p.18).

Forethought. Forethought regulates ones' ability to select intentionally one course of action over another. According to Bandura (1986):

> people anticipate the likely consequences of their perspective actions, they set goals for themselves, and they otherwise plan courses of action for cognized futures, for many of which established ways are not only ineffective but may also be detrimental. Through exercise of forethought, people motivate themselves and guide their actions anticipatorily. (p.19)

In concert with symbolic capabilities, the cognitive capability of forethought helps determine purposive action in relation to the environment (Bandura, 1997).

Vicarious Learning. Conceptually, vicarious capability is referred to as observational learning and is an essential construct in social cognitive theory (Bandura, 1986). Observing another's behavior and its consequences "enables people to acquire rules for generating and regulating behavioral patterns without having to form them gradually by tedious trial and error" (p.19). This "informative guidance" facilitates rapid social and cognitive development as individuals theoretically need not perform responses or directly experience consequences in order to learn new behaviors (Bandura, 1997). Unlike simple imitation, this modeling process is generative, in that the rules and cognitions acquired via observational learning result in varied behavior based on new or different circumstances.

Self-Regulation. From a social cognitive perspective, Bandura (1982, 1997) asserts that most adult behavior is the result of the ongoing process of self-reinforcement, guided by self-regulatory capabilities. Self-regulation refers to an individuals' internal evaluative reactions to their own actions. The sub-processes of self-observation,

judgment, and self-reaction influence the mechanism of self-regulation (Bandura, 1986). That is, the manner and degree to which people affect their own behavior involves the accuracy and consistency of self-observations, the judgments they make regarding their actions, choices and attributions, and, finally, the evaluative and tangible reactions to their own behavior that they develop through the self-regulatory process. Personal evaluative judgments affect how individuals value themselves and are related to the development of personal values in general and specific self-constructs, such as self-efficacy and outcome expectations (Bandura, 1977, 1997).

Self-Reflection. Intrinsically linked to self-regulatory capabilities, self-reflection is defined as an individuals' ability to use self-referent thought to modify knowledge and alter behavior (Bandura, 1986). Through reflection, individuals engage in self-evaluation and may alter their own thinking and subsequent behavior. According to Bandura (1986), "among the different aspects of self-knowledge, perhaps none is more influential in people's everyday lives than conceptions of their personal efficacy"(p.390). Theoretically serving as a mediator between knowledge and action, the concept of self-efficacy is central to SCT.

Self-efficacy

SCT asserts that self-referent thought is the primary mechanism whereby symbolic representations are converted into appropriate action. The construct of self-efficacy was introduced by Albert Bandura in 1977 with the publication of his article, *Self-efficacy: Toward a Unifying Theory of Behavior Change*. Self-efficacy is conceptually defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986,

p.391). Self-efficacy "involves a generative capability in which cognitive, social, and behavioral sub skills must be organized into integrated courses of action to serve innumerable purposes" (p.391). Considered the most influential construct affecting human agency, self-efficacy influences behavior in a number of ways:

> First, efficacy can influence choice of behavior. People are likely to engage in tasks in which they feel competent and confident and avoid those in which they do not. Second, self-efficacy beliefs help determine how much effort people will expend on an activity and how long they will persevere. The higher the sense of efficacy, the greater the effort expenditure and persistence. This function of self-efficacy helps create a type of self-fulfilling prophecy, for the perseverance associated with high efficacy is likely to lead to increased performance which in turn raises one's sense of efficacy, whereas the giving-in associated with low efficacy limits the potential for improving self perceptions. The third way that self-beliefs affect human agency is by influencing an individual's thought patterns and emotional reactions. People with low efficacy, for example, may believe that things are tougher than they really are, a belief that may foster stress and a narrow vision of how best to go about a problem. High efficacy, on the other hand, may be responsible for feelings of confidence and serenity in approaching difficult tasks. The last way in which self-efficacy affects behavior is by recognizing humans as producers rather than simply foretellers of behavior. In brief, self-confidence breeds success which in turns breeds more challenging performance; self-doubt breeds hesitancy, defeat, and failure to try.(Simon, 1999, p.30-31)

Knowledge and skill, Bandura (1986) argued, are thus poor predictors of subsequent performance, as the beliefs that people form about their capabilities and the possible outcomes of their actions mediate both motivation and the degree of confidence they have to complete a given task. Hence, an individual's behavior is better predicted by their beliefs about their capabilities than by what they are actually capable of accomplishing. This helps explain why people with similar knowledge, skills, and abilities often demonstrate different levels of performance on like tasks (Bandura, 1997).

According to Bandura (2001), self-efficacy is "not a global trait but a differentiated set of beliefs linked to a distinct realm of functioning"(p. 1) that conceptually varies along three dimensions: level, strength, and generality (Bandura, 1986, 2001). The "level" of a self-efficacy is linked to the perceived difficulty or possibility of completing a given task, whereas the "strength" of self-efficacy beliefs reflects people's confidence to perform successfully those specific tasks. For example, when the construct of perceived self-efficacy is empirically measured, respondents are often asked to select, from a list of behavioral tasks of varying difficulty, which tasks they feel capable of successfully performing and then to provide a numerical estimate of their confidence to execute each task. "Generality" refers to the extent that efficacy beliefs transfer across tasks or contexts, characterizing the range of situations in which people feel efficacious. In other words, to the extent that a respondent feels highly confident performing a particular type of task, such feelings of confidence may generalize to similar tasks.

In the context of SCT (Bandura, 1986, 1997), there are four sources of self-efficacy beliefs: (a) performance attainments, (b) vicarious experiences, (c) social

influence, and (d) physiological states. Actual performance experiences are considered to be the most influential source of efficacy information, with success increasing efficacy beliefs and failure decreasing such beliefs. Vicarious learning, discussed earlier in this chapter, is another common source of self-efficacy. Although considered a less powerful source of efficacy beliefs, Bandura (1986) noted that, "because most performances are evaluated in terms of social criteria, social comparative information figures prominently in self-efficacy appraisals" (p.400). Forms of social influence, such as verbal persuasion, can also contribute to increased performance appraisals and efficacy beliefs. "To the extent that persuasive boosts in self-efficacy lead people to try hard enough to succeed, they promote development of skills and a sense of personal self-efficacy" (p.400).

Finally, people tend to make efficacy judgments based on their level of physiological arousal, with higher efficacy associated with lower levels of physical fatigue, stress, or absence of fearful thoughts and anxiety (Bandura, 1997). Ultimately, despite the source of efficacy information, an individual must cognitively appraise each new situation and determine whether information provided by the environment will be noted and integrated as self-efficacy information. Thus, perceived self-efficacy beliefs are context-specific and "differ from other expectancy beliefs in that self-efficacy judgments are both more task- and situation-specific and in that individuals make use of these judgments in reference to some type of goal"(Pajares, 1997, p.9).

Related Constructs

In light of the proliferation of research concerning self-beliefs related to personal capabilities (Pajares, 1996,1997), it is important to explicate how the construct of perceived self-efficacy differs from related, yet distinct constructs often encountered in

the literature, such as self-concept (or self-esteem), general self-efficacy, outcome expectancies, locus of control, and optimism (Bandura, 2001).

Self-concept/self-esteem. Felson (1984) has described academic self-concept broadly as "self-perceptions of ability" while self-esteem has been likewise defined as "the overall affective evaluation of one's own worth, value, or importance"(Blascovich & Tomaka, 1991, p.115). Although many researchers use the terms self-concept and self-efficacy as synonyms (Pajares, 1997), research on student self-concept has focused on assessing general feelings of competence and self-worth related to given behaviors (Rosenberg & Kapland, 1982; Rosenthal, Moore, & Flynn, 1991), rather than situation-specific task-oriented confidence, and "the typical self-concept item 'I am quite good at mathematics'[Marsh, 1992] differs from a self-efficacy question that may begin with 'How confident are you that you can successfully…'"(Pajares, 1997, p.15-16). According to Pajares (1997), although these two constructs have a demonstrated positive association, self-efficacy measures have proven to be significantly more predictive of performance than self-concept (Pajares & Miller, 1994) or self-esteem (Mone, Baker, & Jeffries, 1995).

General Self-efficacy. Bandura (1977) has described perceived self-efficacy as a situationally-specific construct related to particular tasks or behaviors. In contrast, Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, and Rogers (1982) have proposed a trait-like construct called generalized self-efficacy. This construct is defined as "a composite of all past success and failure experiences in an individual's life" (Shelton, 1990, p.988) and is thought to be a global personality trait that affects their mastery expectations in a variety of new situations and across different behavioral domains. An example of a

general self-efficacy item might be, “When I make plans, I am certain I can make them work”(Sherer et al., 1982). Overall, the construct of general self-efficacy is considered to have less empirical support and to be less predictive of future performance than perceived self-efficacy (Bandura, 1997).

Outcome expectations. “Bandura (1986) suggests that outcome expectations are partially determined by self-efficacy in situations where outcomes are closely linked to the quality of one’s performance” (Lent, Brown, & Hackett, 1994, p.103). There are three different types of outcome expectation: (a) material expectations, (b) social expectations, and (c) self-evaluative expectations (Bandura, 1986). The first type—material outcome expectations—includes “the material costs and benefits the behavior produces” (Bandura, 2001, p.2). Social outcome expectations include both the positive and negative social reactions anticipated or elicited by a particular behavior. The third type of expectation involves the personal standards that people adopt to regulate their own behavior. “They do things that give them self-satisfaction and self-worth, and refrain from behaving in ways that breed self-dissatisfaction”(p.2). Within the framework of SCT, these anticipated outcomes depend on an individual’s beliefs concerning their performance capabilities or self-efficacy. An example of an item that assesses outcome expectations might be, “I expect to earn an ‘A’ in this course.”

Locus of control. Rotter (1966, 1975) developed the construct of locus of control to explain how individual judgments of causality or attributions, characterized as either internal or external in focus, relate to the perceived outcomes of behavior.

> The degree to which individuals perceive their own behavior as the controlling factor in receiving rewards or reinforcements is the measure of their internality.

> Internals believe that the reinforcements they receive are primarily a result of their own behavior, ability, effort, or characteristics. Individuals at the external end of the locus of control continuum attribute the control of their reinforcements to forces outside themselves: luck, chance, fate, or powerful others [Rotter, 1975]. (Brown-Autry & Langenbach, 1985, p.76-77)

Pointedly, Bandura (2001) has noted that "high locus of control does not necessarily signify a sense of empowerment and well-being"(p.2), as individuals may believe that their grades are entirely dependent on their abilities but feel bad because they lack the self-efficacy to achieve. An example of an item that reflects internal locus of control might be, "When I work hard, good things happen."

Optimism. Optimism may be defined as a set of beliefs that lead people to approach the world in an active manner (Peterson & Bossio, 1991) or as "holding a view of life events and situations that is characterized by positive thinking and by maintaining a positive attitude toward the future"(Pajares, in press, p.2). Optimism has been linked to higher levels of motivation, persistence, and performance (Seligman, 1991; Taylor & Brown, 1988) as well as academic achievement and goal setting (Buchanan & Seligman, 1995). Although "theorists have …posited that students who …hold positive expectancy beliefs about one's own competence, feelings of self-worth, and confidence in their self-regulatory strategies engage academic tasks with greater optimism than do students who devalue or doubt their abilities"(Pajares, in press, p.4), it is important to note that measures of optimism assess expectancies at a much more general level than those measuring perceived self-efficacy. An example of an optimism item might be, "Things always go right for me."

Empirical Studies of Self-Efficacy

General Overview

The construct of perceived self-efficacy has been used in research on topics ranging from addictions, mental illness, and career development to academic motivation and counselor training. In the field of alcohol and other drug abuse treatment, perceived self-efficacy has demonstrated clinical utility as a predictor of abstinence with alcohol (Jones, 2001), alcohol relapse prevention (Miller, McCrady, Abrams, & Labouvie, 1994), cocaine (Coon, Pena, & Illich, 1998), and smoking prevention (Etter, Bergman, Humair, & Perneger, 2000). In the mental health field, high self-efficacy is associated with greater ability to manage positively depressive thoughts (Bandura, 1991), ability to cope with schizophrenic behavior (McDermott, 1995), and ability to identify and overcome phobic behavior (Bandura, 1977). Further, in research using mostly college students (Betz & Hackett, 1981, 1983), studies have shown that self-efficacy beliefs are related to career choice and decisions (Lent, Brown, & Larkin, 1986) and are predictive of persistence and success in certain academic majors (Fouad & Smith, 1996; Gainor & Lent, 1998; Lent, Brown, & Hackett, 1994). Given the preceding findings, it is not surprising that numerous studies have identified self-efficacy as a mediator of successful academic performance (Pajares, 1996) and have linked the construct to improved academic effort and achievement (Schunk, 1995; Zimmerman, 1995), learning strategy use (Pintrich & DeGroot, 1990), writing ability (Zimmerman & Bandura, 1994), and mathematics problem-solving (Pajares & Kranzler, 1995). Particularly relevant to social work, Larson and Daniels (1998) have proposed an integrative social cognitive framework for counselor skill development and performance, noting that self-efficacy has been

positively associated with counselor aptitude and achievement (Larson, Suzuki, Gillespie, Potenza, Bechtel, & Toulouse, 1992), age (Alvarez, 1995), time spent receiving counseling (Newcomb & Zinner, 1993), and work experience (O'Brien, Heppner, Flores, & Bikos, 1997).

Self-Efficacy in Social Work

Pertaining to the domain of professional social work education, Bandura's (1986) SCT has been cited as a theory of human behavior well-suited for guiding social work skill development and practice in conceptual/theoretical articles and has been used to assess empirically the outcomes of social work education. In addition, a large body of research is evidence of the widespread application of SCT to social work practice with diverse client populations over the past two decades (e.g., Alter, 1996; Barber & Crisp, 1995; Bowleg, Belgrave, & Reisen, 2000; Dorfman, Holmes, & Berlin, 1996; El-Bassel, Ivanof, Schilling, Gilbert, Borne, & Chen, 1995; El-Bassel & Schilling, 1993;Gilchrist & Schinke, 1983; Guitierrez, Oh, & Gillmore, 2000; Hanson, 1999; Hanson, Cancel, & Rolon, 1994; Hill, 1998; Icard, Schilling, & El-bassel, 1995; Jackson, 2000; Jackson & Huang, 2000; Kunz & Kalil, 1999; Letendre, 1999; Levy & Bavendam, 1995; Mancoske, Standifer, & Cauley, 1994; O'Connor & Korr, 1996; Rife & Kilty, 1989-90; Roffman, Downey, Beadnell, Gordon, Craver, & Stevens, 1997; Rounds, Galinsky, & Despard, 1995; Rounds, Galinsky, & Stevens, 1991; Scharlack, 1985; and Schofield & Brown, 1999). Rather than provide a lengthy discussion of the above listed practice-oriented research, the remainder of this chapter will focus exclusively on theoretical and education-oriented literature consistent with the purpose of this dissertation: to provide

evidence supporting the development and use of a new social work student self-efficacy scale in academic settings.

Theoretical Applications. Conceptual articles focusing on SCT in social work have covered topics ranging from client-focused advocacy and empowerment to worker-focused professional knowledge development and evidence-based practice.

Over a decade ago, evidence-based arguments for the increased application of self-efficacy and social cognitive theory in social work practice settings began to appear in the professional literature. Siegel (1990) identified the construct of perceived self-efficacy as being positively related to both the amount and the quality of social work services provided to cancer patients, indicating the potential value of SCT as a theoretical framework to guide future psychosocial oncology research and practice. In a meta-analysis of health outcomes, Holden (1991) characterized social work interest in SCT as "minimal," despite the fact that a significant body of empirical evidence showed that client efficacy judgments consistently predict positive health related outcomes. Noting that "Tolson's 'metamodel' for clinical social work incorporates the self-efficacy construct in goal setting"(p.86), Holden foreshadowed later research by suggesting that the "use of self-efficacy as an assessment tool in the training of clinical personnel may prove to be a useful avenue"(p.86). Likewise, Wodarski (1992) has argued that client self-efficacy, specifically related to learning and functioning, is an empirically supported construct relevant to social work practice that may help lead to an integrated theory of human behavior.

Other authors have advocated for the use of SCT from a social justice perspective. Evans (1992) described self-efficacy as an essential component of empowerment theory

and suggested that, in combination with liberation theory, it could be "an important contribution to the struggle of oppressed people everywhere to attain the justice for which they strive"(p146). In a similar vein, Gowdy (1994) suggested that SCT may serve as a conceptual bridge between social work interventions based on client constructed knowledge or "participating consciousness" and expert-driven technical rational approaches. Indicating Bandura's emphasis on experiential learning and self-referent thought as a mediator between knowing and acting, Gowdy (1994) asserted that SCT "addressed the demystification of authority indirectly as a mitigating factor related to (Bandura's) self-efficacy framework" (Gowdy, 1994, p.368), making SCT an approach to professional knowledge development that minimizes the "adverse effects of the technical rational perspective on oppressed groups" (p.362).

Not surprisingly, the work of Gutierrez (1990, 1994, 1995) is often cited when discussing theoretical links between the construct of self-efficacy and the processes and outcomes of empowerment, particularly with women of color. As early as 1990, Gutierrez suggested that there are four psychological changes associated with the empowerment of oppressed clients, including: (a) developing a "critical" consciousness, (b) reducing self-blame, (c) assuming personal responsibility for change, and (d) increasing self-efficacy. More recently, Gutierrez has described the development of personal self-efficacy as a critical step in coping with injustice and powerlessness (Gutierrez, 1994) and has referred to self-efficacy as a component of "critical consciousness," rather than as a separate psychological process (Gutierrez, 1995). Based on this conceptual foundation linking self-efficacy with personal power, Gutierrez (1990) has outlined empowering techniques applicable to both academic and practice settings,

such as “accepting the client’s definition of the problem, identifying and building on existing strengths, engaging in a power analysis of the client’s situation, teaching specific skills, mobilizing resources (p.149),” and involving similar others (Gutierrez, 1994).

Further highlighting the ability of SCT to guide social work practice, Furstenberg and Rounds (1995) have discussed group methods that specifically encourage the development of client perceived self-efficacy. These methods included modeling behavior, creating task-focused support groups, using relaxation techniques, and use of role-playing and feedback that “credits underlying ability and effort” (p.590). Similar to recommendations provided by Gutierrez (1990, 1994), Furstenberg and Rounds (1995) stated that, in general, “social work interventions need to focus on (1) teaching skills and structuring opportunities for performance and (2) guiding observation and interpretation of behavioral performances” (p.590). Interestingly, they conclude by pointing out that,

> Social workers, too, may experience low self-efficacy when their interventions fail to produce the desired results and when their efforts to improve their working environment and the service delivery system affecting their clients come to naught. Self-efficacy interventions may help social workers address their own work situations. (p.593)

Recently, Thyer and Myers (1998) have provided a thorough, evidence-based argument for integrating social learning theory (SLT), the conceptual predecessor and foundation of Bandura’s (1986) social cognitive theory (SCT), with the eco-systems model of social work practice, a model of human behavior characterized by the reciprocal interaction between a person and their environment (Meyers, 1988). Both SLT and SCT share many of the same behavioral elements (Bandura & Walters, 1963) and it is worth

noting that many current psychology texts make little or no distinction between the two learning theories, despite Bandura's ongoing attempts to focus attention on individual cognition and agency (Simon, 1999). This common foundation, including respondent conditioning, operant conditioning, and observational learning, has provided both theories with an empirically supported base for approaching and understanding psychosocial problems routinely encountered in social work practice settings. As Thyer and Myers (1998) noted, "Over 50% of the controlled studies resulting in positive outcomes that have been published in the social work literature have been based on social learning theory" (p.44). Supporting the earlier recommendation of Wodarski (1992), Thyer and Myers (1998) argued that incorporating such empirically supported, practical theories of human behavior can help provide practitioners and researchers with "a testable theoretical framework…(and) prescriptive guidelines for social work assessment and intervention" (p.33), promoting more effective social work practice.

Marking a shift in the discussion of SCT and social work from clients to workers, Montcalm (1999) has provided a comprehensive discussion of Bandura's theory and its potential relevance to the teaching and evaluation of research skills in schools of social work. Montcalm (1999) focused on two of Bandura's key self-constructs, namely self-efficacy and outcome expectations, and noted that, "in instances where research inefficacy appears to be operating, a myriad of active mastery, diversified modeling, verbal persuasion, and anxiety reduction strategies are suggested"(p.105) to maximize learning. She concluded her discussion by calling for the development of reliable and valid measures of social work self-efficacy, particularly in the research domain.

Educational Applications. The construct of self-efficacy has demonstrated increasing relevance to social work education. Theoretical articles and empirical studies that explore the utility of social cognitive variables in training, supervising, and evaluating social work education are discussed below.

Responding to the lack of empirical evidence supporting the transfer of social work skills from training to practice (Sowers-Hoag & Thyer, 1985), Dickson and Bamford (1995) have highlighted the role of self-efficacy and other social cognitive factors, such as outcome expectancies, in promoting the transfer of knowledge and skills to new situations. Dickson and Bamford (1995) noted that the failure of social work training to transfer from school to practice may "be due to a lack of confidence amongst trainees in their ability to replicate training outcomes outside of that specialized environment" (p.96) and provide a review of literature that demonstrates how self-efficacy is the primary predictor of the acquisition and maintenance of complex interpersonal skills (see Gist, Stevens, & Bavetta, 1991; Noe, 1986). As the ability to apply skills and knowledge to new situations is considered "a crucial element of … professional competence" (p.95), Dickson and Bamford (1995) recommended that social work training maximize opportunities for active student participation and successful performance of skills, thereby promoting the development of student perceived self-efficacy.

Koob (1998) has examined the relationship between solution-focused supervision and the perceived self-efficacy of social workers. The subjects were 55 graduate and undergraduate social work students enrolled in a large, mid-western university, and their clinical supervisors. Supervisors completed the Supervisor Opinion Scale (SOS) and

students completed the Therapist Self-Efficacy Scale (TSES), both developed specifically for this study (Koob, 1998). The SOS was intended to assess Solution-Focused Supervision based on 3 assumptions: (a) "Focus on solutions, not problems;" (b) "Focus on Therapist's strengths, not weaknesses;" and (c) " Focus on multiple answers to client's issues, not single answers"(p.66). The 30-item TSES, based on university field-practicum requirements, was designed to assess the perceived task-related self-efficacy of social work students. For each performed skill, subjects score both their level—indicating whether they perform each task, yes or no—and the strength (e.g., 0 = no confidence and 100 = complete confidence). A sum score, ranging from 0 to 100, is calculated and then divided by the number of tasks performed. Higher scores correspond to higher degrees of self-efficacy (Koob, 1998). Scores on the TSES demonstrated good reliability (alpha = .84) and criterion validity, significantly correlating ($p < .05$) with 80% of items on the SOS. Results indicated that the perceived self-efficacy of therapists was significantly related to years of practice ($p = .04$), feeling empowered during supervision (e.g., a "therapist-focus" rather than client focus) ($p < .02$), and solution-oriented supervision ($p < .05$) (Koob, 1998). To determine the usefulness and generalizability of the TSES beyond this study, additional research involving a larger sample, cross-validation, and additional validity studies involving instruments with documented psychometric properties is needed.

Cauble and Thurston (2000) investigated the effects of a computer-based child-welfare training program, called Building Family Foundations (BFF), on student perceived self-efficacy related to child welfare skills. The subjects were a sample of 38 undergraduate social work students enrolled in social work practice I and II courses. In

addition to scales measuring child welfare knowledge and computer competency, the subjects completed the BFF Competency Rating Scale (CRS). This 76-item self-efficacy measure was developed specifically for the study, ensuring that item content related directly to the content provided in the BFF units. Students rated their ability to use specified child welfare skills on a 1 (very low) to 5 (very high) scale. The students were divided into two groups, with the 18 enrolled in Practice I assigned one BFF unit and the 20 enrolled in Practice II assigned to complete four BFF units. Each group completed a pre- and post-assessment for the three scales, with each scale including "control" items that related to a unit not viewed by either group. Paired-sample t-tests were used to compare the means of each group for each pair of tests. The results of the analysis showed that both groups demonstrated a significant increase in perceived self-efficacy (Practice I, $p = .01$ & Practice II, $p = .01$). However, both groups also demonstrated significant increases in mean efficacy scores related to information they did not study, that is, the control items (Practice I, $p = .05$ & Practice II, $p = .01$). Thus, the fact that students also demonstrated a significant increase in efficacy related to the control items seems to indicate that self-efficacy was influenced by some additional factor(s). Likewise, the results of this study were reported differently in two separate articles (see Cauble & Thurston, 2000 & Thurston & Cauble, 1999), making a clear understanding of the procedure and results difficult. Based on the inherent limitations of this study (i.e., no control/comparison group, unvalidated scale, small N) and conflicting documentation in the literature, the use of the study findings and the CRS self-efficacy scale are questionable and there is no way to be certain that any observed change is reliable, valid, or associated with the BFF computer program.

Williams, King, and Koob (2002) examined the relationship between participation in a service-learning field experience and perceived self-efficacy related to social work skills. In this study, a non-random sample of 24 graduate social work students volunteered to serve as counselors in a one-week camp for children who are burn survivors. Students completed the Social Work Self-Efficacy Scale (SWSES) both before and after the service-learning experience. The SWSES is a 47-item self-report measure designed to assess the level and strength of perceived self-efficacy related to basic social work tasks, hypothetically corresponding to micro, mezzo, and macro practice levels (Williams, King, & Koob, 2002). Item content was developed specifically for this project, based on Koob's (1998) TSES and the 1994 Council on Social Work Education curriculum standards (Council on Social Work Education, 1994). Respondents indicated whether they use a particular skill with a yes or no and, for each skill utilized, they indicate their relative confidence, consistent with Bandura's (1977) traditional measurement recommendations. No attempt was made to assess systematically the internal consistency, reliability, or validity of the SWSES, although both face and content validity are evident (Williams, King, & Koob, 2002). This study found that scores on the SWSES increased significantly following the completion of the service-learning course ($p < .001$). Although the SWSES represents an ambitious exploratory effort to define and assess the construct of social work skill self-efficacy, several problems seriously limit the clinical and academic utility of the instrument: the lack of rigorous item development, inadequate reliability and validity data, and methodological limitations, such as small sample size and lack of a control or comparison group (Williams, King, & Koob, 2002).

Cuzzi, Holden, Rutter, Rosenberg, and Chernack (1996) measured the construct of perceived self-efficacy in a 9 month evaluation comparing full-time and sequential-placement social work field experiences in a hospital setting. This pilot study, which involved a purposive, non-random sample of 25 master's level social work students, primarily women, assessed student perceived self-efficacy at 4 different times throughout the year using the Hospital Social Work Self-efficacy Scale (HSES) (Cuzzi, Holden, Rutter, Rosenberg, & Chernack, 1996; Holden, Cuzzi, Rutter, Rosenberg, & Chernack, 1996). The HSES, developed specifically for the study, is a 39-item scale with five sub-scales: (a) patient groups, (b) written communications, (c) team performance, (d) critical case tasks, and (e) stress management. Reflecting typical hospital social work tasks, item content was initially developed by the primary researchers and further clarified using interviews with a group of nine social workers familiar with hospital social work. Students rate how confident they are that they can perform a given task on a 9-point Likert scale, with responses ranging from "not at all confident" to "totally confident." Higher scores on the HSES are indicative of higher levels of hospital skill self-efficacy (Holden, Cuzzi, Rutter, Rosenberg, & Chernack, 1996). The HSES demonstrated good internal reliability (Cronbach's alpha ranging from .90 to .96) and fair test-retest reliability (ranging from .57 to .77) over the four measurement periods. The HSES correlated as predicted with a general self-efficacy measure ($r = .44$) and with a scale measuring perceptions of the work environment ($r = -.05$), providing preliminary evidence of construct validity (Holden, Cuzzi, Rutter, Rosenberg, & Chernack, 1996). To determine the impact of field instruction in a hospital setting on student self-efficacy, paired sample t-tests were used to compare the mean self-efficacy ratings of both the full-

time and the sequential-placement groups together at both pretest and posttest. Results indicated that, while there was no significant increase in general self-efficacy, overall student self-efficacy regarding hospital social work significantly increased. Also, three of the five sub-scales (e.g., patient groups, written communication, and stress management) showed a significant improvement following the field experience.

Using the Hospital Social Work Self-Efficacy Scale (HSES), a replication study comparing traditional year-long field placements with 10-week rotation based experiences of a non-random sample of 23 master's level social work students was conducted by Cuzzi, Holden, Chernack, Rutter, and Rosenberg (1997). As in the pilot study, significant increases in hospital social work self-efficacy were found regarding written communication and stress management ($p = .004$). However, no significant increases were found in overall self-efficacy as measured by the HSES. Regarding the psychometric properties of the HSES, this replication produced internal reliability scores similar to those in the initial study, with Cronbach's alpha ranging from .90 to .98 (Holden, Cuzzi, Rutter, Chernack, & Rosenberg, 1997). While the HSES demonstrated convergent validity similar to the pilot study (general self-efficacy, $r = .37$), the correlation with a measure of work environment perceptions differed from the previous occasion ($r = .16$), indicating a change in discriminant validity (Holden, Cuzzi, Rutter, Chernack, & Rosenberg, 1997).

Holden, Cuzzi, Rutter, Chernack, Spitzer, and Rosenberg (1997) conducted a second replication-extension study utilizing the HSES with a non-random sample of 21 graduate students and 19 professional social workers at two different hospitals. In addition to the inclusion of social work staff, this replication used Fran's (1993) social

work empowerment scale (SWE) to assess convergent validity, employed different sub-scales of a work environment perception scale for testing discriminant validity, and gathered data at a single point in time instead of multiple points throughout the year. Results indicated that staff were more confident than students on 35 of the 39 items, with the greatest difference (staff, M = 8.0 & student, M = 6.3) being the perceived confidence to "manage the feelings that you will have when patients or families blame you for things going wrong"(Holden, et al., 1997, p.260). The HSES demonstrated expected internal reliability for both the subscales (average Cronbach's alpha = .80) and for the overall scale (Cronbach's alpha = .90). Convergent validity was in the hypothesized direction (r = .66) although the size of the association between the HSES and the SWE was larger than the expected .40. The direction of the correlations between the work environment sub-scales and the HSES were also in the hypothesized direction (e.g., clarity sub-scale r = .16 & physical comfort sub-scale r = .25), providing evidence of discriminant validity. The overall results of this replication lend support to the notion that the HSES is a useful outcome measure for social work hospital self-efficacy. However, despite the rigorous process of item development and test replication for the HSES, any existing psychometric information concerning reliability and validity is severely compromised by the fact that each study was based on extremely small samples, with dependent variables (i.e., scale items) outnumbering subjects in each study (see Clark & Watson, 1998; Nunnally & Bernstein, 1994; Spector, 1992) Thus, validation studies involving more subjects are needed before the HSES can be viewed as truly reliable or valid.

The Research Self-Efficacy (RSE) scale was developed by Holden, Barker, Meenaghan, and Rosenberg (1999) to measure student confidence to complete

foundation-level social work research activities. The psychometric properties of this nine-item scale were explored using a pre-post assessment of a final sample of 71 MSW students enrolled in different sections of a required two-semester research sequence at New York University's Ehrenkranz School of Social Work. RSE item content reflects discrete tasks typical of those required by Master's level social work students. Respondents rate their confidence for each RSE item using an 11-point scale, ranging from 0 = cannot do at all to 100 = certain can do, with higher overall scores indicating greater research self-efficacy. The authors report that the RSE takes "approximately five minutes to complete" and that "its readability estimate is Flesch-Kincaid Grade Level 11.2" (Holden, Barker, Meenaghan, & Rosenberg, 1999, p. 467).

In order to provide evidence of RSE construct validity, responses on the RSE were compared to two additional scales included in the measurement package: (a) the Social Work Self-Efficacy scale (SWSE), and (b) Fran's (1993) Social Work Empowerment scale. The 33-item SWSE, based on the Practice Skills Inventory (PSI) created by O'Hare and Collins (1997), was developed by Holden, Barker, Meenaghan, and Rosenberg (1999) to measure social work student confidence to complete specific professional practice tasks. The authors noted that:

> On the SWSE, respondents indicate how confident they are today in their ability to successfully perform each task using the same 11-point scale used for the RSE. Respondents are told to consider "successfully" as meaning that they would be able to perform the specific task in a manner that an experienced supervisor would think was excellent. The SWSE takes approximately 10-12 minutes to

complete. The SWSE's readability estimate is Flesch-Kincaid Grade Level 7.1. (Holden, Barker, Meenaghan, & Rosenberg, 1999, p.468)

In order to test a priori assumptions concerning student research efficacy and empowerment, Holden, Barker, Meenaghan, and Rosenberg (1999) outlined four hypothetical predictions: (a) "the total scale score on the RSE would be only slightly higher" (p.468) for undergrad science majors than non-science majors; (b) there would be a "moderate to large correlation between the RSE total scale scores and the SWSE total"(p.468); (c) "moderate to large correlation between the RSE total scale score and the SWE total"(p.468); and (d) "that particular SWE subscales would demonstrate different levels of association with the RSE total scale score"(p.468). Following the two-semester research sequence, all students demonstrated a significant increase in research self-efficacy ($p = .005$), as measured by total RSE scores, with the pretest mean = 53.3 and the overall posttest mean = 74.4. The RSE demonstrated good internal consistency, with Cronbach's alpha = .94 at both measurement points. Subsequent factor analysis indicated that "a single factor explains approximately 68% of the total variance" (p.469) and, "in terms of sensitivity to change, none of the confidence intervals for the difference scores…contained zero"(p.469- 471). Holden, Barker, Meenaghan, and Rosenberg (1999) also found good evidence of RSE construct validity, as five of the eight hypothetical predictions concerning student performance were supported ($p = .05$). The two notable exceptions were that undergraduate science majors actually had lower scores on the RSE than non-science majors and that the SWE self-concept sub-scale did not correlate with scores on the RSE.

Based on Bandura's (2001) guide for efficacy scale construction, Holden, Barker, Meenaghan, and Rosenberg's (1999) RSE scale has many strengths: (a) it measures "confidence" to perform specific, discrete tasks, clearly meeting the definition of a "self-efficacy" measure; (b) it is brief and focused, having only nine items, and thus practical to administer in class settings; (c) the items refer to specific tasks rather than broad content areas, providing specific information about student knowledge/perceptions and thereby increasing the scale's predictive value; and (d) it uses an 11-point Likert-scale, with indicators labeled to reflect "certainty" levels, thus increasing the potential variability of responses. One significant weakness of the measure is the fact that at least five of the nine items are "double-barreled," asking students to provide one efficacy judgment for essentially two tasks. For example, item three asks students to "review a particular area of social science theory" and then asks them to "write a balanced and comprehensive review"(Holden, Barker, Meenaghan, & Rosenberg, 1999, p.470). Such ambiguous items decrease the predictive and practical value of an efficacy measure (Bandura, 2001). Another possible weakness is that the title of the scale incorporates the word "self-efficacy," a factor that Bandura (2001) argued may increase subject response bias. Overall, however, the RSE appears to be the best-designed, validated, and potentially the most predictive measure of social work self-efficacy to date.

Recently, Holden, Meenaghan, Anastas, and Metrey (2002) reported the development of the Social Work Self-Efficacy Scale (SWSE), apparently a modified version of the SWSE scale described previously in Holden, Barker, Meenaghan, and Rosenberg (1999). This version of the SWSE was developed to assess "self-efficacy regarding social work practice more generally...regarding a broad range of social work

tasks. The SWSE addresses professional practice in general"(Holden, Meenaghan, Anastas, & Metrey, 2002, p.117), rather than focusing on a particular knowledge area (i.e., the RSE) or practice setting (i.e., the HSWSE). Item content for this 52-item version of the SWSE was drawn from two distinct sources: subject matter experts and a pre-existing scale (e.g., the Practice Skills Inventory) (O'Hare & Collins, 1997). In order to develop content related to the five basic curricular areas covered at the Ehrenkranz School of Social Work (e.g., practice, HBSE, field, policy, and research), the chairperson for each of these areas was asked to "generate a list of important skills that students are expected to obtain in their area"(Holden, Meenaghan, Anastas, & Metrey, 2002, p.117). These lists were then converted into 19 efficacy items by the authors of the SWSE and arranged, a priori, to form the Ehrenkranz School of Social Work (ESSW) subscale. The second source was the 33-item Practice Skills Inventory (PSI) developed by O'Hare and Collins (1997). Holden et al.(2002) reported that "Based on the rationale that the PSI constituted an independently derived set of important practice tasks, we converted PSI items into the self-efficacy items that form the SWSE-PSI subscale"(p.117). Ultimately, 64% of the items on the SWSE scale reflect discrete social work practice skills or tasks originally identified by the PSI, while the remainder of items focus on general knowledge and abilities related to academic and therapeutic processes.

To evaluate the psychometric properties of the SWSE, Holden, Meenaghan, Anastas, and Metrey (2002) used a pretest posttest design with Ehrenkranz MSW program students present for a group admission orientation. A posttest only design was used for students not present at this orientation. Data from two cohorts of students were combined to evaluate instrument properties. The authors reported that:

> The first cohort in the current study consisted of 173 entering students at pretest and 322 students at posttest when they were graduating in the spring of 1999. The second cohort in the current study consisted of 220 students at pretest and 328 students at posttest when they were graduating in the spring of 2000. (Holden, Meenaghan, Anastas, & Metrey, 2002, p.118)

Results were reported for both the 1999 and the 2000 cohorts for individual items and overall pretest posttest mean differences. Both the class of ’99 and ’00 students reported feeling most confident about their ability to: (a) “employ empathy to help clients feel that they can trust you”(Holden, Meenaghan, Anastas, & Metrey, 2002, p.120), and (b) “provide emotional support for clients”(p.120). Both classes reported feeling least confident about their ability to: (a) “analyze a critical piece of welfare legislation”(p.120), (b) “evaluate their own practice using an appropriate research method”(p.120), and (c) “ participate in using research methods to address problems encountered in practice and agency settings”(p.120). Similarly, both cohorts reported feeling more confident regarding the discrete practice-oriented items drawn from the PSI than they did about the general academic items developed by the ESSW chairpersons. Overall, the total SWSE scale and its subscales demonstrated good internal consistency, with Cronbach’s alphas meeting or exceeding .93 for each cohort. The SWSE also demonstrated sensitivity to change. Students that supplied both pre-and post-assessment data demonstrated significant increases in self-efficacy scores ($p < .00178$) over time.

As a potential measure of social work educational outcomes related to general practice skills, the SWSE developed by Holden, Meenaghan, Anastas, and Metrey (2002) has a number of strengths. First, the SWSE scale empirically assesses each student’s

"confidence" to execute given courses of action directly related to social work practice. Thus, as a self-report measure of self-efficacy, the SWSE scale by-passes problems associated more traditional, unidimensional outcome assessments, such as program completion rates, grades, and licensing exam results (Buchan, 1991). Second, the item content adapted from the PSI is discrete, focused, and comprehensive, allowing students to make more accurate efficacy judgments and, thereby, improving the predictive value of the scale as a whole (Bandura, 2001). Third, the scale uses an 11-point Likert format that allows for improved sensitivity and reliability compared to scales that use fewer response points (Pajares, Hartley, & Valiante, 2001). Finally, by covering a broad range of social work tasks, knowledge, and abilities, student scores on the SWSE scale may be informative from an academic policy perspective, guiding modifications to curriculum content and delivery, particularly in areas directly related to practice.

However, based on Bandura's (2001) published guide for self-efficacy scale construction, the SWSE has several serious shortcomings. Foremost among these is the fact that the ESSW subscale items are, almost without exception, extremely ambiguous or "double-barreled," meaning essentially that they ask for too many judgments or responses per item. One example of an ambiguous item is item 5 (e.g. "Intervene effectively with individuals"), which asks a respondent to make a broad efficacy judgment regarding their ability to intervene with every possible individual and to do so effectively. If a response to this vague item was of any practical value, we could simply have students answer item 5 and forget the rest of the scale. The solution to this type of item, according to Bandura (1997, 2001), is to break the desired behavior (i.e., "effective intervention with every individual") down into its component tasks, as the items adapted from the PSI do. An

example of a "double-barreled" item is number 3: "apply developmental, behavioral science, and social theories in your work with individuals, groups, and families"(Holden, Meenaghan, Anastas, & Metrey, 2002, p.121). How should a student who feels highly confident applying developmental theories with individuals respond without claiming to know something about behaviorism, social theories, group work, or families? The fact that the items designed to assess academic efficacy beliefs are vague and "double-barreled" seriously limits the utility of the SWSE as an alternative student outcome measure (Bandura, 2001).

A second major shortcoming is the fact that, at 52 items, the SWSE is quite lengthy (Clark & Watson, 1998; Springer, Abell, & Hudson, 2002). In academic settings, time is typically in short supply. As the SWSE was designed to be an alternative outcome measure for use in academic settings, its practical application is restricted by the length of time required for students to complete the measure. Notably, instruments of such length may increase respondent reactivity and potential response-set bias (Bandura, 2001; Clark & Watson, 1998). Finally, Bandura (2001) recommended that efficacy scales avoid the use of the term "self-efficacy" in the title, as this may also contribute to respondent reactivity.

Summary

This chapter reviewed a large body of empirical research relevant to the development of a new self-efficacy measure. These studies suggest that Bandura's (1986) SCT, and the construct of self-efficacy, can effectively be used to examine outcomes of social work practice and education. Based on this body of evidence and the shortcomings of the only other general academic self-efficacy measure in the field of social work (e.g.,

the SWSE), it is apparent that the development of an empirically sound, multi-dimensional measure of social work student perceived self-efficacy, specifically focusing on CSWE mandated professional knowledge and skills, is justified.

CHAPTER 3

METHODOLOGY

Overview

The development of the social work student Self-Appraisal Inventory (SAI) followed guidelines for scale construction outlined in the professional literature by authors such as Clark and Watson (1998), DeVellis (1991), Spector (1992), and Springer, Abell, and Hudson (2002). Essentially, there are five different steps required to design conceptually and to validate psychometrically a new scale: (a) identifying and defining the construct to be measured; (b) preliminary scale design, including item formulation and selection of an appropriate measurement format; (c) expert assessment of content validity; (d) pilot testing, involving quantitative item analysis and elimination; (e) and scale validation, involving the administration of the scale and total measurement package to a sample, followed by factor analysis to determine the psychometric strengths, shortcomings, and latent correlational structure of the measure. Hence, this investigation was divided into two phases. The first phase covered the conceptual design, expert evaluation, and pilot testing of the scale (i.e., steps a through d), while the second phase focused on the psychometric evaluation and initial validation of the scale.

Phase 1

Construct Definition

For the purposes of this investigation, the latent construct of social work student self-efficacy was defined as a student's perceived confidence to perform, successfully,

the identified academic tasks and skills or to demonstrate the knowledge and abilities mandated by the Council on Social Work Education (CSWE) (2001) in the Educational Policy and Accreditation Standards (EPAS).

Item Construction

Initial item content was drawn from the foundation and advanced curriculum content sections of the EPAS (CSWE, 2001) document and modified by the primary investigator to create a list of efficacy items consistent with Bandura's (2001) most recent recommendations for efficacy scale construction. Items were written to: (a) accurately reflect the criterion measure (e.g., the knowledge, skills, and abilities (KSA's) listed in the EPAS); (b) be short and unambiguous (e.g., not "double-barreled"); (c) reflect judgments of current confidence; and (d) provide for maximum response variance (e.g., wording reflects different levels of task difficulty or "gradations of challenge"). To generate an initial item-pool of sufficient size (Clark & Watson, 1998) and that reflects the essential KSA's for each CSWE (2001) standard found in Section 4 of the EPAS (see Appendix A), two synonymous efficacy items were drafted per KSA. To provide for additional response variance among students, one of each pair of synonymous items was "contextualized." By providing a particular context within which a given task must be completed, the relative difficulty of the task may be altered and the range of respondent efficacy judgments increased (Bandura, 1986, 2001; Woolfolk & Hoy, 1990). As a result of the aforementioned steps, 66 items were initially drafted, representing an oversampling of the each content domain presented in Section 4 of the EPAS (CSWE, 2001; Springer, Abell, & Hudson, 2002).

Response Format

Selection of a response format was mediated by several considerations. Bandura (2001) has recommended, traditionally, that measures of the strength of self-efficacy judgments use either a 0 to 100 point rating scale, with "10-unit intervals from 0 ('Cannot do'); through intermediate degrees of assurance, 50 ('Moderately certain can do'); to complete assurance, 100 ('Certain can do')"(p. 4) or a more simplified format, ranging from 0 to 10, depending on the scale's purpose and target audience. These recommendations illustrate the importance of including sufficient response choices, as scales that use too few measurement points are less sensitive to respondent differences and less reliable (Nunnally & Bernstein, 1994; Pajares, Hartley, & Valiante, 2001). In addition, task-specific self-efficacy measures have, traditionally, incorporated both level and strength estimates (Bandura, 2001),although Larson, Suzuki, Gillespie, Potenza, Bechtel, & Toulouse (1992), citing Lent & Hackett (1987), have noted that "when complex behaviors that defy hierarchical ordering are being estimated, level and strength measures will be a bit redundant psychometrically"(p.106). Finally, efficacy scales are unipolar (e.g., do not include negative numerical ratings), as there is no lower rating of confidence than 0.

Based on these recommendations, the scale was scored using a unipolar 11-point Likert response format, ranging from: 0 = "Cannot do at all," to 5 = "moderately certain can do," to 10 = "Certain can do." In keeping with Bandura's (2001) recommendations and precedents set by previous scales measuring social work self-efficacy (Holden, Meenaghan, Anastas, & Metrey, 2002), instructions asked respondents to rate their

present confidence to perform successfully a given KSA, to the extent that an experienced supervisor would rate them as "excellent."

Assessment of Content Validity

Using survey methodology and following approval by the University of Georgia, Athens, Institutional Review Board (IRB) for human subjects research on October 10, 2002, the initial pool of 66 items were submitted to a panel of seven subject-matter experts with knowledge in the profession of social work education and expertise in the area of self-efficacy research (DeVellis, 1991). To determine item content validity, these experts were asked to rate how well each of the items reflect the CSWE standard, using a 3-point Likert scale, ranging from 1 = Not Appropriate to 3 = Appropriate, and to provide comments regarding item wording and relevance to the construct of social work student self-efficacy. A copy of the questionnaire completed by subject matter experts is located in Appendix B. The content validity of each item was determined by the proportion of experts who rated each item as appropriate (e.g., a score of 2 to 3) (Walz, Strickland, & Lenz, 1991). Items that failed to achieve content validity (i.e., more than one expert rating of "Not Appropriate") were removed from the scale and additional items were reworded, based on the suggestions of the subject matter experts. New items were added at this stage, based on expert input, to more adequately sample certain content domains.

Pilot Study

Clark and Watson (1998) have suggested that pilot-testing potential items with a small sample can be helpful before distributing a scale as part of an instrument validation package to a larger sample of respondents. Hence, a pilot version of the social work

student Self Appraisal Inventory (SAI-P) (see Appendix E) was given to a group of social work students in order to assess preliminary item and scale characteristics.

Sample

As the primary purpose of this pilot study was to elicit targeted feedback on item wording from a representative sample and to determine the feasibility of such a scale for use with social work students, a relatively small, nonrandom, purposive sample was used for initial item, validity, and reliability analyses (Nunnally & Bernstein, 1994; Springer, Abell, & Hudson, 2002). The sampling frame consisted of any adult BSW and MSW social work student currently enrolled in one of two accredited schools of social work in the South and Southeast, namely the University of Georgia, Athens, and the University of Arkansas, Fayetteville, during the Fall of 2002. From this sampling frame ($N > 400$), students enrolled in 8 different course sections, covering both baccalaureate and master's content, were purposefully selected by the primary investigator, based on their potential representativeness, availability, and expressed willingness to participate. Each adult student who indicated a willingness to participate via a signed informed consent document and who completed both instruments in the measurement package was included in the pilot sample.

Instrumentation. Two instruments were used in the pilot study: the Demographic Survey (Appendix D) and the pilot version of the Social Work Student Self Appraisal Inventory (SAI-P)(Appendix E).

The Demographic Survey was a 1-page, pencil-and-paper form developed for this study to gather information regarding respondent demographics (i.e., age, ethnicity, and

gender), work experience in the field of social work, and education (i.e., current degree status and years of education).

The pilot version of the Social Work Student Self-Appraisal Inventory (SAI-P) was a 71-item self-administered scale designed, consistent with Bandura's (1986, 2001) self-efficacy theory, to measure the current confidence of social work students to demonstrate the knowledge, skills, and abilities (KSA's) mandated by the Council on Social Work Education (CSWE, 2001) in academic settings. Item content was developed to reflect seven theoretically distinct academic domains present in the EPAS document: (a) values, (b) social justice, (c) human behavior in the social environment, (d) policy, (e) practice, and (f) research. For reasons of domain sampling and parsimony (Springer, Abell, & Hudson, 2002), an average of 10 items were developed for each domain. No content was adapted from EPAS Section 4.7 related to field education, as this represents a variable context within which specific social work skills are utilized, rather than an explicit list of mandated knowledge, skills, and abilities (Bandura, 2001). In order to increase response variance, the pilot instrument included two types of item: some with a "context" and some without. As discussed earlier in this chapter, "contextualized" items included wording that describes potential settings in which KSAs might be performed, thereby increasing the perceived difficulty of the task (Woolfolk & Hoy, 1990). Although the number of items with specific contextual descriptors was limited, their inclusion in the scale represented a departure from the traditional micro-skill focus advocated by Bandura (1986, 2001). Items were scored along an 11-point Likert scale, with respondents circling numbers from 0 = "Cannot do at all" to 10 = "Very certain can do," resulting in a sum score, ranging from 0 to 710. Higher scores on the SAI-P are indicative

of greater perceived social work self-efficacy. Consistent with Bandura's (2001) recommendations, item difficulty was modified to address the potential for response-set bias, instead of more traditional methods (e.g., by reverse-coding select items).

Procedure. Adult students enrolled in both BSW and MSW programs at the two aforementioned CSWE-accredited schools of social work were recruited to participate in the pilot study. Students from the University of Georgia (UGA), Athens, were recruited during regularly scheduled class hours by the primary investigator, following approval by the UGA Institutional Review Board (IRB) for human subjects research on October 10, 2002. Following approval from the University of Arkansas IRB on December 19th, 2002, baccalaureate social work students from the University of Arkansas, Fayetteville, were recruited by a colleague during regularly scheduled class hours. All students were provided with a copy of the informed consent document (Appendix C) and both pilot-measurement instruments: the Demographic Survey and the SAI-P. The informed consent process was verbally described and participants were instructed to provide written comments on the readability, clarity, and relevance of scale items in the margins of the instrument. Participants were asked to complete and return all instruments within 48 hours to either the primary investigator or their course instructor.

Analysis. Descriptive data for the pilot sample was analyzed using SPSS-PC v. 9.0 statistical software. These statistics were used primarily to ascertain how representative the pilot sample was in comparison to the national population of students enrolled in accredited schools of social work (Lennon, 2002). No attempt was made to identify differences in efficacy scores according to demographic variables, because the

lack of a valid criterion (e.g., the SAI-P) precluded meaningful point estimation (Springer, Abell, & Hudson, 2002; Nunnally & Bernstein, 1994).

The primary goal for Phase 1 of this study was to facilitate a qualitative item analysis of the item pool derived from the CSWE (2001) EPAS. Typically, such analyses involve the evaluation of item readability, degree of ambiguity, and redundancy (Crocker & Algina, 1986; Weathers, Keane, King, & King, 1997). In order to produce a comprehensive, yet practical, measure of social work student self-efficacy, a combination of qualitative and exploratory quantitative analytical techniques were employed to reduce the number of items on the SAI-P. All additional quantitative analyses conducted during Phase 1 of this study were conducted with SPSS-PC v. 9.0 statistical software.

To answer the research question, "Do baccalaureate- and master's-level social work students find SAI-P items clear and understandable?" written comments pertaining to the face validity of individual items were reviewed systematically by the primary investigator. Prior to conducting quantitative analyses, items were removed that received substantial commentary from respondents (Weathers, Keane, King, & King, 1997).

To answer the research question, "Which items on the pilot SAI can be eliminated to create a shorter, more reliable measure?" a quantitative item analysis was conducted (Spector, 1992). First, initial scale score descriptive statistics, including item response means, standard deviations, and range, were calculated. The values of these item descriptives were analyzed to identify possible distribution problems prior to further analyses (Rubin & Babbie, 1997). Items that failed to discriminate adequately between respondents were deleted (Field, 2000). Second, a matrix (e.g., R-matrix) of all item pair correlation coefficients and p-values (an estimate of item difficulty) was calculated for

the remaining items (Field, 2000). Items that did not demonstrate a moderate correlation with at least one other subscale item or that had extreme p-values (that is, below .1 or above .9) were eliminated. These factors were most likely indicative of scoring mistakes, problems with content, or items that were too easy (Clark & Watson, 1998; Nunnally & Bernstein, 1994). The number of items retained, following the qualitative and quantitative item analyses, was mediated by the need to produce a scale that both covers relevant content and that is practical to administer in a classroom setting, given typical time constraints (Weathers, Keane, King, & King, 1997).

To provide evidence of factorial construct validity and answer the research question, "To what degree to individual items on the SAI-P reflect the overall construct of social work student self-efficacy and the related constructs of social work policy, diversity, human behavior in the social environment, practice, policy, ethics, and research?" retained SAI-P item scores were subjected to exploratory factor analysis (EFA). Although the SAI-P was designed to reflect specific content domains specified, a priori, by the CSWE (2001) EPAS, an exploratory approach was employed during this pilot phase to assess the possibility that the item pool was characterized by a more simple structure, such as that represented by the public-draft version of the EPAS which included only 6 content domains, and to suggest alternate hypotheses for the second phase of inquiry (Stapleton, 1997).

Traditionally, researchers have used one of two similar approaches to identify the possible underlying structure of a set of related variables without imposing any preconceived structure on the data: Principle Component Analysis (PCA) and Factor Analysis (Field, 2000). The primary difference between these approaches is related to the

communality (i.e., the proportion of common variance attributed to a variable) estimates that are used. PCA "decomposes the original data into a set of linear variates," while factor analysis "derives a mathematical model from which factors are estimated"(Field, 2000, p.433). Selection of one method over another depends on whether the findings are intended to apply only to the "sample collected (descriptive method) or to generalize…to a population (inferential method)"(Field, 2000, p.447). Analytic techniques such as PCA, principle factors analysis, and image covariance analysis assume that the sample used is the entire population, whereas techniques like the maximum likelihood method of estimation assume that subjects have been randomly selected and that the set of variables is the population of interest, thereby producing results that can generalize to other populations (Tinsley & Tinsley, 1987). As the two methods are, otherwise, believed to produce similar results (Guadagnoli & Velicer, 1988), the data from Phase 1 was subjected to an exploratory factor analysis using the Maximum Likelihood (ML) method of extraction (Joreskog & Lawley, 1968). According to Pedhazur (1997), this method of factor extraction produces the best parameter estimates and is the same method of estimating variance used by LISREL, the statistical software used in Phase 2 of this study to test the hypothetical factor structure of the SAI. For exploratory purposes, no initial limit was set on the number of factors to be extracted.

The first criterion used to extract factors was Kaiser's (1960) criterion, the default option in SPSS, which extracts all factors with an eigenvalue over 1. Eigenvalues represent the amount of variance explained by a particular factor and, by examining the weighted, reduced correlation matrix, can be used to determine the relative importance of each factor extracted (Field, 2000). Cattell's (1978) scree test, a plot of "each eigenvalue

(Y-axis) against the factor with which it is associated (X-axis)"(Field, 2000, p.436), as well as factor eigenvalues and the interpretability of rotated factors (Pajares, in press) were additional criteria used to determine the number of factors retained for further analysis. As there was good theoretical reason to expect that any factors emerging from the data would correlate (Bandura, 1997; CSWE, 2001) the direct oblimin method of oblique rotation was used to improve the interpretability of factors (Field, 2000). Based on the differential indications of Kaiser's criterion and the scree test, multiple factor analytic solutions were considered. Consequently, 2 possible hypothetical factor structures were identified and evaluated for the Phase 1 data.

To help determine which items significantly load on a given factor, Stevens (1992) has recommended that for a sample size of 100, each factor structure coefficient or "loading" should be greater than 0.512, and for 200 it should be greater than 0.364. Due to the exploratory nature of this quantitative analysis and the fact that, traditionally, researchers have considered loadings with an absolute value greater than 0.3 to be significant (Field, 2000), any loading equal to 0.3 was considered indicative of the common factor and retained.

To provide evidence of instrument reliability, Cronbach's coefficient alpha (Cronbach, 1951), the most widely used method to assess internal consistency reliability (Spector, 1992), was calculated for the scale as a whole and subscales, as indicated by both factor analytic solutions. Springer, Abell, and Nugent (in press) and Nunnally and Bernstein (1994) have noted that measures used to make decisions about individuals should produce sets of scores with a minimum reliability coefficient of .80 while DeVellis (1991) has indicated alpha coefficients ranging from .65 to .70 are "minimally

acceptable," with higher values being preferable. For the purposes of this investigation, scores on the SAI-P and its subscales were considered to be reliable if coefficient alpha was at least .70.

Phase 2

Validation Study

A validation study using a correlational design (e.g., confirmatory factor analysis) was conducted to assess the dimensionality, reliability, and validity of the social work student Self-Appraisal Inventory (SAI). This preliminary validation study was designed to produce foundational evidence of social work student self-efficacy construct validity.

Sample

When utilizing inferential statistics to estimate population characteristics, particularly in regard to factor analytic solutions, issues of sample relevance and size are important (Springer, Abell, & Hudson, 2002). The subjects selected to complete the initial measurement package should be representative of the population that will ultimately use the instrument being developed and the sample should be of sufficient size to ensure adequate power to complete all intended tests and provide stable item statistics (Field, 2000). A large sample size is generally associated with more precise estimates of population characteristics (Joreskog, 1993), reduced standard error, and increased reliability (Nunnally & Bernstein, 1994; Rubin & Babbie, 1997). For studies based on classical test theory, Cattell (1978) has recommended having from 3 to 6 subjects (N) per variable (p), up to a total of 250, while Everitt (1975) and Nunnally and Bernstein (1994) have both recommended at least 10 subjects per variable up to a total of approximately 300. Regarding these N: p ratio recommendations, Springer, Abell, and Hudson (2002)

noted that "pragmatically, obtaining such large samples while targeting a specific group often dictates that one will be implementing non-probability sampling strategies"(p.34) and, thus, sample relevance and size should take precedence over randomness.

Based on the preceding considerations, the sampling frame for this validation study included approximately 800 students, currently registered for baccalaureate and masters-level social work courses from 5 different accredited schools of social work located in the South and Southeast. Given that a minimum of 300 completed instruments were needed to ensure a reliable factor analytic solution (Everitt, 1975; Field, 2000; Nunnally & Bernstein, 1994), 350 measurement packages were produced and distributed, using a purposive, criterion-based sampling technique (Rubin & Babbie, 1997). The inclusion criteria used for Phase 2 were as follows: (a) respondents must have been at least 18 years of age, (b) read English fluently, (c) have been enrolled in a BSW or MSW program of study at a CSWE-accredited school of social work at the time that Phase 2 data was collected, and (d) have not participated in Phase 1 of this study.

Instrumentation

Six instruments constituted the measurement package distributed in Phase 2 of this investigation: (a) a Demographic Survey (Appendix C), (b) the 37-item SAI (Appendix F), (c) the revised Life Orientation Test (LOT-R) (Scheier, Carver, & Bridges, 1994)(Appendix G), (d) the Center for Epidemiological Studies Depression Scale (CES-D)(Radloff, 1977)(Appendix H), (e) the Clinical Anxiety Scale (CAS)(Thyer, 1987)(Appendix I), and (f) the Social Work Self-Concept Scale (SWSC)(Appendix J). The Demographic Survey used in Phase 2 was identical to that used in Phase 1 of this study. To control for the possible effects of stereotype-threat, defined as the suppression

of performance induced by situations that require minority respondents to indicate their race on a questionnaire (Aronson, 2002), the Demographic Survey was administered after all other instruments in the measurement package had been completed.

The social work student Self Appraisal Inventory (SAI) was a 37-item self-administered multidimensional scale designed to measure the current confidence of social work students to demonstrate successfully the knowledge, skills, and abilities (KSA's) mandated by the Council on Social Work Education (CSWE, 2001) in academic settings. The pilot version of this scale (e.g., the SAI-P) consisted of 34 items and either 6 or 4 subscales. The 6-factor solution included the following subscales: (a) Policy, with 4 items; (b) Values, with 9 items; (c) Human Behavior in the Social Environment (HBSE), with 5 items; (d) Practice, with 5 items; (e) Ethics, with 5 items; and (f) Research, with 6 items. The 4 factor version included the following subscales: (a) Values, with 9 items; (b) Practice, with 5 items; HBSE, with 14 items; and Research, with 6 items. In Phase 1 of this study, the 34-item SAI-P demonstrated good content and face validity and excellent internal consistency reliability, with Cronbach's alpha = .9588. Three additional items (Items 8,12, and15) were added to the SAI-P for Phase 2, with content related to social work practice. Items were scored along an 11-point Likert scale, with respondents circling numbers from 0 = "Cannot do" to 10 = "Very certain can do." Likewise, all SAI items were positively scored, as Bandura (2001) has indicated that self-efficacy items must be phrased as something someone "can do" and that potential response set bias (Springer, Abell, & Hudson, 2002) is more a function of low perceived item difficulty. Total scale scores could range from 0 to 370, with higher scores indicative of a greater degree of self-efficacy. Prior to administration, items were randomly sequenced to help

control for possible order effects (Field, 2000). The 37-item SAI required less than 10 minutes to complete and had a Flesch-Kincaid readability level equal to grade 8.4. According to Ley and Florio (1996), this readability level was appropriate (e.g., +/- 4 less than the total respondent years of education), as all Phase 2 respondents were expected to have at least 12 years of formal education.

The revised Life Orientation Test (LOT-R) (Scheier, Carver, & Bridges, 1994) is a shortened, unidimensional version of the most widely used measure of optimism in psychological literature, the Life Orientation Scale (Scheier & Carver, 1985; 1992). The LOT-R is a 10-item paper and pencil self-report instrument designed to measure individual differences in generalized dispositional optimism, defined as the degree to which one has positive outcome expectations about the future. Respondents are provided with statements that reflect outcome expectancies, such as "In uncertain times, I usually expect the best," and are asked to rate items along a 5-point Likert scale, ranging from 5 = "I agree a lot" to 1 = "I disagree a lot." Three of the items are worded positively and three negatively, while the four remaining items are considered "fillers" and are not scored. Higher scores on the LOT-R are considered indicative of higher degrees of optimism. The LOT-R has demonstrated good reliability and validity with student samples in both the U.S. (Scheier, Carver, & Bridges, 1994) and China (Lai, Cheung, Lee, & Yu, 1998).

The Center for Epidemiological Studies Depression Scale (CES-D)(Radloff, 1977) consists of 20 items designed to measure "the six major components of depression identified in clinical writings and factor analyses: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss

of appetite, and sleep disturbance"(Schutte & Malouff, 1995, p.117) in the general population. Items are scored along a 3-point Likert scale, ranging from 0 = "Rarely or none of the time" to 3 = "Most or all of the time." Four scale items are reverse coded and scores may range from 0 to 60, with a clinical cutoff of 16 or greater identifying from 84% to 99% of severely depressed patients (Radloff, 1977; Schulberg, Saul, McClelland, Ganguli, Christy, & Frank, 1985). Higher scores on the CES-D are indicative of a greater degree of depression and have been found "to correlate highly with clinician-rating measures of depression, such as the Hamilton Depression Rating Scale…and with other self-report measures, such as the Beck Depression Inventory and the Zung Self-Rating Depression Scale"(Schutte & Malouff, 1995, p. 119). Internal consistency reliability estimates, using Cronbach's alpha, have ranged from .84 to .90 (Radloff, 1977) while test-retest reliability estimates for periods up to six months have ranged from .32 to .54 (Schutte & Malouff, 1995).

The Clinical Anxiety Scale (CAS)(Thyer, 1987) is a 25-item self-report measure designed to assess the "amount, degree, or severity of clinical anxiety reported by the respondent with higher scores indicating higher amounts of anxiety"(Thyer, 1987, p.123). Item content is based on the DSM III criteria for anxiety disorders and responses are scored using a 5-point rating system, where 1 = "Rarely or none of the time" and 5 = "Most or all of the time." Eight items are reverse scored and 25 is subtracted from the scale total, for sum score totals ranging from 0 to 100. The CAS has a clinical cutoff of 30, demonstrated high internal consistency reliability with an alpha of .94, and has shown "good known-groups validity in being able to discriminate significantly between groups known to be suffering from anxiety and lower-anxiety groups"(Thyer, 1987, p.123).

The Social Work Self-Concept Scale (SWSC) consisted of 10 items, adapted from Marsh's (1992) Academic Self-Description Questionnaire III (ASDQ III), that were reworded for this study to reflect subject-specific social work content. For example, an item such as, "I am quite good at mathematics" was transformed to "I am quite good at social work." This global measure of academic self-concept was scored along an 8-point Likert scale, where 1 = "Definitely False" and 8 = "Definitely true." Five of the items were reverse scored and total scale scores could range from 8 to 80, with higher scores indicative of a more positive social work self-concept. The internal consistency reliability estimate (Cronbach's alpha) for a similarly transformed version of the ASDQ was .83 with a group of middle school students (Pajares, in press), while reliability estimates for the original ASDQ "in various academic areas have ranged from .86 to .94"(p.4).

Procedure

Following receipt of approval from the University of Georgia Institutional Review Board (IRB) for the protection of human subject on October 21, 2002, the participation of additional schools of social work was solicited, in writing, by the primary investigator. Approval from the Georgia State University social work department was received on December 10, 2002, from the University of Arkansas-Little Rock IRB on December 18, 2002, from the University of Arkansas-Fayetteville IRB on December 19, 2002, and from Arkansas State University IRB on January 30, 2003.

A total of 350 measurement packages were created by the primary investigator, containing the following six instruments in order: (a) the 37-item SAI, (b) the LOT-R, (c) the CES-D, (d) the SWSC, (e) the CAS, and (f) the Demographic Survey, in addition to a separate informed consent document. From December, 2002, to the middle of February,

2003, the primary investigator and one Ph.D.-level colleague verbally solicited the voluntary participation of adult social work students at each of the five aforementioned CSWE-accredited schools of social work, during regularly scheduled class hours. Where possible, participants enrolled in the first year of a BSW or MSW program were recruited at the end of the semester, to help ensure that everyone was equally exposed to relevant social work content. Both investigators provided verbal and written informed consent to participants and personally collected questionnaires upon their completion, to ensure a high response rate and minimize missing data (Nunnally & Bernstein, 1994). No course credit or monetary rewards were offered for participation, although some instructors provided extra-credit for participation. Likewise, students were informed that all responses would be confidential and that their instructors would not have access to the completed questionnaires, to reduce the likelihood of social desirability and response bias (Nunnally & Bernstein, 1994).

Analysis

Sample Characteristics. To determine whether the pooling of respondent populations for subsequent quantitative analyses was reasonable, a variety of comparative procedures were employed, using SPSS-PC v. 9.0. First, group means were compared to determine whether significant differences exist for average scores on the SAI by gender, ethnicity, and school affiliation. Second, descriptive data for the Phase 2 sample was compared to statistics for the national population of students enrolled in BSW and MSW programs of accredited schools of social work (Lennon, 2002). These analyses aside, it is not uncommon in applied factor analytic research to treat different populations, such as

students from different classes or schools, as a single sample for the purposes of instrument development (Bollen, 1989; Joreskog, 1993).

Initial Item and Reliability Analyses. To answer the research question, "Which items on the SAI adequately discriminate among student respondents?" an item analysis was conducted using the Phase 2 data (Crocker & Algina, 1986). Scale score descriptive statistics, including item response means, standard deviations, and ranges were reviewed for the 37-item SAI (Field, 2000). In addition, the correlation matrix (R-matrix) for the SAI, using Phase 2 data, was examined to identify potential problems related to multicollinearity. During Phase 1 of this investigation, the determinant of the R-matrix was greater than .00001, indicating that responses to the pilot version of the SAI were highly correlated across items (Field, 2000). Such multicollinearity could present serious problems for model identification using LISREL and Maximum Likelihood (ML) estimation (Byrne, 1989). Thus, any item that appeared to correlate highly (> 0.6) with the majority of SAI items was considered for deletion. Likewise, items that failed to discriminate among respondents were deleted at this stage (Field, 2000). The process of item reduction continued until the value of the determinant for the R-matrix was acceptable (Byrne, 1989; Field, 2000).

To answer the research question, "Which items on the SAI can be eliminated to create a shorter, more reliable measure?" Cronbach's (1951) coefficient alpha was calculated for Phase 2 responses to the SAI, using SPSS PC v. 9.0. Given that the underlying factor structure of the SAI was uncertain at this point in the analysis process, no attempt was made to identify the reliability of subscales. As noted earlier, scores on the SAI were considered to be reliable if coefficient alpha was at least .70 (DeVellis,

1991; Spector, 1992). Corrected item-total correlations and accompanying alpha-if-deleted scores for responses to the SAI were examined to identify items that did not contribute to an internally consistent scale. Any items that failed to contribute to an internally consistent scale were deleted (Field, 2000).

For the final step in the Phase 2 item analysis (Crocker & Algina, 1986), retained items were qualitatively reviewed by the primary investigator to ensure an adequate sampling of content domains specified, a priori, by the CSWE (2001) EPAS document (Springer, Abell, & Hudson, 2002).

Validity-Confirmatory Factor Analysis. To investigate the underlying dimensionality of the construct of social work student self-efficacy, two competing research questions were formulated, based on the results of Phase 1 of this study. These questions were answered by using quantitative structural equation modeling (SEM) techniques to systematically compare two different hypothetical models of social work self-efficacy (Joreskog, 1993).

To answer the research question, "To what degree do individual items SAI reflect the overall construct of social work student self-efficacy and the related constructs of social work values, practice, policy, ethics, HBSE, and research?" data from Phase 2 of this investigation was subjected to confirmatory factor analysis (CFA). This research question proposed that social work student self-efficacy, as measured by the SAI, was a multidimensional construct consisting of 6 underlying factors (see Figure 1). This hypothetical factor structure was supported by the fact that the item content on the SAI was designed to reflect the 7 content domains listed in the CSWE (2001) EPAS. Notably, Section III of the public draft version of the EPAS (CSWE, 2000) included 6 content

domains: (a) social work values and ethics, (b) diversity and social and economic justice, (c) human behavior in the social environment, (d) social welfare policy and services, (e) social work practice, and (f) research. In addition, quantitative support for this hypothesis was provided by the exploratory factor analysis in Phase 1 of this study. Using Kaiser's criterion, SPSS extracted 6 factors from responses to a pilot version of the SAI.

To answer the competing question, "To what degree do individual items on the SAI reflect the overall construct of social work student self-efficacy and the related constructs of social work values, practice, HBSE, and research?" Phase 2 responses to the SAI were subjected to a second CFA, using an alternative structural model (Bollen, 1989). This hypothetical alternative suggested that social work student self-efficacy was a multidimensional construct characterized by 4 underlying factors (see Figure 2). This approach was supported by the results of the Phase 1 factor analysis, in which Cattell's (1978) scree test suggested that a 4-factor solution was preferable to a 6-factor solution. In addition, existing measures of social work self-efficacy have demonstrated more simple latent structures, ranging from 1 to 5 factors (Cuzzi, Holden, Rutter, Rosenberg, & Chernack, 1996; Holden, Barker, Meenaghan, & Rosenberg, 1999; Holden, Meenaghan, Anastas, & Metrey, 2002), which are preferable to complex structures, for reasons of parsimony (Bollen, 1989; Clark & Watson, 1998; Spector, 1992).

Typically, scale development methodology entails the use of exploratory factor analytic (EFA) procedures to discover possible underlying factor structures of a new scale (Clark & Watson, 1998). However, when a researcher has a theoretical or empirical basis on which to anticipate the factor structure and if items were created with a given dimension or content domain in mind, a CFA is preferable to test these expectations

(Bollen, 1989). Hence, a model-generating approach (Joreskog, 1993) was used in an attempt to fit each hypothetical component solution to the observed data from Phase 2.

Joreskog (1993) has described a model-generating approach as the most commonly used approach to model testing, given limited research resources, and one in which:

> the researcher has specified a tentative initial model. If the initial model does not fit the given data, the model should be modified and tested again using the same data. Several models may be tested in this process. The goal may be to find a model that not only fits the data well from a statistical point of view but also has the property that every parameter of the model can be given a substantively meaningful interpretation. The respecification of each model may be theory driven or data driven. Although a model may be tested in each round, the whole approach is model generating rather than model testing. (p.295)

Given the inherently exploratory nature of post-hoc model fitting (Joreskog, 1993), additional comparative indices suggested by Byrne (1989) were used to interpret and evaluate the final fit of each model. The best-fit model was retained for subsequent reliability and validity analyses.

Each CFA was conducted using the Maximum Likelihood (ML) method of parameter estimation (Hoyle & Panter, 1995; Pedhazur, 1997) and a correlation input matrix (Byrne, 1989) with LISREL-PC v. 8.30 (Student Edition, February 2000) software (Joreskog & Sorbom, 1999). List-wise deletion was used to address missing data (Hoyle & Panter, 1995), as this has been found to improve the interpretability of factor solutions using ML estimation (Bollen, 1989; Joreskog, 1993).

Analysis Strategy. Joreskog (1993) outlined a four-step process for analyzing data in a model-generating situation. First, the researcher must "specify an initial model on the basis of substantive theory" (p.313). Following the conceptual task of model specification, the second step is "to estimate the measurement model for each construct separately, then for each pair of constructs…(then) for all the constructs"(p.313). Once the measurement model has been estimated, one should estimate the complete structural equation model. Third, in order to obtain stable models that fit the data well in Step 2, each model should be evaluated with "attention to chi-square, standard errors, t values, standardized residuals, and modification indices"(p.313) and re-estimated once appropriate modifications have been made. The fourth step involves cross-validating the final, well-fit model, "because its results may have been obtained to some extent by 'capitalizing on chance'"(p.313). This may be accomplished by obtaining a second sample and comparing it with the first or by dividing the original sample in two halves, repeating the above steps with each half, and comparing the validation index (Cudeck & Browne, 1983) for each. The validation index is defined as "a measure of the distance [difference, discrepancy, deviance] between the fitted covariance matrix in the calibration sample and the…validation sample"(p.313) and the model with the smallest index is preferable and should be retained.

Using Joreskog's (1993) approach, preliminary 6 and 4-factor models were specified and subjected, separately, to a confirmatory factor analysis (CFA). After this initial CFA, the overall goodness-of-fit of each model was compared. The best fit and

most theoretically sound model of social work student self-efficacy was retained. To explore possible relationships among the observed variables not specified by the original model, subsequent exploratory post hoc tests were used to estimate new parameters and improve model fit. Ultimately, a single model was retained for further reliability and validity analyses. Joreskog's (1993) fourth step, cross-validation, was outside of the scope of this preliminary validation study (Clark & Watson, 1998; Springer, Abell, & Hudson, 2002).

Fit Indices. Byrne (1989) has noted that, "The primary statistical problem in this model-testing procedure is to examine the goodness-of-fit between the hypothesized model and the sample data that comprise the observed measurements"(p.5). Hence, the initial CFA and subsequent model-generating analyses were based on the interpretation of five statistical fit indices produced by LISREL 8.30: (a) the minimum fit chi-square ($\chi 2$), (b) the root mean square error of approximation (RMSEA), (c) the goodness-of-fit index (GFI), (d) the adjusted goodness-of-fit index (AGFI), and (e) the non-normed fit index (NNFI)(Bollen, 1989).

The minimum fit $\chi 2$ may be regarded as a measure of fit rather than a test statistic in SEM and "is a badness-of-fit measure in the sense that a small chi-square corresponds to good fit and a large chi-square to bad fit"(Joreskog, 1993, p.308), relative to degrees of freedom. However, a serious problem with the interpretation of $\chi 2$ is that it is very sensitive to sample size. "That is, a large sample size, which is required in order to interpret the index as a significance test, may result in a significant χeven though the differences between observed and model-implied covariances are slight"(Bride, 2001, p.46). Traditionally, to reduce the sensitivity of the $\chi 2$ statistic to sample size, the ratio of

$\chi 2$ to the degrees of freedom is interpreted, with values ranging from less than 3 .0 to as high as 5.0 representing good fit (Bollen, 1989).

The RMSEA is a measure of the "discrepancy per degrees of freedom"(p.310) of the model with values ranging from .05 to .08 considered to represent reasonable errors of approximation in the population (Browne & Cudeck, 1989). A 90% confidence interval for RMSEA may reflect the stability of the estimated model in the population. Thus, smaller confidence intervals suggest more precise estimates of model fit (Byrne, 1989).

The GFI, proposed by Joreskog and Sorbom (1981), measures the amount of variance/covariance in the input matrix that is explained by the model, and, thus, how well the model reflects the sample data. GFI values closer to 1 are indicative of good fit; close to zero a poor fit. A variation of the GFI that accounts for the relative number of degrees of freedom within a model is the AGFI. This is an important alternative to the GFI, as the estimation of additional parameters in a model can result in superior fit index values, based solely on chance sample differences (Bollen, 1989). The AGFI also ranges from zero to 1.0, with higher values indicative of good fit.

The NNFI is considered an incremental fit index, in that "it compares how much better the model fits compared to a baseline model…However, the NNFI takes into account the complexity of the model, by rewarding more parsimonious models with higher values"(Bride, 2001, p.47). NNFI values less than .90 are an indication the the model fit can be improved (Bride, 2001; Byrne, 1989). Due to the limitations associated with any one given index, a variety of fit measures were reported for each model in this study (Bollen, 1989; Browne & Cudeck, 1989; Hoyle & Panter, 1995; Joreskog, 1993).

As suggested by Byrne (1989), additional criteria used to evaluate model fit included: (a) the "feasibility of parameter estimates," (b) the "adequacy of the measurement model," and (c) the "goodness-of-fit of model parameters"(p54-56). Indicators of unreasonable parameter estimates were considered to be: "negative variances, correlations > 1.00, and covariance or correlation matrices that are not positive definite"(p.54) as well as large standard errors and highly correlated parameter estimates. The measurement model "specifies how latent variables or hypothetical constructs depend upon or are indicated by the observed variables. It describes the measurement properties (reliabilities and validities) of the observed variables"(Joreskog & Sorbom, 1999, p.1). To assess the adequacy of the measurement models, the squared multiple correlation (R2) for each dependent variable was examined (Byrne, 1989; Field, 2000). These values could range from 0 to 1.0, with scores close to 1.0 being preferable. According to Joreskog (1993), negative R2 values are indicative of possible multicollinearity and represent problems for subsequent parameter estimation procedures.

The process of assessing the goodness-of-fit of model parameters necessitated the review of indices that specifically related to individual parameter estimates, rather than the fit of the model, as a whole (Joreskog & Sorbom, 1999). The t-value provided by LISREL is an estimate of the statistical significance of each parameter, and non-significant results should be deleted from the model (Joreskog, 1993). Values for the t-statistic are significantly different from zero when they are equal to ± 1.96, given an alpha of .05 (Byrne, 1989; Joreskog & Sorbom, 1999). Likewise, the modification index (MI) for each fixed parameter in a model "represents the expected drop in $\chi 2$ if a particular parameter were freely estimated"(Byrne, 1989,p.57). By adding, or freeing,

fixed parameters with large MI values, the overall fit of a model may be improved (Jorseskog, 1993). Based on a visual inspection of these indices, parameters were either deleted of freely estimated, to improve overall model fit. Because changing a single parameter in a structural model can have significant effects on all other parameter estimates, these post hoc changes were done one by one (Joreskog, 1993). Model fit was reassessed after each step, until a well-fit model was obtained (Byrne, 1989; Joreskog & Sorbom, 1999).

Hypothesized Structural Models. Two hypothetical structural models were estimated in Phase 2 of this study. Although the factor analytic process was exploratory and model-generating, rather than strictly model-testing, each of the proposed structural models represented certain a priori hypotheses or assumptions.

A diagrammatic representation of the 6-factor model of social work student self-efficacy (SWSE) is displayed in Figure 1. This model assumed that:

1. SWSE could be explained by six factors: values, practice, policy, ethics, HBSE, and research.
2. Each observed variable in a subscale had a non-zero loading on the SWSE factor it was designed to measure and a zero loading on all other factors.
3. The six SWSE factors were correlated.
4. Error estimates for the observed variables were uncorrelated.

A similar representation of the 4-factor model of SWSE is displayed in Figure 2. This model assumed that:

1. SWSE could be explained by four factors: values, practice, HBSE,

and research.

2. Each observed variable in a subscale had a non-zero loading on the SWSE factor it was designed to measure and a zero loading on all other factors.
3. The four SWSE factors were correlated.
4. Error estimates for the observed variables were uncorrelated.

Each diagram uses the conventional structural equation modeling (SEM) format (Byrne, 1989). Schematically, the circles represent exogenous latent variables (e.g., independent variables) and squares represent observed variables. Arrows from a circle to a square indicate a regression path from the latent variable to the observed variable, while curved arrows from one circle to another depict the correlation between latent constructs (Joreskog & Sorbom, 1999).

Reliability

To answer the research question, "To what extent are the SAI and its subscales internally consistent?" Cronbach's (1951) coefficient alpha was calculated for the 20-item SAI and for the factor solution retained, following Phase 2 comparative model assessment (Byrne, 1989). The reliability analysis was conducted with SPSS PC v. 9.0 software and scores were considered to be reliable if coefficient alpha was at least .70 (DeVellis, 1991; Spector, 1992).

Validity

Convergent Construct Validity. To answer the research question, "What is the relationship between the SAI and theoretically related constructs?" scores on the SAI

were correlated with scores on 3 standardized self-report measures and 2 variables assessed using the Demographic Survey designed for this study. In order to differentiate between social work self-efficacy, which a judgment of task-specific capacity, and optimism, which is a more general "explanatory style" characterized "by positive thinking and maintaining a positive attitude toward the future"(Pajares, in press, p. 2), scores on the SAI were expected to correlate moderately, in a positive direction, with scores on the Life Orientation Test (LOT-R) (Scheier, Carver, & Bridges, 1994). Similarly, it was expected that scores on the SAI would correlate moderately, although not perfectly, in a positive direction with scores on the Social Work Self-Concept (SWSC) scale, as self-efficacy is a situation or task specific appraisal rather than an enduring personality trait. Bandura (1997) has indicated that high levels of anxiety can negatively impact self-judgments. Hence, scores on the SAI were expected to correlate significantly in a negative direction with scores on the Clinical Anxiety Scale (CAS) (Thyer, 1987). Based on the fact that performance accomplishment is the primary source for developing a sense of perceived self-efficacy (Bandura, 1997), the length of professional social work experience reported by students was expected to correlate significantly in a positive direction with scores on the SAI. In addition, students enrolled in an MSW program should exhibit more perceived self-efficacy than those enrolled in a BSW program, as they would have had more opportunities for academic and professional accomplishment and vicarious learning. Class standing was, therefore, expected to correlate significantly in a positive direction with scores on the SAI.

Discriminant Construct Validity. To answer the research question, "What is the relationship between the SAI and theoretically distinct constructs?" scores on the SAI

were correlated or compared with the score on one standardized self-report measure and 2 variable assessed using the Demographic Survey. Because the construct of perceived self-efficacy is theoretically distinct from constructs that reflect a general sense of psychological well-being or self-worth (Bandura, 1997), scores on the SAI were expected to correlate minimally with scores on the Center for Epidemiological Studies Depression (CES-D) scale (Radloff, 1977). As it is possible for a student to feel very confident in their professional abilities, yet be dissatisfied with their academic field placement, it was expected that scores on the SAI would not correlate with responses to the question, "How well do you feel your field experience has prepared you for social work practice?" included in the Demographic Survey. Prior research has indicated that the theoretical orientation of professional counselors has no bearing on counselor behavior or self-efficacy (Larson, Suzuki, Gillespie, Potenza, Bechtel, & Toulouse, 1992). Given the apparent similarities between professional counseling and social work, it was expected that scores on the SAI would not be significantly related to professional theoretical orientation, as reported on the Demographic Survey. This final assumption was tested by comparing the mean score differences among respondents, due to the categorical nature of the theoretical orientation variable (Nunnally & Bernstein, 1994).

Summary

This chapter reviewed the two phases of empirical scale development that led to the creation of a new, multi-dimensional measure of social work student self-efficacy for use in academic settings. Initially, a representative pool of scale items was drawn from the CSWE (2001) EPAS and submitted to a group of subject matter experts, who evaluated the items for content validity. A 71-item pilot version of the new self-efficacy

scale was subsequently administered to a small group of students in order to receive feedback regarding comprehension and relevance of content from a group similar to that for which the final scale is intended. In addition, an exploratory factor analysis was conducted to provide empirical guidance for the factor structure tested in Phase 2. This process resulted in a 34-item version of the SAI-P. In Phase 2, a 37-item version of the SAI was administered to a new sample of BSW and MSW students from 5 different CSWE-accredited schools of social work. Data from these respondents were used to compare two hypothetical structural models, whose specification was guided by the Phase 1 findings and the content divisions present in the most recent version of the CSWE (2001) EPAS, using confirmatory factor analysis. The results of these analyses and potential implications for social work education are discussed in the following two chapters.

CHAPTER 4

RESULTS

This chapter reports the results of both Phase 1 and Phase 2 of this investigation. For Phase 1, the results of the instrument development steps, sample characteristics, item analyses, and reliability analyses are presented, followed by the exploratory factor analysis findings. For the preliminary validation study that comprised Phase 2, descriptive sample characteristics are presented, followed by the results of a preliminary item analysis. The comparative findings of two confirmatory factor analyses are presented, prior to the results of a final reliability analysis, and convergent and discriminant construct validity analyses.

Phase 1

Face and Content Validity

Seven Ph.D. level subject matter experts provided qualitative and quantitative feedback on the initial 66-item pool. Five of these experts were tenured or associate professors in CSWE-accredited schools of social work, while two were tenured professors in departments of psychology, with particular expertise in the area of self-efficacy research. As discussed in the preceding chapter, these experts were asked to evaluate how well each of the 66 items, generated by the primary investigator from the CSWE (2001) EPAS, reflected the content described by the aforementioned document (see Appendix A). To do this, experts used both a 3-point scale and written item-specific commentary to provide feedback to the primary investigator.

Scored responses to the Face Validity Assessment instrument (M = 120.14, SD = 5.64) ranged from 113 to 128, where 0 = "No, Not Appropriate Item," 1 = "Not Sure," and 2 = "Yes, Appropriate Item" (see Appendix B). The majority of items were considered appropriate, although a significant amount of qualitative commentary was also provided. These comments primarily focused on the "contextualization" of items (Woolfolk & Hoy, 1990), which was considered both "distracting" and "unnecessary" by experts. For example, the item: "Ensure that social services provided are relevant to the cultural group in need, even when your service agency resists change," was changed to read: "Ensure that the services provided to clients of an ethnic minority are culturally relevant." Many of the items were deleted or altered to make the task-statement shorter or to remove ambiguous terminology, thereby improving readability and item specificity. The following 20 new items were added, as a result of the expert commentary:

1. Recognize how your personal values may intrude in your work?
7. Describe in detail the ethical foundation of professional social work?
12. Describe the effects of cultural diversity on practice in a non-judgmental manner?
17. View situations from the perspective of a client from a different cultural background?
19. Describe the effects of ethnic diversity on social research?
20. Conduct ethnically-sensitive social work research?
28. Make sure that clients of a different socio-economic status than yourself have equal access to resources?
29. List specific ways that social service agencies promote non-discrimination?

30. Resolve conflicts between discriminatory service agency policies and your client's needs?
35. Describe how different social systems promote client well-being?
37. Describe, in detail, the interaction between a social and economic system impacting clients?
38. Define the meaning of "system-theory?"
43. Analyze a specific piece of social policy legislation?
44. Identify historical trends in social welfare policy at the national level?
45. Demonstrate a comprehensive understanding of political systems that impact client services?
53. List the information you need to clinically assess clients in a practice setting that you are familiar with?
57. Respond to every problem presented by an individual client in the most clinically appropriate manner?
58. Make sure that all clients in a small group setting benefit from participation in that group?
59. Use empirically based methods to intervene in a community?
71. Describe how a current piece of social work research might impact practice?

These items were combined with the remaining original and modified items to create the 71-item pilot version of the Social Work Student Self Appraisal Inventory (SAI-P)(Appendix E). Based on the qualitative and quantitative findings of this group of subject matter experts (DeVellis, 1991), the SAI-P demonstrated good content and face validity, in relation to the criterion measure: the CSWE (2001) EPAS.

Pilot Sample Characteristics

Overall, of the 200 measurement packages distributed for Phase 1 of this study, 161 (80.5%) were returned from both universities. To compare institutional rates, of the 160 instruments distributed at the University of Georgia (UGA), 129 (80.6%) were returned, while 32 (80%) of the 40 distributed at the University of Arkansas, Fayetteville (UAF) were returned. An additional 16 (1%) of the instruments from UGA and 8 (2%) of the instruments from UAF were excluded from all analyses due to missing data. After accounting for this change, the effective response rate for Phase 1 was 72%. Hence, the final Phase 1 sample consisted of 143 respondents who returned both the complete SAI-P and the Demographic survey. Only those who completed both instruments were included in further analyses and there was not apparent difference between respondents and non-respondents (Rubin & Babbie, 1997)

Demographic characteristics for the Phase 1 sample are presented in Table 1. The sample was characterized by female (87.4%), Caucasian (76.2%), 2nd year MSW (39.2%) respondents, most of whom (79%) had up to one year of field experience (36.4%). In order to support pooling respondents from different schools and of different socio-demographic characteristics, a 2 (gender) x 2 (university) factorial analysis of variance (ANOVA) for SAI-P means was conducted. No significant main effect for gender, $F(1, 139) = 1.99$, $p > .05$, or university, $F(1, 139) = 1.32$, $p > .05$, was found, nor was their a significant interaction between gender and university, $F(1, 139) = 2.13$, $p > .05$. Because only African American ($n = 25$) and Caucasian ($n = 109$) groups were of adequate size for analysis, an independent t test was conducted to compare these groups. The results of this test, $t (132) = 1.34$, $p > .05$, found that the mean of African American respondents (m

= 7.09, sd = 1.74) was not significantly different from that of Caucasian respondents (m = 6.66, sd = 1.39). Based on the results of these comparative analyses, all Phase 1 respondents were considered to be part of the same population.

To address the assumption of sampling normality (Nunally & Bernstein, 1994), the Phase 1 sample was compared to the national population of students enrolled in CSWE-accredited schools of social work (Lennon, 2002). The results of this comparison are displayed in Table 2. For the purposes of this study, data for the national BSW and MSW populations were combined, where possible, to account for the fact that the Phase 1 sample included both baccalaureate and master's level students. Due to the limited availability of national social work student descriptive information, only relative percentages were presented (Lennon, 2002). The Phase 1 sample approximated the national population in terms of gender and ethnicity. However, the sample included more second year graduate students (22.4%) and more students under the age of 25 (28.4%).

Item Analysis

As the first step in the Phase 1 item analysis, respondents were asked to provide qualitative feedback regarding item wording, clarity, and face validity, to answer the research question, "Do baccalaureate- and master's-level social work students find SAI-P items clear and understandable?" Students primarily commented on the difficulty of particular tasks, noting how "impossible" or "crazy" particular items seemed. Others commented that certain tasks seemed "too easy" or that the wording was "vague," such that they were unsure how to respond. The following 10 items were deleted completely from the scale, following a review of qualitative student comments:

30. Demonstrate an awareness of your personal values without imposing them on a client?
31. Describe to a client how ethical dilemmas impact the services they receive in language that they can easily understand?
6. Consistently make ethical decisions in a practice setting, even when your co-workers do not?
21. Describe the effects of different forms of oppression on clients?
46. Demonstrate a comprehensive understanding of political systems that impact client services?
50. Articulate social welfare policy issues to people outside of the social work profession in terms they can easily understand?
52. Help clients who appear unmotivated to recognize personal resources related to problems they have identified?
54. Assemble information for case assessment even when confronted by an uncooperative client?
56. Collaborate with clients for treatment planning when presented with an unfamiliar problem?
70. Clearly communicate an understanding of social work research literature in writing?

For the second step in the Phase 1 item analysis, the distribution of item responses was examined to answer the research question, "Which items on the SAI-P adequately discriminate among respondents?" An important initial task when pilot testing a new scale is to examine descriptive statistics for the questionnaire to help eliminate any

problematic items (Field, 2000) prior to factor analysis. Hence, initial scale score statistics, such as item means, standard deviations, and ranges were calculated for the 61 retained items. Descriptive item statistics for the SAI-P are displayed in Table 3. The following 3 items were removed because of extreme standard deviation values, relative to reported item means:

53. List the information you need to clinically assess clients in a practice setting that you are familiar with?
60. Consult with your supervisor regularly to enhance practice?
64. Use computer information systems to analyze social work research?

Any item that had a limited range (e.g., fewer than 7 data points used) was deleted, as it failed to differentiate adequately among respondents (Bandura, 2001; Field, 2000). The following 6 items demonstrated range restriction and were removed:

10. Advance professional values in a non-social work setting?
18. Promote respect for cultural diversity among your co-workers?
22. Implement a strategy to combat oppression when confronted by discriminatory actions?
23. Describe what it means for a population to be "at-risk?"
39. Define the meaning of a "system-theory?"
42. Describe how a well-known piece of social welfare policy has affected social work services?

The third step in the Phase 1 item analysis involved the calculation of a table of item inter-correlations (e.g., an R-matrix) for the 52 remaining items. Pearson correlation coefficients for all item pairs and one-tailed significance levels (p-values) for each

coefficient were examined. If an item failed to correlate significantly at either the 5% or 1% level with more than one other item, it was deleted (Field, 2000). In addition, Bartlett's test of sphericity was examined to determine whether the matrix resembled an identity matrix, defined as a situation in which "variables correlate very badly with all other variables"(Field, 2000, p.446). Since a successful factor analysis requires relationships between variables, it was important for Bartlett's test to be significant (Field, 2000). The results of Bartlett's test of sphericity provided quantitative evidence that the R-matrix was not an identity matrix ($x2\ (561) = 3540$, $p < .000$); therefore, factor analysis was appropriate for the Phase 1 data.

To minimize multicollinearity (i.e., an excessively high degree of correlation among variables), if any item pair in the R-matrix correlated too highly ($R > 0.8$), one of the problematic items was selected for removal. In addition, the determinant of the R-matrix was examined (Field, 2000). Despite the elimination of highly correlated variables (listed below), the determinant of the R-matrix (1.436E-12) remained less than the critical value of 0.00001 (Spector, 1992), indicating that multicollinearity was a problem. Although this finding raised questions about the content of items included in the SAI-P, it supported the notion that social work student self-efficacy might be a unidimensional construct, and thus contributed to the exploratory data analysis process.

Due to the relatively small sample collected for Phase 1 and the questionable value of the determinant of the R-matrix, an additional criterion was used to support the decision to conduct an exploratory factor analysis. The Kaiser-Meyer-Olkin (KMO)(Kaiser, 1974) measure of sampling adequacy was examined to determine whether the pattern of correlations in the data were "relatively compact and so factor

analysis should yield distinct and reliable factors"(Field, 2000, p.455). The KMO value for the Phase 1data was .924, which is considered to be "superb," according to Kaiser's guidelines (1974).

Exploratory Factor Analysis

To answer the research question, "To what degree do individual items on the SAI-P reflect the overall construct of social work student self-efficacy and the related constructs of social work policy, values, human behavior in the social environment, practice, ethics, and research?" an exploratory factor analysis was conducted on the remaining 39 items, using Maximum Likelihood (ML) estimation, as this is considered to produce the best parameter estimates (Pedhazur, 1997) and the direct oblimin method of oblique rotation, as any extracted factors were expected to correlate (Field, 2000; Spector, 1992).

Six Factor Solution

SPSS extracted 6 factors initially, using Kaiser's (1960) criterion, with the first factor accounting for 41.9% of the total variance after rotation. SPSS employed Kaiser's criterion, by default, which extracts all factors with an eigenvalue greater than 1 (Field, 2000). Additional criteria used to determine which factors to retain included Cattell's (1978) scree test, the absolute value of factor eigenvalues, and the interpretability of rotated factors Field, 2000; Spector, 1992).

The result of Cattell's (1978) scree test is displayed in Figure 3. The scree plot is read by looking for a clear "break" or "turn" in the line connecting plotted eignevalues on the graph (Spector, 1992). Based on the data curve presented in the scree plot, the retention of 4 factors was justified. This finding resulted in the subsequent generation of a

4 factor solution for the SAI-P(discussed below). In addition, this was viewed as support for the idea that social work student self-efficacy could be characterized by fewer than 7 content domains or factors.

Typically, individual factor loadings with an absolute value less that 0.3 are considered too weak to contribute meaningfully to a common factor (Field, 2000; Stevens, 1992). Based on this criterion, loadings within the rotated pattern matrix were examined and the following 5 items were removed:

8. Provide services in a professionally ethical manner even when it conflicts with your personal values?

20. Conduct ethnically-sensitive social work research?

33. Define what it means for a theory of human behavior to be "empirically-based?"

40. Use an empirically supported theory of behavior to effectively serve an unfamiliar client group?

55. Develop a comprehensive plan for service provision?

These deletions resulted in a final 34-item version of the SAI-P. The rotated 6-factor matrix for this version is displayed in Table 4, along with individual item communality estimates.

The first of six identified factors, with 5 items, was labeled "Policy," and had loadings ranging from .32 to .90. This factor composed 41.9 percent of the total variance and items seemed to reflect the ability to describe and discuss basic social welfare policy issues, with the exception of item 66. Item 66 pertained to the use of qualitative research methods and also loaded significantly (.30) on the Research factor. The second factor,

with 9 items, was labeled "Values," and had loadings ranging from .50 to .85, accounting for 7.5 percent of the total variance. Items that were developed from EPAS (CSWE, 2001) content on social work values and diversity both loaded significantly on this factor, providing for a factor that reflects basic social work ethical and cultural competencies. The third factor, with 6 items, was labeled "Human behavior in the social environment (HBSE)," and had loadings that ranged from .40 to .97, accounting for 3.6 percent of the total variance. Items that loaded significantly in the HBSE factor asked for performance appraisals related to basic knowledge and theories of human behavior, with the exception of Item 68. The content of Item 68 was related to the use of quantitative statistics in researching service delivery and also loaded significantly (.32) on the Research factor. The fourth factor, with 5 items, was labeled "Practice," and had loadings that ranged from .33 to .81, accounting for 3.25 percent of the total scale variance. Item content pertained to general social work practice tasks related to work with individuals, small groups, and communities. The fifth factor, with 5 items, was labeled "Ethics." Factor loadings ranged from .46 to .84 and accounted for 3.78 percent of the total variance, after rotation. All items in the fifth factor concerned student knowledge and abilities related to social and economic justice issues. The sixth and final factor, with 4 items, was labeled "Research" because all items pertained to the collection and analysis of data, in addition to computer use. Two items (Item 66 and Item 68) that were written to reflect research abilities, in fact, loaded more highly on other factors. Given that small sample sizes contribute to unstable parameter estimates (Rubin & Babbie, 1997; Spector, 1992) and the fact that both items also loaded highly on the research factor, these items were

subjected to additional scrutiny during the reliability analysis, to evaluate the possibility of moving them to the Research Subscale.

Four Factor Solution

Field (2000) has recommended that when it is unsafe to rely on Kaiser's (1960) rule for factor extraction, then an EFA should be re-run using Cattell's (1978) criteria as a guide. As noted in the previous section, the scree test for the SAI-P indicated that 4 factors, rather than 6, be extracted. Because Kaiser's criterion is only valid "when there are less than 30 variables and communalities after extraction are greater than 0.7 or when the sample size exceeds 250 and the average communality is greater than 0.6"(Field, 2000, p.459), a second exploratory factor analysis specifying that SPSS extract 4 factors was conducted using responses to the 34-item SAI-P. As in the initial EFA, the direct oblimin method of oblique rotation and ML estimation were selected.

The rotated 4-factor matrix for the second EFA is displayed in Table 5. The first of four factors identified was labeled "HBSE" and accounted for 41.8 percent of the initial variance. It consisted of 15 items, with loadings ranging from .39 to .76, and items reflected a combination of social justice, policy, ethics, and HBSE content. The second factor, with 9 items, was labeled "Values," and had loadings ranging from .50 to .85, representing 7.5 percent of the initial variance. Item content was identical to that found in the Values Subscale for the 6-factor solution. The third factor, with 5 items, was labeled "Research," and had loadings ranging from .44 to .74, accounting for 4.05 percent of the initial variance. The item content was identical to the items included in the earlier Research Subscale, with the exception of one item. Item 63 was designed to reflect the research ability of evaluating personal practice outcomes and loaded significantly on the

Practice Subscale, rather than the Research factor as intended. This is in contrast to the 6-factor solution, wherein Item 68 and Item 66 from the Research Subscale loaded on other factors. The fourth factor included 5 items and was labeled "Practice." It accounted for 3.3 percent of the variance estimated and had loadings ranging from .31 to .80. Only one practice item loaded significantly on an unintended subscale. Item 59 was designed to measure a student's perceived ability to intervene in a community and loaded on the HBSE factor. Otherwise, item content was consistent with the 6-factor solution. Both Item 59 and Item 63 were closely examined during subsequent reliability analyses, to evaluate moving them back to their intended subscales.

Reliability

The results of the initial reliability analysis for the 6-factor version of the pilot social work student Self-Appraisal Inventory (SAI-P) and its Policy, Values, HBSE, Practice, Ethics, and Research Subscales are displayed in Table 6. After examining these results and the subscale item-total statistics presented in Table 7, two items (Item 66 and Item 68) were moved to the research factor to improve subscale internal consistency reliability (Nunnally & Bernstein, 1994). A second reliability analysis was conducted to confirm improved estimates, the results of which are presented in Table 8.

The results of the initial reliability analysis for the 4-factor version of the SAI-P and its Values, Practice, HBSE, and Research Subscales are presented in Table 9. Given the similarities between the two factor solutions and the preceding review of item-total statistics, Item 63 was moved from the Practice Subscale to the Research Subscale and Item 59 was moved from the HBSE Subscale to the Practice Subscale to improve factor

reliability coefficients. A second reliability analysis was conducted to confirm these improvements, the results of which are displayed in Table 10.

After exploring Subscale reliability for both the 6 and 4 factor solutions, the item-total statistics and the alpha-if-deleted values for the entire 34-item SAI-P were reviewed, to ensure that no other variables could be removed to increase overall scale reliability. These item-total statistics for the scale as a whole, regardless of factors, are displayed in Table 11.

According to Springer, Abell, and Nugent (in press), instruments capable of producing sets of scores with a reliability (alpha) ranging from .90 to .95 are "very good," while those with alpha coefficients > .95 are excellent. However, DeVellis (1991) has noted that while alpha levels greater than .90 are "very good," they are also indicative of a possible need to reduce the number of items included in the measurement instrument. Based on the results of the Phase 1 reliability analyses, both the 6 and the 4 factor versions of the pilot social work student Self-Appraisal Inventory (SAI-P) were considered to be very reliable measures.

Phase 2

Instrument Modifications

To provide for adequate domain sampling (Springer, Abell, & Hudson, 2002), based on qualitative feedback from Phase 1 respondents, 3 new items were added to the SAI-P item pool prior to the development of the SAI and Phase 2 measurement packages. Given the emphasis placed on practice variables by previous social work self-efficacy scale developers (Holden, Barker, Meenaghan, & Rosenberg, 1999; Holden, Meenaghan, Anastas, & Metrey, 2002) and the fact that the assessment of practice capabilities is

considered a critical element of professional social work education (Dickson & Bamford, 1995), the following 3 items were added to better measure the micro, mezzo, and macro practice expectancies (CSWE, 2001):

8. Provide direct social work services to individual clients.

12. Demonstrate knowledge of effective practice techniques for use with groups.

15. Practice effective community-level social work.

The resulting 37-item version of the SAI administered in Phase 2 is located in Appendix F.

Validation Sample Characteristics

Of the 350 measurement packages distributed during Phase 2, 334 (95%) were initially returned. Table 12 displays the response rates for each school included in the Phase 2 sample, including the proportion of measurement packages returned but later found to be incomplete. Only complete measurement packages were included in the Phase 2 sample. Therefore, the final Phase 2 sample consisted of 301 respondents, for an overall effective response rate of 86%.

Demographic characteristics for the Phase 2 sample are presented in Table 13. The Phase 2 sample was characterized by female (86.4%), Caucasian (56.5%), 1st year BSW (27.2%) respondents with some field experience (57.1%). To support pooling respondents from potentially different populations, a 2 (gender) x 2 (state) factorial analysis of variance (ANOVA) for SAI means was conducted. No significant main effect for gender, $F(1,297) = 1.61$, $p > .05$, or state, $F(1,297) = 3.79$, $P > .05$, was found. Similarly, no significant interaction between gender and university was found, $F(1,297) = .002$, $p > .05$. Although 5 different universities were sampled, the relatively low

numbers of responses from 3 of these schools necessitated grouping schools from the same state together for this analysis. Thus, the University of Arkansas Fayetteville (UAF), University of Arkansas Little Rock (UALR), and Arkansas State University (ASU) comprised one state group, while Georgia State University (GSU) and the University of Georgia Athens comprised the other.

As in the Phase 1 sample, only African American (n = 111) and Caucasian (n = 170) groups were of sufficient size for analysis. An independent sample t-test, t (279) = .348, p > .05, determined that the mean of African American respondents (m = 6.41, sd = 2.23) was not significantly different from that of Caucasian respondents (m = 6.19, sd = 1.70). Based on these results, all Phase 2 respondents were considered part of the same population for further analyses.

To address the assumption of sampling normality (Nunally & Bernstein, 1994), the Phase 2 sample was compared to the national population of students enrolled in CSWE-accredited schools of social work (Lennon, 2002). The results of this comparison are displayed in Table 14. The Phase 2 sample approximated the national population regarding gender and distribution of baccalaureate and graduate students. The sample differed by including more students who belonged to a minority (13.8%) and more students under the age of 25 (20.2%) and between 31 and 40 (38.2%).

Phase 2 Initial Item and Reliability Analysis

In order to identify any potential distributional problems with the Phase 2 data prior to factor analysis, responses to the 37-item SAI were subjected to quantitative item analysis (Crocker & Algina, 1986). First, item means, standard deviations, and ranges,

displayed in Table 15, were reviewed and the following item was deleted because the value of its standard deviation was high, in relation to its mean:

7. Describe the different administrative policies required to deliver effective social services.

Next, an R-matrix was generated for the remaining items and Pearson product-moment correlations for each item pair were examined. Although no two items correlated higher than 0.9, the following twelve pairs demonstrated correlations over 0.8:

1. Items 6 and 4 correlated at .829
2. Items 11 and 23 correlated at .809
3. Items 23 and 29 correlated at .802
4. Items 20 and 18 correlated at .830
5. Items 18 and 7 correlated at .801
6. Items 18 and 26 correlated at .826
7. Items 7 and 26 correlated at .828
8. Items 12 and 9 correlated at .817
9. Items 37 and 13 correlated at .821
10. Items 13 and 1 correlated at .850
11. Items 1 and 16 correlated at .861
12. Items 30 and 28 correlated at .865

Given the level and frequency of these high correlations, the determinant of the R-matrix was examined. The determinant of the R-matrix for the 36 retained items was equal to 2.735E-18. The determinant for the R-matrix reflects the overall level of correlation among the variables and values less than .00001 are an indication of extreme

multicollinearity among observed variables (Field, 2000). Byrne (1989) has noted that extreme multicollinearity can cause problems with structural equation model identification and produce unstable parameter estimates. Hence, items that correlated highly (e.g., > 0.6) with more than 7 other variables were sequentially deleted from 36-item pool, and the determinant recalculated, until the value of the determinant was greater than .00001 (Field, 2000). The following items were deleted due to multiple high correlations coefficients:

31. Demonstrate the ability to integrate professional social work ethics into practice.

25.Perceive how cultural differences influence social work practice.

35.View situations from the perspective of a client from a different cultural background.

15. Promote economic equality for the clients you work with.

5. Make sure clients of a different socioeconomic status than yourself have equal access to resources.

33. List specific ways that social service agencies promote non-discrimination.

11. Describe how different social systems promote client well-being.

29. Demonstrate the ability to use one empirically-based theory of behavior in a practice setting.

26. Explain the issues affecting social welfare policy to elected officials.

22. Consistently focus on client assets/strengths related to issues raised during intervention rather than their problems.

9. Provide direct social services to individual clients.

37. Make sure that all clients in a small group setting benefit from participation in that group.

1. Use empirically-based methods to intervene in a community.

19. Ask questions during supervision that will improve practice outcomes.

17. Set aside enough time to gather the information you need to evaluate your personal practice outcomes.

The process of item deletion resulted in a 21-item pool with an acceptable determinant value equal to 4.913E-05.

To answer the research question, "Which items on the SAI can be eliminated to create a shorter, more reliable measure?" Cronbach's coefficient alpha was calculated for the 21 retained items. No attempt was made to calculate the reliability of separate subscales at this stage, as the underlying factor structure remained uncertain. The corrected item-total correlations and alpha-if-deleted scores for the 21-item SAI are displayed in Table 16. The overall alpha for the 21 items was equal to .9621. Item 14 was deleted from the scale because its alpha-if-deleted value exceeded that of the scale as a whole (Field, 2000). After removing Item 14, the reliability estimate for the remaining 20 items improved, with alpha equal to .9623.

Finally, the 20 retained items were qualitatively reviewed by the primary investigator. At least two items designed to represent each of the six content domains specified by the CSWE (2001) EPAS remained in the item pool. Thus, the SAI maintained a level of content validity, regarding current social work policy and accreditation standards. The final 20-item version of the SAI subjected to confirmatory factor analysis is presented in Appendix K.

Confirmatory Factor Analysis

"The most important issue associated with the analysis of LISREL models is the assessment of fit between the hypothesized model and the sample data"(Byrne, 1989, p.54). If the goodness-of-fit for a restricted (hypothesized) model is inadequate, the next step is to explore possible sources of misfit within the model. Hence, the overall goodness-of-fit for both the restricted (hypothesized) 6-factor and 4-factor models were compared. The feasibility of parameter estimates, the adequacy of all measurement models, and the goodness-of-fit of individual model parameters were established before a determination of overall model fit is made (Byrne, 1989).

Goodness-of-Fit of the Overall Models

The fit indices for the initial confirmatory factor analysis of both the 6-factor and the 4-factor models are displayed in Table 17. As discussed in the previous chapter, the criteria for acceptable model fit included a $\chi 2$/df ratio less than 3 (Bollen , 1989), a RMSEA less than .80 with a small confidence interval, and GFI, AGFI, and NNFI values greater than .90 (Byrne, 1989). Based on these summary fit measures, both models fit the Phase 2 data reasonably well. In comparison, the 6-factor model had a slightly superior $\chi 2$/df ratio (2.4) and appeared to fit the hypothetical population data better (RMSEA = .064). Likewise, because a GFI value of .90 is considered the minimum acceptable value for a well-fit model (Hoyle & Panter, 1995), the 6-factor model appeared to be a better fit for the Phase 2 data (GFI = .90), when compared to the 4-factor model (GFI = .88) or to no model at all (Joreskog, 1993). However, when the degrees of freedom were taken into account, the two models were equivalent (6 factor AGFI = .86 and 4 factor AGFI = .85). Taking model complexity into account is critical to SEM, in that "models with more parameters can better fit data (other things being equal) by capitalizing on chance

fluctuations in the sample" (Bollen ,1989, p.289). Parsimoniously, simpler models are thus preferable to more complex models (Joreskog, 1993).

Feasibility of Parameter Estimates

To evaluate the feasibility of parameter estimates, the (a) variance/covariance matrices, (b) parameter estimates, (c) standard errors, and (d) parameter t-statistics were examined for negative or non-significant values (Byrne, 1989). No negative values within the variance/covariance matrices were identified for either model. Table 18 presents the factor loadings, standard error estimates, and significance tests for the 6-factor solution. Table 19 presents the same data for the 4-factor model. For both models, the parameter estimates were considerably larger than their standard errors. Therefore, "the ratios of the estimates to their standard errors do not suggest problems with the fit of the individual components"(Bollen, 1989, p.286) Factor loadings for the 6-factor model ranged from .50 to .90, while those for the 4-factor model ranged from .52 to .90. All items loaded on their intended factor and were statistically significant, as indicated by the value of the t-statistics provided by LISREL.

During this review of variance/covariance matrices, it was noted that the 6-factor solution produced a PHI matrix designated "not positive definite" by LISREL (Joreskog & Sorbom, 1999). The PHI matrix reflects the variance and covariance among the hypothesized latent variables in a given model (Byrne, 1989). When LISREL defines a matrix as "not positive definite," this simply means that all of the eigenvalues for that matrix are positive (Rigdon, 1997). This is problematic because the identification of model solutions using ML estimation relies on matrix inversion, which will result in an

undefined solution if the elements of all vectors (eigenvalues) are positive (Rigdon, 1997). If such an error message refers to a variance/covariance matrix, however, Rigdon (1997) has stated that the situation "can result from correct specification of the model, so the only problem is convincing the program to stop worrying about it"(Rigdon, 1997, p.1). Alternately, Byrne (1989) and Joreskog and Sorbom (1999) have indicated that some forms of nonpositive-definite matrices can be caused by model misspecification and lead to inaccurate parameter estimation. In contrast, all matrices for the 4-factor solution were positively identified. This result suggested that the parameter estimates for the 4-factor solution were potentially more stable and reliable (Byrne, 1989).

Next, the correlations among the subscales for each factor solution were examined. Table 20 displays the correlations between the Values, Practice, Policy, Ethics, HBSE, and Research Subscale for the 6-factor model. Table 21 displays the correlations between the Values, Practice, HBSE, and Research Subscale for the 4-factor model. In both cases, significant correlations were identified among the subscales, further confirming the notion that social work student self-efficacy is a multidimensional construct. However, in the 6-factor solution, the correlations among the Policy, Ethics, and HBSE Subscales were all excessively high (e.g., greater than 1.0). These represented unacceptable parameter estimates and further supported rejection of the 6-factor solution (Byrne, 1989).

Adequacy of the Measurement Model

To determine how well each latent factor (e.g., measurement model) is represented by the observed variables, the squared multiple correlation (R2) for each item was inspected. The R2 values for the 6-factor solution are displayed in Table 18 and

ranged from .25 to .81. This indicated that at as little as 25 percent of the variance of the observed variables was accounted for by their accompanying factor. The R2 values for the 4-factor solution are displayed in Table 19. These values ranged from .27 to .81, indicating that at least 27 percent of the observed variance was accounted for by the latent factors. Notably, the R2 values for Items 9 through 16 were low, regardless of the associated model, indicating that these were the least reliable estimates of a latent factor (Byrne, 1989).

Goodness-of-Fit of Individual Model Parameters

There were two methods used to assess the goodness-of-fit of individual model parameters. The first method was to examine the test statistic provided by LISREL for each parameter estimate. Assuming an alpha level of .05, values of this t-statistic > 1.96 indicated that the estimate was significantly different from zero. As mentioned earlier in this chapter, all factor loadings for both models were statistically significant and thus important to their hypothetical models (see Tables 18 & 19).

The second method used to assess the goodness of fit of individual model parameters was to review the modification indices (MI) provided by LISREL for each fixed parameter. "This value represents the expected drop in $\chi 2$ if a particular parameter were freely estimated"(Byrne, 1989, p.57). Thus, large MI's (e.g., MI > 5.0) suggested possible sources of model misspecification and thus offered an opportunity to improve the overall fit through respecification and reestimation of the model (Byrne, 1989; Joreskog & Sorbom, 1999). At this point, further analyses were considered to be exploratory, rather than confirmatory, and all changes had to be theoretically defensible (Bollen, 1989; Byrne, 1989).

Model Selection

Prior to exploratory post hoc model-fitting, it was important to decide whether further model generation and re-specification was necessary for the both of the initially-fitted models (Byrne, 1989; Joreskog & Sorbom, 1999). According to Joreskog's (1993) recommendations, two criteria were considered: (a) each model's empirical goodness-of-fit for the given data, and (b) the theoretically substantive reasons that supported post hoc modification. "Ideally, subject matter expertise should be combined with several empirical guides"(Bollen, 1989, p.305), to decide whether inadequate models are respecified. With respect to the overall fit of each model, both the 6 and 4 factor models of social work student self-efficacy fit the Phase 2 data reasonably well (see Table 17). When using such estimates to compare two different models, fit to the same data, it is important to remember that "model fit measures are still descriptive statistics; they do not allow tests of statistical significance" (Bollen, 1989, p.289). Therefore, the strengths and weaknesses of each model were considered from both an empirical and a theoretical perspective.

The 6-factor model was characterized by the following strengths:

1. The hypothesized 6-factor structure reflected content domains present in the public draft version of the CSWE (2000) EPAS.
2. The 6-factor solution had a lower initial $\chi 2$ value than the competing model.
3. The 6-factor solution achieved the minimum GFI value = 0.9, representing a well-fit model.
4. The 6-factor solution had a very good NNFI value = .95

The following weaknesses mediated selection of the 6-factor model:

1. Superior fit index values for the 6-factor model were highly dependent on model complexity.
2. The 6-factor solution had a slightly less precise RMSEA estimate than the competing model (90% CI .055-.073).
3. The 6-factor model fit the hypothetical population data just as well as the simpler model, once degrees of freedom were taken into account (AGFI = .86).
4. The PHI matrix was "Not Positive Definite," hence there was a possibility that parameter estimates for the model were unreliable.
5. There were extreme (> 1.0) correlations found among 3 latent factors in the 6-factor model. These same 3 factors were represented by a single, unified factor and the same observed variables in the competing model.
6. The Policy and Ethics Subscales were each comprised of 2 indicators, a condition that has been associated with subsequent biased parameter estimation and negative error variance (Bollen, 1989).

The following strengths characterized the 4-factor model of social work student self-efficacy:

1. The scale, as a whole, incorporated item content that reflected all of the content domains present in the current CSWE (2001) EPAS.

2. The 4-factor model had essentially the same $\chi 2$/df ratio as the 6 factor model (2.52 vs. 2.4, respectively).
3. The 4-factor model had a slightly more precise RMSEA estimate (90% CI = .059 - .076).
4. The 4-factor model had essentially the same GFI, AGFI, and NNFI values as the 6 factor model (see Table 17).
5. All matrices estimated for the 4-factor model were positive definite. Thus parameter estimates for the model were likely to be feasible (Byrne, 1989).
6. No extreme correlations were identified between Subscales. This finding was consistent with the hypothesized structural model, in that all factors were moderately related but independent.
7. The 4-factor model represented a more parsimonious explanation for the construct of social work student self-efficacy, and was thus preferable to the 6-factor model (Bollen, 1989; Joreskog, 1993).

The following weaknesses of the 4-factor model were considered when deciding which model to retain for post hoc analyses:

1. The 4 factors do not explicitly reflect the content divisions presented in either the public draft or current version of the CSWE (2000, 2001) EPAS.
2. The initial value for the 4-factor minimum fit $\chi 2$ (413.54, df = 164) was higher than that for the 6-factor solution.

3. The value of GFI (.88) indicated that the fit of the 4-factor restricted model could be improved.

In the end, it was important to consider that "differences in these fit measures are still descriptive statistics; they do not allow tests of statistical significance"(Bollen, 1989, p.289). Therefore, with respect to the relative empirical and theoretical strengths of each model, the 4-factor model was retained for further exploratory post hoc testing (see Figure 2).

Exploratory Post Hoc Analysis

As mentioned in Chapter 3, a model generating approach to confirmatory factor analysis was used to establish a well-fitting model of social work student self-efficacy to the Phase 2 data (Joreskog, 1993). Because the alteration of a single parameter in a structural model can result in significant changes in other parameter estimates, modifications were made one at a time (Joreskog & Sorbom, 1999). Models were re-estimated after each modification and the overall fit was assessed, until a well-fit and substantively meaningful result was obtained. A summary of the respecification steps and associated fit indices for the 6 models that were ultimately tested are illustrated in Table 22. For the purposes of describing MI's reported by LISREL, item numbers relate to the order in which they were read by the LISREL syntax, rather than their order in the scale distributed during Phase 2 data collection. Because strictly data-driven model respecification can result in theoretically indefensible models (Joreskog & Sorbom, 1999), the justification for each modification has been discussed below.

Initial Mode

To begin, the modification indices (MI) for the retained 4 factor model were reviewed. The largest MI was 23.89 for LX (17,2). This parameter represented the cross-loading between Item 17 (Use relevant qualitative methods to research social work practice.) and the Practice Subscale. From a psychometric perspective, this loading might reflect the fact that Item 17 tapped a factor that was not included in the SAI, but that is related to both Practice and Research capacity. It was very likely that the mention of practice in Item 17 was responsible for the cross-loading. Based on the substantive meaningfulness of this alteration, a new model (Model 2) was specified in which LX (17,2) was freely estimated.

Model 2

The estimation of the second model resulted in a $\chi 2$ (163) = 386.85. Although this represented a significant improvement in $\chi 2$ ($\Delta\chi 2$ (1) = 26.69, $p < .001$), the fact that the χ/df ratio (2.37) remained above 2 and the GFI (.89) below 0.9 indicated that a substantial amount of misfit remained. The largest MI for Model 2 was 17.64 for TD (4,3). Considering the moderate correlation among the four social work student self-efficacy factors identified in the initial CFA, this finding was not a surprise. MI's in the TD matrix reflect correlated measurement error between observed variables. According to Byrne (1989), such measurement error

> frequently results from random error introduced by a particular measurement method; one example is that of method effects derived from the item format associated with subscales of the same measuring instrument. (p.92)

Based on this observation and the fact that Item 4 and Item 3 both load on the same Values Subscale, the model was respecified with TD(4,3) freely estimated.

Model 3

The results of the third model reestimation yielded a $\chi 2(162) = 367$ and the value of the GFI (.90) indicated a well-fit model (Bollen, 1989). The $\chi 2$/df ratio (2.27) was acceptable (Bollen, 1989) but remained above the more conservative cutoff recommended by Byrne (1989) of 2.0. The largest MI for Model 3 was 15.20 for TD(12,5). Although Item 12 and Item 5 were intended to reflect different content areas, it was possible that students who had a detailed knowledge of the ethical foundation of social work (as per Item 5) were equally knowledgable about relevant philosophy of science perspectives (as per Item 12). It was also possible that the covariance between factors was simply a manifestation of nonrandom error introduced by the similar item format (Byrne, 1989). Hence, a fourth model was specified, with TD(12,5) freely estimated.

Model 4

Running the fourth model resulted in a moderate improvement in the $\chi 2(161) = 351.29$ and ratio of $\chi 2$/df (2.18). All other indices remained relatively unchanged. The largest MI was 13.76 for TD (12,9). Despite the fact that both Item 12 (Analyze different theories of human behavior using a well-defined philosophy of science perspective.) and Item 9 (Analyze a specific piece of social policy legislation.) belonged to the HBSE Subscale, correlated error terms can indicate that two items have something in common that is not measured by the model (Bollen, 1989). Because there were many possible

ways in which analytical ability might generalize between specific tasks, a fifth model was specified with TD (12,9) freely estimated.

Model 5

The estimation of Model 5 resulted in a $\chi 2(160)$ value of 335.78 and a ratio of $\chi 2/df$ equal to 2.10. The largest MI was 12.98 for TD (15,3). Item 15 (Discuss empirical studies that support what you know about human behavior.) and Item 3 (Bridge cultural differences when working with clients who make you feel uncomfortable.) loaded on different Subscales, but it is possible that one's knowledge of human behavior in general is somehow related to cultural-competence. Thus, a sixth model was estimated with TD (15,3) freely estimated.

Model 6

After freeing TD (15,3), the model estimated yielded a $\chi 2$ (159) value of 322.31 and a ratio of $\chi 2/df$ equal to 2.03. The largest MI for Model 6 was 12.72 for TD (16,2). Given that there was no clear connection between Item 16 (Use quantitative statistics to research the effectiveness of social service delivery.) and Item 2 (Assess the service needs of different cultural groups without bias.), and the fact that the overall fit of the model was statistically reasonable, no further modifications were made to the hypothesized model. Certainly, with such a high $\chi 2$ value (322.31) and 159 degrees of freedom, a moderate degree of misspecification remained in the final model. That said, when there is no longer a substantive justification for adding new parameters to a model, then post hoc testing runs the risk of over-fitting the model, based purely on statistics (Joreskog, 1993). A schematic representation of the final 4-factor model of social work student self-efficacy is shown in Figure 4.

Phase 2 Reliability Analysis

In order to answer the research question, "To what extent are the SAI and its subscales internally consistent?" Cronbach's coefficient alpha was calculated for 20-item SAI and its Values, Practice, HBSE, and Research Subscales using SPSS v. 9.0. Table 23 presents the item-total statistics for the Values, Practice, HBSE, and Research Subscales of the 4-factor SAI. Corrected item-total correlations and alpha-if-deleted scores for the 20 items included in the scale as a whole, regardless of subscale, were presented previously in Table 16. A review of theses reliability indices suggested that no additional items needed to be removed from the SAI or any of its subscales to improve reliability. The internal consistency reliability estimates (n = 301) for the complete SAI and the individual subscales were as follows: 20-item SAI (α = .9623), Values (α = .8978), Practice (α = .8901), HBSE (α = .9247), and Research (α = .9241). Based on this analysis, the final 20-item version of the SAI and its subscales all demonstrated excellent internal consistency reliability.

Convergent and Discriminant Validity Analysis

To answer the research question, "What is the relationship between the SAI and theoretically related constructs?" Phase 2 responses to the 20-item SAI were correlated with scores on 4 standardized self-report measures and 3 variables assessed using the Demographic Survey developed for this study. Because a total of 36 comparisons (i.e., 35 correlations and 1 ANOVA) were planned, the Bonferroni method was used to adjust for the increased risk of a Type I error that results when multiple tests are conducted on the same data (Field, 2000). To achieve and overall α = .05, the adjusted family-wise error rate for the 36 intended correlations was α = .001 (.05/36). Table 24 presents the results

of the convergent and discriminant construct validity analysis for the 20-item SAI and its subscales.

Evidence of convergent construct validity for the SAI was considered to be significant correlations with the following variables: (a) scores on the LOT-R, (b) scores on the SWSC, (c) scores on the CAS, (d) respondent reported length of professional social work experience, and (e) respondent reported class standing (i.e., BSW through MSW). With respect to convergent construct validity, all relationships were significant and in the expected direction, with the exception of the relation between scores on the SAI and scores on the CAS. All Pearson product-moment correlations between total scores for the SAI and its subscales, and the CAS were negative, as expected, but failed to achieve statistical significance. Given that high self-efficacy scores were significantly correlated with high scores on measures of optimism, social work self-concept, length of professional experience, and more advanced class standing, the SAI and its Values, Practice, HBSE, and Research Subscales were considered to have good convergent construct validity.

Evidence of discriminant construct validity for the SAI was considered to be minimal, non-significant correlations between scores on the SAI and the following variables: (a) scores on the CES-D, and (b) respondent ratings of how well they felt their social work field experience prepared them for practice. In addition, no significant difference in total SAI scores for respondents with different professional theoretical orientations were expected. As evidence of discriminant validity, total scores on the SAI and its Values, Practice, HBSE, and Research Subscales demonstrated negative and non-significant correlations with scores on the CES-D. Likewise, a one-way analysis of

variance (ANOVA) found no significant difference for total SAI scores across the five theoretical orientations, $F(4, 296) = .89$, $p > .05$. Based on these findings, the SAI and its subscales demonstrated good discriminant construct validity. With respect to the relationship between total SAI scores and respondent ratings of how well field experience prepared them for practice, all correlations were statistically significant and in the positive direction. Although this finding was the opposite of what was expected, it supported the notion that additional opportunities for successful performance, such as participating in a field experience, could be related to higher degrees of self-efficacy.

Summary

This chapter described the results of both Phase 1 and Phase 2 of this study. Phase 1 resulted in the development of a 34-item pilot version of the social work student Self-Appraisal Inventory (SAI-P) which demonstrated good content, face, and factorial validity, using exploratory factor analysis. Phase 2 of this study provided foundational evidence of social work student self-efficacy reliability and construct validity. Following the removal of redundant content from the original item pool, two versions of the 20-item social work student Self-Appraisal Inventory (SAI) were compared, using confirmatory factor analysis. The hypothesized 4-factor model (Figure 2) proved to fit the data gathered in Phase 2 better than the 6-factor model (Figure 1), suggested by the public draft version of the CSWE (2000) EPAS. The 4-factor version of the SAI was found to be a reliable instrument, as indicated by high levels of internal consistency, and to have both convergent and discriminant construct validity, as demonstrated by its relationship to other theoretically relevant constructs. Overall, the results of this study provided

preliminary evidence that the SAI is both a reliable and valid scale for the measurement of self-efficacy with baccalaureate and masters-level social work students.

CHAPTER 5

DISCUSSION

Overview

In 2001, the national Council on Social Work Education (CSWE) revised its educational policy and curriculum standards (EPAS) to reflect the wide array of knowledge, skills, and abilities (KSA's) required of graduates from accredited schools of social work. However, little empirical evidence exists linking the skills taught in professional schools of social work with real-world practice outcomes. Likewise, student graduating from baccalaureate and master's level social work programs continue to report feeling unprepared for various practice situations. To monitor and evaluate ongoing educational efforts, programs have traditionally relied on measures that are administered after-the-fact or demonstrate poor predictive validity, such as alumni surveys and standardized tests of student knowledge. In an attempt to improve student confidence with respect to professional capacity, educators have begun to apply Bandura's (1977) construct of perceived self-efficacy in professional schools of social work (Holden, Meenaghan, Anastas, & Metrey, 2002; Koob, 1998). Measures of perceived self-efficacy, related to different areas of social work expertise, have demonstrated promise as alternative outcome measures that are both predictive of future performance and that can be administered throughout the educational process. Before the construct of perceived self-efficacy can be applied in different schools of social work, empirically valid and reliable measurement instruments are required.

The purpose of this two part investigation was to develop and psychometrically evaluate a new, general measure of social work student self-efficacy, named the social work student self-appraisal inventory (SAI), whose content would be applicable to every CSWE-accredited baccalaureate and master's level social work program. The first phase of this investigation focused on three areas related to scale development: (a) the initial development of scale content, based on the most current version of the CSWE (2001) EPAS; (b) the assessment of the factorial validity of the newly developed measure, named the pilot social work student self-appraisal inventory (SAI-P), using exploratory factor analysis (EFA); and (c) the assessment of the reliability of the SAI-P and subscales, by estimating internal consistency. The second phase of this study reflected an initial validation of the SAI, and pursued three lines of inquiry: (a) exploration of the construct validity of the SAI by comparing two possible factor structures for social work student self-efficacy, using confirmatory factor analysis (CFA); (b) assessment of instrument reliability, by estimating internal consistency; and (c) the determination of convergent and discriminant construct validity for the SAI and its subscales.

Phase 1 Discussion

In order to develop a scale with item content that encompassed all of the KSA's mandated by the CSWE (2001) EPAS, a list of potential scale items was generated by the primary investigator. Item content was reviewed by a group of subject matter experts and a 71-item version of the social work student self-appraisal scale (SAI-P) was generated. Having already demonstrated good face and content validity, this scale was administered to a purposive sample of 143 BSW and MSW students enrolled in two different schools of social work.

Responses to the 71-item SAI-P were evaluated and 34 of the items were then subjected to EFA, in order to identify possible underlying factors. Two possible factor structures were identified by this analysis: (a) a 6-factor structure, that reflected content divisions present in the public draft version of the CSWE (2000) EPAS; and (b) a 4-factor structure, that better approximated a simple structure (Bollen, 1989) and accounted for the same amount of variance as the 6 factor solution.

Using Cronbach's coefficient alpha, the internal consistency reliability for both versions of the SAI-P was estimated. Based on these analyses, both versions proved to be equally reliable measures of social work student self-efficacy.

Phase 2 Discussion

The purpose of the second phase of this study was to obtain evidence of preliminary construct validity for the social work student self-appraisal inventory (SAI). A 37-item version of the SAI was administered to a purposive sample of 301 BSW and MSW students enrolled in five CSWE-accredited schools of social work in two different states in the South and Southeast. Responses to this scale resulted in the removal of 17 items that failed to differentiate among students. The remaining 20 items were subjected to CFA in order to test two hypothetical factor structures for the SAI. Based on substantive theory and a variety of empirical indices, the 4-factor model of social work student self-efficacy was found to fit the Phase 2 data better than the competing 6 factor model. Although this model failed to replicate the explicit content divisions present in the CSWE (2001) EPAS, items written to reflect each area remained.

The reliability of the 20-item version of the SAI and its social work values, practice, human behavior in the social environment (HBSE), and research subscales was

assessed using internal consistency estimates. The internal consistency of an assessment instrument is an indication of how well its items reflect underlying latent constructs (Nunnally & Bernstein, 1994). Both the SAI as a whole and its subscale demonstrated "very good" reliability, based on Cronbach's coefficient alpha (DeVellis, 1991).

Another method of testing the construct validity of an assessment tool is to compare its scores to scores on previously validated measures that are theoretically related or unrelated to the construct of interest (Nunnally & Bernstein, 1994). The SAI and its subscales demonstrated good convergent construct validity by significantly correlating in a positive direction with a measure of optimism, a measure of self-concept, with greater amounts of professional social work experience, and with greater levels of training (e.g., being a 1st or 2nd year BSW or a 1st or 2nd year MSW). Likewise, total self-efficacy scores correlated in a negative direction with scores on a reliable and valid measure of anxiety, as predicted. The SAI and its subscales demonstrated discriminant validity by correlating minimally with a measure of depression. The fact that no significant difference in social work self-efficacy was found for respondents of different professional theoretical orientations was additional evidence of discriminant validity.

It should be noted that total scores on the SAI correlated significantly in a positive direction with student reported satisfaction with their field experience, which was contrary to expectations. Because it was hypothetically possible for a student to feel that their field experience did not prepare them for practice, yet feel confident in their professional abilities, it was expected that scores on the SAI would correlate minimally with ratings of preparedness. However, this finding supported the social cognitive

assumption that students who have had successful professional performance opportunities manifest higher levels of self-efficacy, related to their job.

Final Scale. As a result of these two phases of scale development, the final version of the social work student self-appraisal inventory (SAI) was considered to be a reliable and valid measure suitable for use in CSWE-accredited schools of social work with both BSW and MSW populations. The SAI was comprised of 20-items and 4 subscales: (a) social work values (5 items); (b) practice (3 items); (c) human behavior in the social environment (7 items); and (d) research (5 items). The scale as a whole and all subscales demonstrated good reliability and good face, content, convergent, and discriminant construct validity. Item content reflected the mandated KSA's included in the most recent version of the CSWE (2001) EPAS.

Currently, the only other existing general measure of social worker self-efficacy, developed for use in academic settings, is the 52-item Social Work Self-Efficacy Scale (SWSE). This scale was developed by Holden Meenaghan, Anastas, and Metrey (2002) with a group of approximately 393 MSW students from a single school of social work. In comparison, the 20-item SAI was developed with a group of approximately 443 BSW and MSW students from 5 different schools of social work. The SAI item content focused primarily on a broad sampling of academic skills and knowledge, while the SWSE focused primarily on discrete practice skills. Furthermore, the SAI content was found to be more concise (e.g., no double-barreled items), equally reliable, and more relevant to a wide variety of social work programs than that included in the SWSE scale. Overall, the findings of this study: (a) support the use of the SAI as a measure of self-efficacy in

CSWE-accredited BSW and MSW programs; and (b) provide preliminary evidence of social work student self-efficacy construct validity.

Limitations of the Study

Design and measurement

Both phases of this study used a cross-sectional, survey design. Such research does not provide any sort of causal evidence and is subject to a variety of limitations. Citing Issac and Michael (1995), Bride (2001) noted that:

> (1) surveys only tap respondents who are accessible and cooperative, (2) surveys often make the respondent feel special or unnatural, thereby producing responses that do not adequately represent reality, and (3) surveys arouse response sets such as acquiescence or social desirability. (p.86)

This study was also subject to specific limitations associated with measures of perceived self-efficacy (Bandura, 2001). Specifically, a large number of items measuring different KSA's were deleted from the SAI due to similar responses. While these items were deemed statistically redundant, they were qualitatively distinct, representing very different tasks and knowledge. Bandura (2001) has noted that this ceiling effect occurs when scales fail to include sufficient gradations of difficulty. In addition, because Bandura (2001) recommended wording all items positively, the SAI did not include reverse-coded items that might have mediated the effects of response set bias (Nunnally & Bernstein, 1994).

From a social cognitive perspective, the SAI represented a departure from the more traditional micro-skill focus advocated by Bandura (2001), in that items tended to be more domain than task specific. Because professional social work requires that

capabilities be applied in a wide range of situations, the SAI was tailored to maximize explanatory and predictive power without sacrificing generalizability. This was potentially problematic because when individuals are familiar with a task, they will theoretically call upon task-specific self-efficacy beliefs. However, when task demands are unfamiliar or vague, people may generalize, and thereby overestimate their abilities (Bandura, 1999). Prior research on social work self-efficacy in academic settings has supported this, suggesting that students may overestimate their abilities when asked to rate themselves at the beginning of a semester (Holden, Cuzzi, Rutter, Rosenberg, & Chernack, 1996). This limitation may have contributed to the largely positive skew of observed responses in both phases of the study.

Sample

For logistical reasons, respondents in both phases were recruited from CSWE-accredited schools of social work that were known and readily accessible to the primary investigator. This constituted nonprobability sampling and therefore the results of all statistical analyses have questionable generalizability to other populations. In addition, the relatively small sample size for Phase 1 of this analysis (n = 143) did not support stable factor analytic solutions. Because correlation coefficients tend to be less reliable when estimated from small samples (Field, 2000), the results of the exploratory factor analysis in Phase 1 were suspect and used as guidelines only for Phase 2 of the study. Similarly, the increased risk of Type I and Type II errors associated with smaller sample sizes (Nunnally & Bernstein, 1994) was a potential limitation. Regarding sampling procedures, students enrolled in different course sections were recruited to participate in both phases of research. These cohorts represented cluster samples within each school

(Joreskog, 1993). Although quantitative analyses were conducted to justify pooling populations from different schools, no attempt was made to account for course differences. This sampling procedure is statistically suspect but commonly encountered in practical factor analytic research (Bollen, 1989; Browne & Cudeck, 1989; Hoyle & Panter, 1995). For these reasons, the factor solutions obtained for both phases of this study should be viewed with caution.

Method

Both phases of this study used correlational, factor analytic methodology to evaluate the psychometric properties of the SAI as a whole and its subscales. Because such quantitative approaches rely heavily on estimating the shared-variance of groups of observed variables (Field, 2000), they are potentially problematic for researchers developing measures of perceived self-efficacy (Bandura, 2001). The is due to the fact that task specific judgments of self-efficacy can vary greatly, even when items are written to reflect the same content area. Likewise, the process of item analysis used in Phase 1 and Phase 2 of this study was a potential source of bias. Given that this process relied on the primary investigator to interpret substantive theory and empirical findings to eliminate items, the results of all subsequent analyses were subjectively biased (Nunnally & Bernstein, 1994).

With respect to factor analysis, this subjectivity bias is equally problematic. Ultimately, it is the investigator who decides whether a factor solution is a good fit for data, given that empirical measures of fit are strictly descriptive statistics (Bollen, 1989). Therefore, the results of both the Phase 1 EFA and the Phase 2 CFA should be viewed with caution. Notably, the factor structure of the SAI was not cross-validated, as

recommended by Joreskog (1993), due to the exploratory nature of this investigation. Such cross-validation is necessary, as any model generated using CFA may simply have capitalized on chance sample characteristics (Byrne, 1989).

Conclusions and Implications

Based on the results of Phase 1 and Phase 2 of this study, the following conclusions and implications regarding social work student self-efficacy are suggested:

1. Social work student self-efficacy is a plausible construct, distinct from other related self-constructs (e.g., social work self-concept and optimism) whose underlying components can theoretically be defined and reliably measured.
2. Social work student self-efficacy may be characterized by a variety of factor structures, depending on the scale content assessed.
3. Social work student self-efficacy was found: (a) to be higher for respondents in their final year of graduate education than for those in their first year of BSW education, (b) to improve with overall years of professional experience, and (c) to be positively correlated with how well a student's field placement prepared them for practice.
4. The professional theoretical orientation, gender, ethnicity, and school affiliation of BSW and MSW students had no bearing on observed levels of social work student self-efficacy.

The results of this study have the following implications for professional social work policy, education, and practice:

1. No support was found for a 7-factor model of social work student self-efficacy. Hence, the current CSWE (2001) EPAS content domains do not necessarily represent a singular or best way to categorize mandated curricular content.
2. If student self-efficacy can be reliably measured, it may offer professional schools of social work an alternative measure that could be used for program monitoring and educational outcome assessment. In particular, schools conducting curricular self-studies or gathering evidence for reaccreditation could use student responses to SAI as one indicator of the successful inclusion of CSWE-mandated content.
3. Because high levels of job-specific self-efficacy have been found to predict future performance, educational efforts should be developed to target student efficacy beliefs, based on social cognitive theory (Bandura, 1999).
4. The application of the construct of self-efficacy to social work education may produce professionals who are more confident, effective, and less susceptible to depression, anxiety, and burnout (Koob, 1998).
5. By producing more effective social work practitioners, professional schools of social work contribute to the overall well-being of clients and communities. Therefore, the incorporation of positive psychological constructs, such as self-efficacy, in social work education may hold benefits for people outside of the field and those served by it.

Suggestions for Future Research

Based on the results of this study, future research on social work student self-efficacy could focus on the following areas:

1. Future studies could investigate alternative models of social work self-efficacy. Previously developed measures of social work self-efficacy have demonstrated a wide range of latent factor structures. This suggests the need to compare the 4 factor model of the SAI to the other models, such as a unidimensional one factor model or a two factor model, like that developed by Holden, Meenaghan, Anastas, and Metrey (2002).
2. Both the 4 and 6-factor models developed in this study should be cross-validated with other representative samples, as factor analytic solutions run the risk of capitalizing on chance during the process of model fitting (Joreskog, 1993). In particular, future validation studies should include significant numbers of ethnic minority respondents, to identify possible group differences.
3. Evidence of predictive criterion validity for the SAI could be obtained by adding the measurement of student self-efficacy to a social work educational outcome study, using an experimental design and a control group. By linking scores on the SAI to criterion outcome measures of professional competence, such as national licensing exam results or observed performance, the practical value and validity of social work self-efficacy could be strengthened.
4. Future studies could examine the correlation between practitioner self-efficacy and client outcomes across a variety of settings. Likewise, the SAI could be used to investigate the relationship between social work student self-efficacy and professional burnout (Cherniss, 1993), secondary traumatic stress (Bride, 2001), and other relevant constructs.

5. Additional psychometrically valid and reliable self-efficacy measures should be developed to reflect the wide range of subject-specific tasks and specialized knowledge currently required of professional social workers.

Summary

The overarching goal of this investigation was to develop a reliable and valid measure of self-efficacy for use in professional schools of social work, based on current CSWE (2001) educational curriculum and policy standards (EPAS). The results of both phases of this study suggest that is possible to create a scale, namely the social work student Self-Appraisal Inventory (SAI), that is: (a) practical to administer in classroom settings; (b) is reliable; and (c) that demonstrates content, convergent, and discriminant validity. In addition, Phase 2 of this study provided foundational evidence for the construct validity of social work student self-efficacy. Such a measure could be used by educators to measure student confidence related to broad areas of social work knowledge, skills, and abilities. Because the SAI items reflected a valid sampling of EPAS content, it could be used by school administrators for ongoing program monitoring and as evidentiary support for reaccreditation. In light of these promising findings, future research is needed to cross-validate the results of this study and to mediate the inherent limitations of cross-sectional survey and factor analytic research. Ultimately, the SAI compared favorably to the one existing measure of general social work self-efficacy for use in academic settings (e.g., the SWSE; Holden, Meenaghan, Anastas, & Metrey, 2002) and could potentially contribute to our understanding of the impact of self-beliefs on social work education and practice.

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APPENDIX A

CSWE (2001) EDUCATIONAL POLICY AND CURRICULUM STANDARDS

Council on Social Work Education (2001) Educational Policy and Curriculum Standards

4. Foundation Curriculum Content

All social work programs provide foundation content in the areas specified below. Content areas may be combined and delivered with a variety of instructional technologies. Content is relevant to the mission, goals, and objectives of the program and to the purposes, values, and ethics of the social work profession.

4.0 Values and Ethics

Social work education programs integrate content about values and principles of ethical decision making as presented in the National Association of Social Workers Code of Ethics. The educational experience provides students with the opportunity to be aware of personal values; develop, demonstrate, and promote the values of the profession; and analyze ethical dilemmas and the ways in which these affect practice, services, and clients.

4.1 Diversity

Social work programs integrate content that promotes understanding, affirmation, and respect for people from diverse backgrounds. The content emphasizes the interlocking and complex nature of culture and personal identity. It ensures that social services meet the needs of groups served and are culturally relevant. Programs educate students to recognize diversity within and between groups that may influence assessment, planning, intervention, and research. Students learn how to define, design, and implement strategies for effective practice with persons from diverse backgrounds.

4.2 Populations-at-Risk and Social and Economic Justice

Social work education programs integrate content on populations-at-risk, examining the factors that contribute to and constitute being at risk. Programs educate students to identify how group membership influences access to resources, and present content on the dynamics of such risk factors and responsive strategies to redress them.

Programs integrate social and economic justice content grounded in an understanding of distributive justice, human and civil rights, and the global interconnections of oppression

Programs provide content related to implementing strategies to combat discrimination, oppression,

and economic deprivation and to promote social and economic justice. Programs prepare students to advocate for nondiscriminatory social and economic systems.

4.3 Human Behavior and the Social Environment

Social work education programs provide content on the reciprocal relationships between human behavior and social environment. Content includes empirically based theories and knowledge that focus on the interactions between and among individuals, groups, societies, and economic systems. It includes theories and knowledge of biological, sociological, cultural, psychological, and spiritual development across the life span; the range of social systems in which people live (individual, family, group, organizational, and community); and the ways social systems promote or deter people in maintaining or achieving health and well-being.

4.4 Social Welfare Policy and Services

Programs provide content about the history of social work, the history and current structures of social welfare services, and the roles of policy in service delivery, social work practice, and attainment of individual and social well-being. Course content provides students with knowledge and skills to understand major policies that form the foundation of social welfare; analyze organizational, local, state, national, and international issues in social welfare policy and social service delivery; understand and demonstrate policy practice skills in regard to economic, political, and organizational systems, and use them to influence, formulate, and advocate for policy consistent with social work values; and identify financial, organizational, administrative, and planning processes required to deliver social services.

4.5 Social Work Practice

Social work practice content is anchored in the purposes of the social work profession and focuses on strengths, capacities, and resources of client systems in relation to their broader environments. Students learn practice content that encompasses knowledge and skills to work with individuals, families, groups, organizations, and communities. This content includes engaging clients in an appropriate working relationship, identifying issues, problems, needs, resources, and assets; collecting and assessing information; and planning for service delivery. It includes using communication skills, supervision, and consultation, Practice content also includes identifying,

analyzing, and implementing empirically based interventions designed to achieve client goals; applying empirical knowledge and technological advances; evaluating program outcomes and practice effectiveness; developing, analyzing, advocating, and providing leadership for policies and services; and promoting social and economic justice.

4.6 Research

Qualitative and quantitative research content provides understanding of a scientific, analytic, and ethical approach to building knowledge for practice. The content prepares students to develop, use, and effectively communicate empirically based knowledge, including evidence-based interventions. Research knowledge is used by students to provide high-quality services; to initiate change; to improve practice, policy, and social service delivery; and to evaluate their own practice.

4.7 Field Education

Field education is an integral component of social work education anchored in the mission, goals, and educational level of the program. It occurs in settings that reinforce students' identification with the purposes, values, and ethics of the profession; fosters the integration of empirical and practice-based knowledge; and promotes the development of professional competence. Field education is systematically designed, supervised, coordinated, and evaluated on the basis of criteria by which students demonstrate the achievement the achievement of program objectives.

5. Advanced Curriculum Content

The master's curriculum prepares graduates for advanced social work practice in a an area of concentration. Using a conceptual framework to identify advanced knowledge and skills, programs build an advanced curriculum from the foundation content. In the advanced curriculum, the foundation content areas (Section 4, 4.0-4.7) are addressed in greater depth, breadth, and specificity and support the program's conception of advanced practice.

APPENDIX B

FACE VALIDITY QUESTIONNAIRE

Hello “subject-matter expert,”

The purpose of this questionnaire is to assess how well differently worded items listed below reflect the standard provided by the Council on Social Work Education, typed in **bold** print above each set. Pairs of items designed to reflect essentially the same skill/ability are listed, with one item in each pair described in reference to a situation or context. Also, you may notice that some items are worded differently from the CSWE paragraph. These changes were a deliberate attempt to tap different levels of difficulty for a given item and despite this, I hope that both items will adequately reflect the standard.

To reflect a judgment of perceived efficacy, each question will ultimately be assessed (with students) using the following stem:

Right now, how confident are you that you can:

Below, you will see the Council on Social Work Education curriculum standard in **bold** print followed by a list of item pairs and a three-point scale. For each item following the standard, please circle the number on the scale that corresponds to how well you believe the given item reflects the standard, using the following scale:

NO	**N/S**	**YES**
Not Appropriate Item	Not Sure	Yes, Appropriate Item

In addition, please feel free to comment in the margins or write in alternate wordings for items that you judge to be preferable to the given material. If there is content that you feel should be included, please write in additional items. Use the reverse side of each page if necessary.

A. Values and Ethics

Social work education programs integrate content about values and principles of ethical decision making as presented in the National Association of Social Workers Code of Ethics. The educational experience provides students with the opportunity to be aware of personal values; develop, demonstrate, and promote the values of the profession; and analyze ethical dilemmas and the ways in which these affect practice, services, and clients.

1	Articulate the development of your own personal values.	No	NS	Yes
1a	Demonstrate an awareness of personal values without imposing them on a client.	**No**	**NS**	**Yes**
2	Analyze how different ethical dilemmas affect the quality of service delivery.	**No**	**NS**	**Yes**
2a	Describe the effects of ethical dilemmas on service provision to professionals responsible for such services.	**No**	**NS**	**Yes**
3	Demonstrate the ability to integrate professional social work ethics into practice.	**No**	**NS**	**Yes**
3a	Consistently make ethical decisions in a practice setting that routinely supports unethical practices.	**No**	**NS**	**Yes**
4	Provide services in a professionally ethical manner.	**No**	**NS**	**Yes**
4a	Accept responsibility for professional practice decisions even when those you work with do not.	**No**	**NS**	**Yes**
5	Actively promote the values of the profession.	**No**	**NS**	**Yes**
5a	Demonstrate the ability to advance professional values in non-social work settings.	**No**	**NS**	**Yes**

Comments:

B. Diversity

Social work programs integrate content that promotes understanding, affirmation, and respect for people from diverse backgrounds. The content emphasizes the interlocking and complex nature of culture and personal identity. It ensures that social services meet the needs of groups served and are culturally relevant. Programs educate students to recognize diversity within and between groups that may influence assessment, planning, intervention, and research. Students learn how to define, design, and implement strategies for effective practice with persons from diverse backgrounds.

1	Perceive how group diversity influences aspects of social work practice.	**No NS Yes**
1a	Identify the effects of group diversity on professional practice in service settings that fail to serve groups fairly.	**No NS Yes**
2	Describe culturally competent social work.	**No NS Yes**
2a	Implement culturally competent social work practice with clients that make you feel uncomfortable.	**No NS Yes**
3	Assess the service needs of different cultural groups.	**No NS Yes**
3a	Ensure that social services provided are relevant to the cultural group in need even when your service agency resists change.	**No NS Yes**
4	Describe the interlocking nature of culture and personal identity.	**No NS Yes**
4a	Promote the affirmation of people from diverse backgrounds among co-workers that do not value cultural diversity.	**No NS Yes**

Comments:

C. Populations-at-Risk and Social and Economic Justice

Social work education programs integrate content on populations-at-risk, examining the factors that contribute to and constitute being at risk. Programs educate students to identify how group membership influences access to resources, and present content on the dynamics of such risk factors and responsive strategies to redress them. Programs integrate social and economic justice content grounded in an understanding of distributive justice, human and civil rights, and the global interconnections of oppression. Programs provide content related to implementing strategies to combat discrimination, oppression, and economic deprivation and to promote social and economic justice. Programs prepare students to advocate for nondiscriminatory social and economic systems.

1	Describe the systemic effects of different forms of oppression on specific client groups.	**No NS Yes**
1a	Implement a strategy to combat oppression when confronted by the discriminatory actions of a colleague.	**No NS Yes**
2	Describe what it means for a population to be "at-risk."	**No NS Yes**
2a	Help clients from different backgrounds understand the difference between social and economic justice.	**No NS Yes**
3	Formulate strategies to address the effects of social injustice on client systems.	**No NS Yes**
3a	Implement specific change strategies that promote social justice when a client's environment actively discourages such change.	**No NS Yes**
4	Promote economic equality for at-risk client systems.	**No NS Yes**
4a	Advocate for equal access to resources/services for clients when confronted by institutionalized discrimination.	**No NS Yes**
5	Promote agency policies that encourage mutuality, collaboration, and respect for the clients.	**No NS Yes**
5a	Change the policies of agencies that focus on client "pathology" rather than the strengths and resources of clients in relation to their environment.	**No NS Yes**

Comments:

D. Human Behavior and the Social Environment

Social work education programs provide content on the reciprocal relationships between human behavior and social environment. Content includes empirically based theories and knowledge that focus on the interactions between and among individuals, groups, societies, and economic systems. It includes theories and knowledge of biological, sociological, cultural, psychological, and spiritual development across the life span; the range of social systems in which people live (individual, family, group, organizational, and community); and the ways social systems promote or deter people in maintaining or achieving health and well-being.

1	Demonstrate an understanding of the interaction of the environment with human behavior.	**No**	**NS**	**Yes**
1a	Discuss empirical studies that support your knowledge of human behavior in the social environment.	**No**	**NS**	**Yes**
2	Utilize a range of theories of human behavior with different client groups.	**No**	**NS**	**Yes**
2a	Apply different, empirically-based theories of human behavior to a variety of client systems without assistance from a supervisor, teacher, or textbook.	**No**	**NS**	**Yes**
3	Empirically evaluate system theories of client functioning in a social environment.	**No**	**NS**	**Yes**
3a	Analyze the strengths and weaknesses of different theories of human behavior in a social environment using a well-defined philosophy of science.	**No**	**NS**	**Yes**
4	Demonstrate the ability to use an empirically-based theory of human behavior in a practice setting.	**No**	**NS**	**Yes**
4a	Utilize an empirically supported theory of human behavior to provide effective services for a population/client-system that you are unfamiliar with.	**No**	**NS**	**Yes**

Comments:

E. Social Welfare Policy and Services

Programs provide content about the history of social work, the history and current structures of social welfare services, and the roles of policy in service delivery, social work practice, and attainment of individual and social well-being. Course content provides students with knowledge and skills to understand major policies that form the foundation of social welfare; analyze organizational, local, state, national, and international issues in social welfare policy and social service delivery; understand and demonstrate policy practice skills in regard to economic, political, and organizational systems, and use them to influence, formulate, and advocate for policy consistent with social work values; and identify financial, organizational, administrative, and planning processes required to deliver social services.

1	Compare how social welfare policy at different practice levels (e.g., organizational, local, state, national, and international) impacts social services delivery.	**No**	**NS**	**Yes**
1a	Identify specific trends in social welfare policy that affect service delivery at levels of practice (e.g., local, state, national, or international) with which you have no practical experience.	**No**	**NS**	**Yes**
2	Critically assess the relevance of social policy research outcomes to client systems, using an empirical evidence-base.	**No**	**NS**	**Yes**
2a	Demonstrate a clear understanding of specific policy research findings relevant to social service provision.	**No**	**NS**	**Yes**
3	Integrate knowledge of economic, political, and organizational systems to actively promote social policy.	**No**	**NS**	**Yes**
3a	Use your understanding of political systems to advocate for social policy outside of your primary area of practice experience.	**No**	**NS**	**Yes**
4	Describe the different administrative processes required to effectively deliver social services.	**No**	**NS**	**Yes**
4a	Defend the process of social service delivery from an organizational/administrative perspective to someone critically auditing your agency.	**No**	**NS**	**Yes**
5	Explain, in detail, issues affecting social welfare policy to elected officials and to service recipients equally well.	**No**	**NS**	**Yes**
5a	Articulate social welfare policy issues to people outside of the social work profession.	**No**	**NS**	**Yes**

Comments:

F. Social Work Practice

Social work practice content is anchored in the purposes of the social work profession and focuses on strengths, capacities, and resources of client systems in relation to their broader environments. Students learn practice content that encompasses knowledge and skills to work with individuals, families, groups, organizations, and communities. This content includes engaging clients in an appropriate working relationship, identifying issues, problems, needs, resources, and assets; collecting and assessing information; and planning for service delivery. It includes using communication skills, supervision, and consultation, Practice content also includes identifying, analyzing, and implementing empirically based interventions designed to achieve client goals; applying empirical knowledge and technological advances; evaluating program outcomes and practice effectiveness; developing, analyzing, advocating, and providing leadership for policies and services; and promoting social and economic justice.

1	Describe different client resources/assets relevant to issues raised during an intervention.	**No NS Yes**
1a	Help clients define personal resources related to identified problems, even when they insist that they have no positive assets.	**No NS Yes**
2	Systematically gather information relevant to client systems needed for further assessment.	**No NS Yes**
2a	Assemble relevant information needed for assessment when confronted with a client who is uncooperative.	**No NS Yes**
3	Develop a comprehensive plan for service provision.	**No NS Yes**
3a	Collaborate with clients for effective treatment planning when presented with an unfamiliar problem/service need.	**No NS Yes**
4	Select appropriate, evidence-based interventions for different levels of practice (e.g., individual, group, and community-level) with equal skill.	**No NS Yes**
4a	Use practice methods that are specifically suited to client systems—from the individual through community levels—different from those with which you have experience.	**No NS Yes**
5	Consult with your supervisor effectively to enhance practice.	**No NS Yes**
5a	Ask questions during supervision that will improve practice outcomes even when your supervisor is difficult to communicate with.	**No NS Yes**

Comments:

G. Research

Qualitative and quantitative research content provides understanding of a scientific, analytic, and ethical approach to building knowledge for practice. The content prepares students to develop, use, and effectively communicate empirically based knowledge, including evidence-based interventions. Research knowledge is used by students to provide high-quality services; to initiate change; to improve practice, policy, and social service delivery; and to evaluate their own practice.

1	Gather relevant information needed to research your practice outcomes even when you have more cases or clients than you have time to see.	**No NS Yes**
1a	Collect facts needed to answer pertinent research questions about your social work practice.	**No NS Yes**
2	Effectively use computer systems to manage empirically-based social work data.	**No NS Yes**
2a	Use personal computers to compliment research on social work practice in agencies that use programs unfamiliar to you.	**No NS Yes**
3	Use relevant qualitative methods to critically research social work practice.	**No NS Yes**
3a	Utilize suitable qualitative research methods to analyze social work services in such a way that your results could be published in a peer-reviewed journal.	**No NS Yes**
4	Use quantitative statistics to research the effectiveness of social service delivery.	**No NS Yes**
4a	Employ proper quantitative methods to research practice outcomes when faced with problems that are difficult to quantify.	**No NS Yes**
5	Clearly communicate an understanding of social work research outcomes in writing.	**No NS Yes**
5a	Prepare a written manuscript of publishable quality analyzing social work research findings without the assistance of another researcher or teacher.	**No NS Yes**

Comments:

APPENDIX C

INFORMED CONSENT DOCUMENT

I, _____ agree to take part in the research titled "CREATION AND VALIDATION OF A NEW SOCIAL WORK SELF-EFFICACY SCALE: THE SOCIAL WORK STUDENT SELF-APPRAISAL INVENTORY" conducted by Michael E. King from the School of Social Work at the University of Georgia, 404-378-2557, under the direction of Dr. Patrick Bordnick, School of Social Work, 678-407-5204. I understand that I do not have to take part if I do not want to. I can stop taking part without giving any reason, and without penalty. I can ask to have all of the information about me returned to me, removed from the research records, or destroyed.

The reason for this study is to develop a measure that reflects social work students' opinions of their ability to successfully complete various tasks related to social work education. The benefits that I may expect from participation in this study include experience taking part in social work research and helpful insights concerning my personal social work capabilities.

If I volunteer to take part in this study, all that I will be asked to do is complete questionnaires during regularly scheduled course hours. These questionnaires will involve: (1) Providing information that describes the length of my social work academic and professional training, as well as personal descriptors, such as ethnicity, gender, and age; (2) Answering questions about my current ability to perform various professional social work tasks, my current attitudes, and feelings. Completing these questionnaires will require no longer than 30 to 45 minutes.

I will not receive course credit, money, or any other form of compensation for my participation in this study. No risks from taking part in this study are expected. Should I feel uncomfortable answering questions about my feelings and professional abilities, I can stop taking part in the study at any time. To minimize any possible discomfort experienced by participants, strict confidentiality will be maintained with all data and all instruments will be administered by a licensed Master's level social worker.

No information about me, or provided by me during the research, will be shared with others without my written permission, except if it is necessary to protect my welfare (for example, if I am injured and need emergency care) or if required by law. If information about me is published, it will be written in a way that I cannot be recognized. Research records will be maintained by the primary investigator in a secure location for an undetermined length of time, for future analyses. I will be assigned an identifying number and this number will be used on all of the questionnaires I fill out.

The primary investigator will answer any further questions about the research, now or during the course of the project, and can be reached by telephone at 404-378-2557. I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____ _____

Signature of Investigator Date Signature of Participant Date

Questions or problems regarding your rights as a participant should be addressed to Chris A. Joseph, Ph.D., Human Subjects Office, University of Georgia, 606A Boyd Graduate Studies Research Center, Athens, Georgia, 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

APPENDIX D

DEMOGRAPHIC SURVEY

Directions: Please answer the following questions in the spaces provided.

1. What is your gender? ____ Female ____ Male

2. How old are you? ____ Years

3. What is your ethnicity? ____ African American ____ Asian/Asian American

____ Hispanic/Latin American ____ Native American ____ Caucasian

____ Multi-ethnic/Other (specify) _____

4. Please indicate your degree program standing (check all that apply):

____ 1st Year BSW ____ 1st Year MSW ____ I have a BSW

____ 2nd Year BSW ____ 2nd Year MSW ____ Advanced Standing MSW

____ > 2nd Year BSW ____ > 2nd Year MSW

____ Part-time BSW ____ Part-time MSW

5. Length of professional social work experience (including any field placement experience related to your degree program): ____ Years ____ Months

6. Please indicate the label that best describes your professional, theoretical orientation:

____ Cognitive-behavioral ____ Family-systems ____ None

____ Eclectic ____ Other (specify)_____

7. Have you participated in a supervised, social work field experience (this is considered to be non-paid work associated with your degree program):
____ Yes ____ No

8. If you answered YES to item 7, please indicate how well you feel your field experience has prepared you for social work practice, on the scale below:

Not at all Somewhat Very well

0 1 2 3 4 5 6 7 8 9 10

9. If you answered YES to item 7, please indicate how much supervised social work field experience you have had:

____ < 6 months ____ 6 – 12 months ____ 13 – 18 months

____ > 18 months

APPENDIX E

PILOT SELF-APPRAISAL INVENTORY (SAI-P)

This questionnaire is designed to measure how you might behave as a social worker ***today.*** This is not a test -- there are no right or wrong answers and all answers will be kept strictly confidential. Do not respond with how you ***wish*** you could perform each item, rather answer with an honest estimate of how you would perform based on what you know now.

For each statement, circle the number that indicates how confident you are ***today*** in your ability to ***successfully*** perform each task. Consider "successfully" to mean in such a manner that an experienced supervisor would think was "excellent."

Each statement should be read as a question, beginning with the phrase:

How confident are you that you can….

How confident are you that you can:

	Cannot do at all				**Moderately certain can do**						**Very certain can do**
1. Recognize how your personal values may intrude in your work?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2. Demonstrate an awareness of your personal values without imposing them on a client?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
3. Analyze how ethical dilemmas affect the quality of services?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
4. Describe to a client how ethical dilemmas impact the services they receive in language that they can easily understand?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
5. Demonstrate the ability to integrate professional social work ethics into practice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
6. Consistently make ethical decisions in a practice setting, even when your co-workers do not?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
7. Describe in detail the ethical foundation of professional social work?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

How confident are you that you can:

	Cannot do at all					Moderately certain can do					Very certain can do
8. Provide services in a professionally ethical manner, even when it conflicts with your personal values?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
9. Actively promote the values of the profession?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
10. Advance professional values in a non-social work setting?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
11. Perceive how cultural differences influence social work practice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
12. Describe the effects of cultural diversity on practice in a non-judgmental manner?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
13. Describe culturally-competent social work?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
14. Bridge cultural differences when working with clients who make you feel uncomfortable?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
15. Assess the service needs of different cultural groups without bias?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
16. Ensure that the services provided to clients of an ethnic minority are culturally relevant?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
17. View situations from the perspective of a client from a different cultural background?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
18. Promote respect for cultural diversity among your co-workers?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

How confident are you that you can:

	Cannot do at all					Moderately certain can do				Very certain can do	
19. Describe the effects of ethnic diversity on social research?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
20. Conduct ethnically-sensitive social work research?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
21. Describe the effects of different forms of oppression on clients?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
22. Implement a strategy to combat oppression when confronted by discriminatory actions?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
23. Describe what it means for a population to be "at-risk?"	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
24. Help clients understand the difference between social and economic justice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
25. Outline one strategy to address the effects of social injustice on a client system?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
26. Personally implement a specific change strategy that promotes social justice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
27. Promote economic equality for the clients you work with?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
28. Make sure clients of a different socio-economic status than yourself have equal access to resources?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
29. List specific ways that social service agencies promote non-discrimination?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
30. Resolve conflicts between discriminatory service agency policies and your client's needs?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

How confident are you that you can:

	Cannot do at all								Moderately certain can do		Very certain can do
31. Demonstrate a scientific understanding of the interaction between the environment and human behavior?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
32. Discuss empirical studies that support what you know about human behavior?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
33. Define what it means for a theory of human behavior to be "empirically-based?"	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
34. Apply empirically-based theories of human behavior to different client groups without assistance?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
35. Describe how different social systems promote client well-being?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
36. Analyze different theories of human behavior using a well-defined philosophy of science perspective?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
37. Describe, in detail, the interaction between a social and economic system impacting clients?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
38. Define the meaning of a "system-theory?"	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
39. Demonstrate the ability to use one empirically-based theory of behavior in a practice setting?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
40. Use an empirically supported theory of behavior to effectively serve an unfamiliar client group?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
41. Compare how different social welfare policies impact social service delivery?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

How confident are you that you can:

	Cannot do at all								Moderately certain can do		Very certain can do
42. Describe how a well-known piece of social welfare policy has affected social work services?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
43. Analyze a specific piece of social policy legislation?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
44. Identify historical trends in social welfare policy at the national level?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
45. Demonstrate a comprehensive understanding of political systems that impact client services?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
46. Use your understanding of political systems to advocate for social policy outside of your primary area of practice experience?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
47. Describe the different administrative processes required to deliver effective social services?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
48. View organizational processes required for social service delivery from an administrative perspective?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
49. Explain the issues affecting social welfare policy to elected officials?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
50. Articulate social welfare policy issues to people outside of the social work profession in terms that they can easily understand?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
51. Consistently focus on client assets/ strengths related to issues raised during an intervention, rather than focusing on problems?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

How confident are you that you can:

	Cannot do at all					Moderately certain can do					Very certain can do
52. Help clients who appear unmotivated to recognize personal resources related to problems they have identified?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
53. List the information you need to clinically assess clients in a practice setting that you are familiar with?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
54. Assemble information for case assessment even when confronted by an uncooperative client?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
55. Develop a comprehensive plan for service provision?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
56. Collaborate with clients for treatment planning when presented with an unfamiliar problem?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
57. Respond to all of the different problems presented by an individual client in the most clinically appropriate manner?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
58. Make sure that all clients in a small group setting benefit from participation in that group?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
59. Use empirically-based methods to intervene in a community?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
60. Ask questions during supervision that will improve practice outcomes, even with a difficult supervisor?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
61. Consult with your supervisor regularly to enhance practice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
62. Collect data needed to answer questions about your social work practice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

How confident are you that you can:

	Cannot do at all					Moderately certain can do				Very certain can do
63. Set aside enough time to gather the information you need to evaluate your personal practice outcomes?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
64. Use computer information systems to analyze social work research?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
65. Use personal computers to research evidence-based social work knowledge?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
66. Use relevant *qualitative* methods to research social work practice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
67. Verbally describe different *qualitative* research methods?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
68. Use *quantitative* statistics to research the effectiveness of social service delivery?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
69. Employ proper *quantitative* methods to develop evidence-based interventions.	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
70. Clearly communicate an understanding of social work research literature in writing?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
71. Describe how a current piece of social work research might impact practice?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

APPENDIX F

SELF-APPRAISAL INVENTORY (SAI)

For each statement, circle the number that indicates how confident you are *today* in your ability to successfully perform each social work task. Consider "successfully" to mean in such a manner that an experienced supervisor would think was "excellent." Remember that this is not a test—there are no right or wrong answers and all responses will be kept strictly confidential.

How confident are you that you can:	Cannot do at all					Moderately certain can do				Very certain can do	
1. Use empirically-based methods to intervene in a community?	0	1	2	3	4	5	6	7	8	9	10
2. Describe culturally-competent social work?	0	1	2	3	4	5	6	7	8	9	10
3. Assess the service needs of different cultural groups without bias?	0	1	2	3	4	5	6	7	8	9	10
4. Make sure clients of a different socio-economic status than yourself have equal access to resources?	0	1	2	3	4	5	6	7	8	9	10
5. Bridge cultural differences when working with clients who make you feel uncomfortable?	0	1	2	3	4	5	6	7	8	9	10
6. Describe the different administrative policies required to deliver effective social services?	0	1	2	3	4	5	6	7	8	9	10
7. Analyze how ethical dilemmas affect the quality of services?	0	1	2	3	4	5	6	7	8	9	10
8. Provide direct social work services to individual clients?	0	1	2	3	4	5	6	7	8	9	10
9. Describe in detail the ethical foundation of professional social work?	0	1	2	3	4	5	6	7	8	9	10
10. Describe how different social systems promote client well-being?	0	1	2	3	4	5	6	7	8	9	10
11. Respond to every problem presented by an individual client in the most clinically appropriate manner?	0	1	2	3	4	5	6	7	8	9	10

How confident are you that you can:	C annot do at all					Moderately certain can do				Very certain can do	
12. Demonstrate knowledge of effective practice techniques for use with groups?	0	1	2	3	4	5	6	7	8	9	10
13. Recognize how your personal values may intrude in your work?	0	1	2	3	4	5	6	7	8	9	10
14. Promote economic equality for the clients you work with?	0	1	2	3	4	5	6	7	8	9	10
15. Practice effective community-level social work?	0	1	2	3	4	5	6	7	8	9	10
16. Set aside enough time to gather the information you need to evaluate your personal practice outcomes?	0	1	2	3	4	5	6	7	8	9	10
17. Analyze a specific piece of social policy legislation?	0	1	2	3	4	5	6	7	8	9	10
18. Ask question during supervision that will improve practice outcomes?	0	1	2	3	4	5	6	7	8	9	10
19. Compare how different social welfare policies impact social service delivery?	0	1	2	3	4	5	6	7	8	9	10
20. Resolve conflicts between discriminatory service agency policies and your client's needs?	0	1	2	3	4	5	6	7	8	9	10
21. Consistently focus on client assets/strengths related to issues raised during intervention rather than their problems?	0	1	2	3	4	5	6	7	8	9	10
22. Analyze different theories of human behavior using a well-defined philosophy of science perspective?	0	1	2	3	4	5	6	7	8	9	10
23. Demonstrate a scientific understanding of the interaction between the environment and human behavior?	0	1	2	3	4	5	6	7	8	9	10

How confident are you that you can:	Cannot do at all			Moderately certain can do					Very certain can do		
24. Help clients understand the difference between social and economic justice?	0	1	2	3	4	5	6	7	8	9	10
25. Perceive how cultural differences influence social work practice?	0	1	2	3	4	5	6	7	8	9	10
26. Explain the issues affecting social welfare policy to elected officials?	0	1	2	3	4	5	6	7	8	9	10
27. Discuss empirical studies that support what you know about human behavior?	0	1	2	3	4	5	6	7	8	9	10
28. Use quantitative statistics to research the effectiveness of social service delivery?	0	1	2	3	4	5	6	7	8	9	10
29. Demonstrate the ability to use one empirically-based theory of behavior in a practice setting?	0	1	2	3	4	5	6	7	8	9	10
30. Use relevant qualitative methods to research social work practice?	0	1	2	3	4	5	6	7	8	9	10
31. Demonstrate the ability to integrate professional social work ethics into practice?	0	1	2	3	4	5	6	7	8	9	10
32. Use personal computers to research evidence-based social work knowledge?	0	1	2	3	4	5	6	7	8	9	10
33. List specific ways that social service agencies promote non-discrimination?	0	1	2	3	4	5	6	7	8	9	10
34. Describe how a current piece of social work research might impact practice?	0	1	2	3	4	5	6	7	8	9	10
35. View situations from the perspective of a client from a different cultural background?	0	1	2	3	4	5	6	7	8	9	10
36. Collect data needed to answer questions about your social work practice?	0	1	2	3	4	5	6	7	8	9	10

How confident are you that you can:	Cannot do at all			Moderately certain can do						Very certain can do
37. Make sure that all clients in a small group setting benefit from participation in that group?	0	1	2	3	4	5	6	7	8	9	10

APPENDIX G

LIFE ORIENTATION TEST-REVISED (LOT-R)

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

A = I agree a lot
B = I agree a little
C = I neither agree nor disagree
D = I DISagree a little
E = I DISagree a lot

1. In uncertain times, I usually expect the best.

   A B C D E

2. It's easy for me to relax.

   A B C D E

3. If something can go wrong for me, it will.

   A B C D E

4. I'm always optimistic about my future.

   A B C D E

5. I enjoy my friends a lot.

   A B C D E

6. It's important for me to keep busy.

   A B C D E

7. I hardly ever expect things to go my way.

   A B C D E

8. I don't get upset too easily.

   A B C D E

9. I rarely count on good things happening to me.

   A B C D E

10. Overall, I expect more good things to happen to me than bad.

    A B C D E

APPENDIX H

THE CENTER FOR EPIDEMIOLOGICAL STUDIES

DEPRESSION SCALE (CES-D)

Circle the number of each statement which best describes how often you felt or behaved this way—
DURING THE PAST WEEK.

	Rarely or None of The time (Less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)
DURING THE PAST WEEK:				
1. I was bothered by things that usually don't bother me	0	1	2	3
2. I did not feel like eating; my appetite was poor	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends	0	1	2	3
4. I felt that I was just as good as other people	0	1	2	3
5. I had trouble keeping my mind on what I was doing	0	1	2	3
6. I felt depressed	0	1	2	3
7. I felt that everything I did was an effort	0	1	2	3
8. I felt hopeful about the future	0	1	2	3
9. I thought my life had been a failure	0	1	2	3
10. I felt fearful	0	1	2	3
11. My sleep was restless	0	1	2	3
12. I was happy	0	1	2	3
13. I talked less than usual	0	1	2	3
14. I felt lonely	0	1	2	3
15. People were unfriendly	0	1	2	3
16. I enjoyed life	0	1	2	3
17. I had crying spells	0	1	2	3
18. I felt sad	0	1	2	3
19. I felt that people disliked me	0	1	2	3
20. I could not get "going"	0	1	2	3

APPENDIX I

THE CLINICAL ANXIETY SCALE (CAS)

This questionnaire is designed to measure how much anxiety you are currently feeling. It is not a test so there are no right or wrong answers. Answer each item as carefully and as accurately as you can by placing a number beside each one as follows:

1 = Rarely or none of the time
2 = A little of the time
3 = Some of the time
4 = A good part of the time
5 = Most or all of the time

____ 1. I feel calm.
____ 2. I feel tense.
____ 3. I feel suddenly scared for no reason.
____ 4. I feel nervous.
____ 5. I use tranquilizers or antidepressants to cope with my anxiety.
____ 6. I feel confident about the future.
____ 7. I am free from senseless or unpleasant thoughts.
____ 8. I feel afraid to go out of my house alone.
____ 9. I feel relaxed and in control of myself.
____10. I have spells of terror or panic.
____11. I feel afraid in open spaces or in the streets.
____12. I feel afraid I will faint in public.
____13. I am comfortable traveling on buses, subways, or trains.
____14. I feel nervous or shakiness inside.
____15. I feel comfortable in crowds, such as shopping or at a movie.
____16. I feel comfortable when I am left alone.
____17. I rarely feel afraid without good reason.
____18. Due to my fears, I unreasonably avoid certain animals, objects, or situations.
____19. I get upset easily or feel panicky unexpectedly.
____20. My hands, arms or legs shake or tremble.
____21. Due to my fears, I avoid social situations, whenever possible.
____22. I experience sudden attacks of panic which catch me by surprise.
____23. I feel generally anxious.
____24. I am bothered by dizzy spells.
____25. Due to my fears, I avoid being alone, whenever possible.

APPENDIX J

THE SOCIAL WORK SELF-CONCEPT SCALE (SWSC)

Directions: Please use the following scale to respond to the questions below. Circle the appropriate response.

Scale:		
	1 – Definitely false	5 – More true than false
	2 – False	6 – Mostly true
	3 – Mostly false	7 – True
	4 – More false than true	8 – Definitely true

1.	I find many social work problems interesting and challenging.	1 2 3 4 5 6 7 8
2.	I have hesitated to take courses in social work.	1 2 3 4 5 6 7 8
3.	I have generally done better in social work courses than in other courses	1 2 3 4 5 6 7 8
4.	Doing social work makes me feel inadequate.	1 2 3 4 5 6 7 8
5.	I am quite good at social work.	1 2 3 4 5 6 7 8
6.	I have trouble understanding anything related to social work.	1 2 3 4 5 6 7 8
7.	I have always done well in social work classes.	1 2 3 4 5 6 7 8
8.	I seldom do well on tests that require knowledge of social work.	1 2 3 4 5 6 7 8
9.	Other students come to me for help with social work assignments.	1 2 3 4 5 6 7 8
10.	I have never been very excited about social work.	1 2 3 4 5 6 7 8

APPENDIX K

SELF-APPRAISAL INVENTORY (SAI)—FINAL VERSION

For each statement, circle the number that indicates how confident you are *today* in your ability to successfully perform each social work task. Consider "successfully" to mean in such a manner that an experienced supervisor would think was "excellent." Remember that this is not a test—there are no right or wrong answers and all responses will be kept strictly confidential.

How confident are you that you can:	Cannot do at all				Moderately certain can do				Very certain can do		
1. Describe culturally-competent social work?	0	1	2	3	4	5	6	7	8	9	10
2. Assess the service needs of different cultural groups without bias?	0	1	2	3	4	5	6	7	8	9	10
3. Bridge cultural differences when working with clients who make you feel uncomfortable?	0	1	2	3	4	5	6	7	8	9	10
4. Analyze how ethical dilemmas affect the quality of services?	0	1	2	3	4	5	6	7	8	9	10
5. Describe in detail the ethical foundation of professional social work?	0	1	2	3	4	5	6	7	8	9	10
6. Respond to every problem presented by an individual client in the most clinically appropriate manner?	0	1	2	3	4	5	6	7	8	9	10
7. Demonstrate knowledge of effective practice techniques for use with groups?	0	1	2	3	4	5	6	7	8	9	10
8. Practice effective community-level social work?	0	1	2	3	4	5	6	7	8	9	10
9. Analyze a specific piece of social policy legislation?	0	1	2	3	4	5	6	7	8	9	10
10. Compare how different social welfare policies impact social service delivery?	0	1	2	3	4	5	6	7	8	9	10
11. Resolve conflicts between discriminatory service agency policies and your client's needs?	0	1	2	3	4	5	6	7	8	9	10
12. Analyze different theories of human behavior using a well-defined philosophy of science perspective?	0	1	2	3	4	5	6	7	8	9	10

How confident are you that you can:	Cannot do at all					Moderately certain can do				Very certain can do
13. Demonstrate a scientific understanding of the interaction between the environment and human behavior?	0	1	2	3	4	5	6	7	8	9	10
14. Help clients understand the difference between social and economic justice?	0	1	2	3	4	5	6	7	8	9	10
15. Discuss empirical studies that support what you know about human behavior?	0	1	2	3	4	5	6	7	8	9	10
16. Use quantitative statistics to research the effectiveness of social service delivery?	0	1	2	3	4	5	6	7	8	9	10
17. Use relevant qualitative methods to research social work practice?	0	1	2	3	4	5	6	7	8	9	10
18. Use personal computers to research evidence-based social work knowledge?	0	1	2	3	4	5	6	7	8	9	10
19. Describe how a current piece of social work research might impact practice?	0	1	2	3	4	5	6	7	8	9	10
20. Collect data needed to answer questions about your social work practice?	0	1	2	3	4	5	6	7	8	9	10

APPENDIX L

TABLES

Table 1.

Demographic Characteristics for the Phase 1 Sample.

	N	(%)	M	(SD)
Gender				
Female	125	(87.4)		
Male	18	(12.6)		
Age			27	(6.73)
Ethnicity				
African American	25	(17.5)		
Asian/Asian American	4	(2.8)		
Hispanic/Latin American	2	(1.4)		
Native American	0	(0)		
Caucasian	109	(76.2)		
Multi-ethnic/Other	3	(2.1)		
Degree program standing				
1st Year BSW & Part-time BSW	10	(7)		
2nd Year BSW	19	(13.3)		
> 2nd Year BSW	20	(14)		
1st Year MSW	21	(14.7)		
2nd Year MSW & Advanced MSW	57	(39.2)		
Part-time MSW	16	(11.2)		
Months of professional social work experience			23.3	(28.4)

Table 1 continued.

Demographic Characteristics for the Phase 1 Sample.

	N	(%)	M	(SD)
Professional theoretical orientation				
Cognitive-behavioral	24	(16.8)		
Eclectic	41	(28.7)		
Family-systems	49	(34.3)		
Other	19	(13.3)		
None	10	(7)		
Have participated in a supervised social work field experience				
Yes	113	(79)		
No	30	(21)		
How well field prepared student for practice (n = 113)				
10 point scale (0=Not at all, 10=Very well)			5.87	(3.5)
Length of field experience (n = 113)				
< 6 months	41	(28.7)		
6-12 months	52	(36.4)		
13-18 months	17	(11.9)		
> 18 months	3	(2.1)		

Table 2.

Demographic Comparison of the Phase 1 Sample to the National Population of Social Work Students.

Percentages	Phase 1 Sample	National Population
Gender		
Female	87.4	86
Male	18	13.7
Ethnicity		
Caucasian	76.2	69.1
Minority [A]	23.8	29.7
Degree Program Standing		
1st Year BSW	7	19.0
2nd Year BSW [B]	27.3	33.0
1st Year MSW	14.7	20.0
2nd Year MSW [C]	50.4	28.0
Age [D]		
< 25	57	28.7
26-30	20.3	25.9
31-40	21.7	28
> 41	1	25.65

Note: A= includes African American, Asian American, Latin American, Native American, Other, and Multi-ethnic; B= includes > 2 Year BSWs and Part-time BSWs; C= includes Part-time MSWs and Advanced Standing MSWs; D= no age data available for BSW national population—all estimates reflect MSW population (Lennon, 2002).

Table 3.

Phase 1 Item Descriptive Statistics for 61-Item SAI-P.

Item number	M	(SD)	Range
Item 1	7.74	(1.6)	9
Item 3	7.28	(1.7)	9
Item 5	7.88	(1.7)	8
Item 7	6.60	(2.03)	9
Item 8	7.06	(1.96)	10
Item 9	8.04	(1.51)	9
Item 10	7.62	(2.73)	6
Item 11	8.14	(1.60)	9
Item 12	7.66	(1.80)	9
Item 13	7.76	(1.73)	9
Item 14	6.72	(1.73)	10
Item 15	7.05	(1.85)	10
Item 16	7.08	(2.01)	9
Item 17	7.20	(1.90)	9
Item 18	8.28	(2.50)	5
Item 19	6.71	(2.50)	10
Item 20	6.42	(2.45)	9
Item 22	6.57	(2.05)	6
Item 23	7.84	(1.81)	6
Item 24	6.89	(2.13)	9

Table 3 continued.

Phase 1 Item Descriptive Statistics for 61-Item SAI-P.

Item number	M	(SD)	Range
Item 25	6.52	(2.28)	10
Item 26	6.20	(2.34)	10
Item 27	6.64	(2.09)	10
Item 28	7.20	(2.08)	10
Item 29	6.90	(2.04)	10
Item 30	6.42	(2.16)	10
Item 31	6.94	(2.49)	10
Item 32	5.73	(2.61)	10
Item 33	6.91	(2.38)	10
Item 34	5.57	(2.50)	9
Item 35	7.13	(1.99)	10
Item 36	5.42	(2.55)	10
Item 37	6.60	(2.35)	10
Item 38	7.44	(2.14)	5
Item 39	6.45	(2.47)	10
Item 40	5.86	(2.42)	10
Item 41	6.62	(2.33)	10
Item 42	6.81	(2.00)	7
Item 43	6.49	(2.69)	10
Item 44	5.69	(2.67)	10

Table 3 continued.

Phase 1 Item Descriptive Statistics for 61-Item SAI-P.

Item number	M	(SD)	Range
Item 46	5.17	(2.67)	10
Item 47	5.15	(2.59)	10
Item 48	5.24	(2.65)	10
Item 49	5.52	(2.65)	10
Item 51	7.49	(2.08)	9
Item 53	7.34	(2.07)	10
Item 55	5.06	(4.49)	10
Item 57	6.62	(2.22)	9
Item 58	6.63	(2.41)	10
Item 59	5.35	(2.49)	10
Item 60	7.41	(2.22)	9
Item 61	5.17	(4.07)	10
Item 62	7.43	(2.18)	9
Item 63	6.52	(2.35)	9
Item 64	4.87	(3.53)	10
Item 65	7.27	(2.65)	9
Item 66	6.04	(2.69)	10
Item 67	5.73	(2.69)	10
Item 68	5.54	(2.55)	10
Item 69	5.50	(2.60)	10

Table 3 continued.

Phase 1 Item Descriptive Statistics for 61-Item SAI-P.

Item number	M	(SD)	Range
Item 71	7.38	(2.38)	9

Table 4.

Rotated Factor Matrix and Communality Estimates for the 6-Factor SAI-P Model.

Self-Appraisal Inventory factor/item	I	II	III	IV	V	VI	h2
I. Policy							
49. Explain the issues affecting social welfare policy to elected officials.	**.90**	.00	.00	.00	.00	.00	.83
47. Describe the different administrative policies required to deliver effective social services.	**.64**	.00	-.12	.18	-.11	.00	.73
43. Analyze a specific piece of social policy legislation.	**.52**	.13	-.15	.00	.00	.18	.58
41. Compare how different social welfare policies impact social service delivery.	**.50**	.00	-.13	.11	-.17	.13	.66
66. Use relevant qualitative methods to research social work practice.	**.32**	.00	-.19	.13	.00	.31	.48
II. Values							
13. Describe culturally-competent social work.	.00	**.85**	.00	.00	.10	.00	.70
11. Perceive how cultural difference influence social work practice.	.00	**.84**	.00	.00	.10	.00	.66
15. Assess the service needs of different cultural groups without bias.	.00	**.72**	.00	.00	-.25	-.15	.72
17. View situations from the perspective of a client from a different cultural background.	.00	**.71**	-.19	.00	-.13	-.21	.68

Table 4 continued.

Rotated Factor Matrix and Communality Estimates for the 6-Factor SAI-P Model.

Self-Appraisal Inventory factor/item	I	II	III	IV	V	VI	h2
5. Demonstrate the ability to integrate professional social work ethics into practice.	-.12	**.63**	.00	.13	.00	.16	.55
14. Bridge cultural differences when working with clients who make you feel uncomfortable.	.00	**.63**	.00	.14	-.19	.00	.66
1. Recognize how your personal values may intrude in your work.	-.11	**.61**	.00	.00	.00	.23	.45
3. Analyze how ethical dilemmas affect the quality of services.	.13	**.52**	.00	.00	.00	.00	.38
7. Describe in detail the ethical foundation of professional social work.	.18	**.50**	.00	-.13	.00	.00	.41
III. Human Behavior in the Social Environment (HBSE)							
36. Analyze different theories of human behavior using a well-defined philosophy of science perspective.	.00	.00	**-.95**	.00	.00	-.10	.89
32. Discuss empirical studies that support what you know about human behavior.	.00	.00	**-.69**	.00	-.14	.00	.65
39. Demonstrate the ability to use one empirically-based theory of behavior in a practice setting.	.00	.00	**-.62**	.13	.00	.14	.58

Table 4 continued.

Rotated Factor Matrix and Communality Estimates for the 6-Factor SAI-P Model.

Self-Appraisal Inventory factor/item	I	II	III	IV	V	VI	h2
35. Describe how different social systems promote client well-being?	.17	.12	**-.45**	.18	-.13	.00	.63
31. Demonstrate a scientific understanding of the interaction between the environment and human behavior.	.14	.24	**-.40**	.00	-.12	.00	.56
68. Use quantitative statistics to research the effectiveness of social service delivery.	.20	.00	**-.35**	.00	.00	.32	.48
IV. Practice							
58. Make sure that all clients in a small group setting benefit from participation in that group.	.10	.00	.00	**.81**	-.14	.00	.77
57. Respond to every problem presented by an individual client in the most clinically appropriate manner.	.00	.00	-.18	**.78**	.00	.00	.78
60. Ask questions during supervision that will improve practice outcomes.	.00	.12	.00	**.60**	.00	.25	.58
51. Consistently focus on client assets/ strengths related to issues raised during an intervention, rather than their problems.	.00	.00	-.21	**.55**	.00	.18	.52
59. Use empirically-based methods to intervene in a community.	.28	.00	-.19	**.33**	-.16	.00	.53

Table 4 continued.

Rotated Factor Matrix and Communality Estimates for the 6-Factor SAI-P Model.

Self-Appraisal Inventory factor/item	I	II	III	IV	V	VI	h2
V. Ethics							
28. Make sure clients of a different socio-economic status than yourself have equal access to resources.	.00	.00	.00	.10	**-.84**	.00	.73
27. Promote economic equality for the clients you work with.	.11	.00	-.17	-.11	**-.74**	.00	.75
30. Resolve conflicts between discriminatory service agency policies and your client's needs.	.20	.16	.00	.00	**-.60**	.00	.71
24. Help clients understand the difference between social and economic justice.	.00	.14	-.22	.00	**-.51**	.00	.56
29. List specific ways that social service agencies promote non-discrimination.	.15	.14	.00	.28	**-.46**	.00	.59
VI. Research							
62. Collect data needed to answer questions about your social work practice.	.00	.00	.00	.16	-.24	**.61**	.67
65. Use personal computers to research evidence-based social work knowledge.	.27	.19	.00	.00	.00	**.54**	.57
63. Set aside enough time to gather the information you need to evaluate your personal practice outcomes.	.00	.00	.00	.20	-.31	**.49**	.57

Table 4 continued.

Rotated Factor Matrix and Communality Estimates for the 6-Factor SAI-P Model.

Self-Appraisal Inventory factor/item	I	II	III	IV	V	VI	h2
71. Describe how a current piece of social work research might impact practice.	.16	.13	-.26	.24	.00	**.34**	.64

Table 5.

Rotate Factor Matrix for the 4-Factor SAI-P.

Self-Appraisal Inventory factor/item	I	II	III	IV
I. Human Behavior in the Social Environment (HBSE)				
49. Explain the issues affecting social welfare policy to elected officials.	**.76**	.00	-.172	.00
43. Analyze a specific piece of social policy legislation.	**.72**	.00	.00	.00
47. Describe the different administrative policies required to deliver effective social services.	**.68**	.00	-.18	.00
41. Compare how different social welfare policies impact social service delivery.	**.67**	.00	-.17	.00
28. Make sure clients of a different socio-economic status than yourself have equal access to resources.	**.66**	.00	.00	-.13
27. Promote economic equality for the clients you work with.	**.65**	.00	.00	-.13
30. Resolve conflicts between discriminatory service agency policies and your client's needs.	**.63**	-.16	.20	.00
36. Analyze different theories of human behavior using a well-defined philosophy of science perspective.	**.62**	.00	.00	.00

Table 5 continued.

Rotate Factor Matrix for the 4-Factor SAI-P.

Self-Appraisal Inventory factor/item	I	II	III	IV
32. Discuss empirical studies that support what you know about human behavior.	**.61**	-.15	-.16	.00
29. List specific ways that social service agencies promote non-discrimination.	**.59**	-.12	.13	-.25
39. Demonstrate the ability to use one empirically-based theory of behavior in a practice setting.	**.54**	.00	.00	-.18
35. Describe how different social systems promote client well-being?	**.48**	-.15	-.17	-.16
31. Demonstrate a scientific understanding of the interaction between the environment and human behavior.	**.46**	-.26	-.13	.00
24. Help clients understand the difference between social and economic justice.	**.42**	.00	.00	-.27
59. Use empirically-based methods to intervene in a community.	**.39**	.00	-.18	-.32
II. Values				
13. Describe culturally-competent social work.	.00	**.85**	.00	.00
11. Perceive how cultural difference influence social work practice.	.00	**-.84**	.00	.00
15. Assess the service needs of different cultural groups without bias.	-.17	**-.78**	-.27	.00

Table 5 continued.

Rotate Factor Matrix for the 4-Factor SAI-P.

Self-Appraisal Inventory factor/item	I	II	III	IV
17. View situations from the perspective of a client from a different cultural background.	.00	**-.76**	-.18	.00
5. Demonstrate the ability to integrate professional social work ethics into practice.	.00	**-.66**	.00	-.19
14. Bridge cultural differences when working with clients who make you feel uncomfortable.	.00	**-.65**	**-**.20	-.14
1. Recognize how your personal values may intrude in your work.	.00	**-.63**	.17	.00
3. Analyze how ethical dilemmas affect the quality of services.	.11	**-.53**	.00	.00
7. Describe in detail the ethical foundation of professional social work.	.25	**-.50**	.00	.13
III. Research				
68. Use quantitative statistics to research the effectiveness of social service delivery.	.00	.00	**-.74**	-.19
66. Use relevant qualitative methods to research social work practice.	.33	.00	**-.64**	.00
65. Use personal computers to research evidence-based social work knowledge.	.23	-.19	**-.54**	-.12

Table 5 continued.

Rotate Factor Matrix for the 4-Factor SAI-P.

Self-Appraisal Inventory factor/item	I	II	III	IV
71. Describe how a current piece of social work research might impact practice.	.00	-.16	**-.46**	-.29
62. Collect data needed to answer questions about your social work practice.	.33	-.19	**-.44**	.00
IV. Practice				
58. Make sure that all clients in a small group setting benefit from participation in that group.	.00	.00	-.19	**-.80**
57. Respond to every problem presented by an individual client in the most clinically appropriate manner.	.15	.00	.00	**-.74**
60. Ask questions during supervision that will improve practice outcomes.	.10	-.12	.00	**-.65**
51. Consistently focus on client assets/ strengths related to issues raised during an intervention, rather than their problems.	.12	.00	.00	**-.64**
63. Set aside enough time to gather the information you need to evaluate your personal practice outcomes.	.32	.00	-.13	**-.31**

Table 6.

First Reliability Analysis for the 6-Factor SAI-P and Policy, Values, HBSE, Practice, Ethics, and Research Subscales.

	Coefficient alpha
Policy Subscale	.87
Values Subscale	.91
HBSE Subscale	.88
Practice Subscale	.87
Ethics Subscale	.89
Research Subscale	.84
Total SAI-P	.96

Table 7.

Phase 1 Item-Total Statistics for the Policy, Values, HBSE, Practice, Ethics, and Research subscales (n = 143).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Policy Subscale				
Item 41	23.2098	76.4909	.7292	.8418
Item 43	23.3427	73.2268	.6773	.8528
Item 47	24.6783	71.2338	.7711	.8294
Item 49	24.3077	69.6511	.7884	.8246
Item 66	23.7902	77.8289	.5591	.8814
Values Subscale				
Item 1	58.8112	122.6472	.5859	.9046
Item 3	59.0979	121.0749	.5927	.9043
Item 5	58.6713	116.8701	.7122	.8961
Item 7	59.9510	115.8074	.5955	.9060
Item 11	58.4126	117.8497	.7333	.8950
Item 13	58.7902	114.6458	.7656	.8922
Item 14	59.8322	115.5914	.7361	.8944
Item15	59.5035	112.8010	.7542	.8928
Item 17	59.3497	113.1163	.7266	.8949
Human Behavior in the Social Environment Subscale				
Item 36	31.7972	89.7825	.8228	.8377

Table 7 continued.

Phase 1 Item-Total Statistics for the Policy, Values, HBSE, Practice, Ethics, and Research Subscales (n = 143).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Item 32	31.4825	91.4768	.7557	.8497
Item 39	30.7692	96.7985	.6812	.8626
Item 35	30.0839	103.4436	.7101	.8612
Item 31	30.2727	97.4110	.6612	.8659
Item 68	31.6783	101.5578	.5444	.8856
Practice Subscale				
Item 58	26.8671	53.4400	.7540	.8241
Item 57	26.8741	55.1390	.7800	.8187
Item 60	26.0909	57.4917	.6935	.8399
Item 51	26.0070	60.9788	.6322	.8545
Item 59	28.1469	56.6614	.6126	.8622
Ethics Subscale				
Item 28	26.8531	51.5065	.7318	.8735
Item 27	27.4126	50.4976	.7649	.8661
Item 30	27.6364	48.5992	.8111	.8552
Item 24	27.1678	51.5491	.7067	.8792
Item 29	27.1538	53.0466	.6899	.8825

Table 7 continued.

Phase 1 Item-Total Statistics for the Policy, Values, HBSE, Practice, Ethics, and Research Subscales (n = 143).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Research Subscale				
Item 62	21.1608	37.5162	.7245	.7721
Item 65	21.3287	34.6588	.6396	.8098
Item 63	22.0769	37.6631	.6368	.8065
Item 71	21.2168	36.2696	.6845	.7857

Table 8.

Final Phase 1 Reliability Analysis for the SAI-P and Policy, Values, HBSE, Practice, Ethics, and Research Subscales.

	Coefficient alpha
Policy Subscale	.88
Values Subscale	.91
HBSE Subscale	.89
Practice Subscale	.87
Ethics Subscale	.89
Research Subscale	.87
Total SAI-P	.96

Table 9.

First Reliability Analysis for the 4-Factor SAI-P and Values, Practice, HBSE, and Research Subscales.

	Coefficient alpha
Values Subscale	.91
Practice Subscale	.86
HBSE Subscale	.91
Research Subscale	.85
Total SAI-P	.96

Table 10.

Second Reliability Analysis for the 4-Factor SAI-P and Values, Practice, HBSE, and Research Subscales.

	Coefficient alpha
Values Subscale	.91
Practice Subscale	.87
HBSE Subscale	.92
Research Subscale	.86
Total SAI-P	.96

Table 11.

Phase 1 Item-Total Statistics for the 34-Item SAI-P (n = 143).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Item 1	222.0070	2366.4718	.4446	.9587
Item 3	222.2937	2355.6033	.4863	.9585
Item 5	221.8671	2342.3555	.5644	.9581
Item 7	223.1469	2331.2811	.5241	.9583
Item 11	221.6084	2353.6061	.5271	.9583
Item 13	221.9860	2343.1829	.5502	.9581
Item 14	223.0280	2323.9288	.6670	.9575
Item 15	222.6993	2330.6765	.5811	.9579
Item 17	222.5455	2331.5736	.5636	.9580
Item 24	222.8601	2298.8113	.6614	.6687
Item 27	223.1049	2295.6157	.6886	.9572
Item 28	222.5455	2322.0102	.5588	.9581
Item 29	222.8462	2304.0184	.6653	.9574
Item 30	223.3287	2282.8701	.7309	.9570
Item 31	222.8042	2265.1445	.7053	.9571
Item 32	224.0140	2264.3237	.6725	.9573
Item 35	222.6154	2292.6750	.7454	.9569
Item 36	224.3287	2265.0673	.6869	.9572
Item 39	223.3007	2278.9864	.6490	.9575

Table 11 continued.

Phase 1 Item-Total Statistics for the 34-Item SAI-P (n = 143).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Item 41	223.1259	2267.7446	.7454	.9568
Item 43	223.2587	2264.6298	.6512	.9575
Item 47	224.5944	2252.9752	.7278	.9569
Item 49	224.2238	2271.5411	.6320	.9577
Item 51	222.2587	2320.0382	.5696	.9580
Item 57	223.1259	2288.9277	.6797	.9573
Item 58	223.1189	2285.6407	.6376	.9576
Item 59	224.3986	2273.0583	.6703	.9573
Item 60	222.3427	2303.9451	.6067	.9578
Item 62	222.3147	2299.4707	.6428	.9575
Item 63	223.2308	2292.4464	.6235	.9577
Item 65	222.4825	2290.5613	.5563	.9582
Item 66	223.7063	2281.7441	.5815	.9581
Item 68	224.2098	2288.2937	.5880	.9580
Item 71	222.3706	2269.6574	.7187	.9570

Table 12.

Phase 2 Response Rates by School.

School	Total Distributed N	Instruments Not Returned or Incomplete N (Percent)	Instruments Returned Complete N (Percent)
GSU	92	19 (21)	73 (79)
UALR	142	14 (10)	128 (90)
UAF	32	5 (16)	27 (84)
UGA	48	3 (6)	45 (94)
ASU	36	8 (22)	28 (78)
Total	350	49 (14)	301 (86)

Note: GSU= Georgia State University, UALR=University of Arkansas Little Rock, UAF=University of Arkansas Fayetteville, UGA=University of Georgia Athens, ASU=Arkansas State University

Table 13.

Demographic Characteristics for the Phase 2 Sample (N = 301).

	N	(%)	M	(SD)
Gender				
Female	260	(86.4)		
Male	41	(13.6)		
Age			29.5	(9.4)
Ethnicity				
African American	111	(36.9)		
Asian/Asian American	6	(2.0)		
Hispanic/Latin American	8	(2.7)		
Native American	2	(0.7)		
Caucasian	170	(56.5)		
Multi-ethnic/Other	3	(1.0)		
Degree program standing				
1st Year BSW & Part-time BSW	82	(27.2)		
2nd Year BSW	43	(14.3)		
> 2nd Year BSW	39	(13.0)		
1st Year MSW	68	(22.6)		
2nd Year MSW & Advanced MSW	38	(12.6)		
Part-time MSW	31	(10.3)		
Months of professional social work experience				
			32.7	(28.4)

Table 13 continued.

Demographic Characteristics for the Phase 2 Sample (N = 301).

	N	(%)	M	(SD)
Professional theoretical orientation				
Cognitive-behavioral	68	(22.6)		
Eclectic	50	(16.6)		
Family-systems	104	(34.6)		
Other	31	(10.3)		
None	48	(15.3)		
Have participated in a supervised social work field experience				
Yes	172	(57.1)		
No	129	(42.9)		
How well field prepared student for practice (n = 172)				
10 point scale (0=Not at all, 10=Very well)			7.4	(1.9)
Length of field experience (n = 172)				
< 6 months	73	(24.3)		
6-12 months	62	(20.6)		
13-18 months	25	(8.3)		
> 18 months	12	(4.0)		

Table 14.

Demographic Comparison of the Phase 2 Sample to the National Population of Social Work Students.

Percentages	Phase 2 Sample	National Population
Gender		
Female	86.4	86.0
Male	13.6	13.7
Ethnicity		
Caucasian	56.5	69.1
Minority **A**	43.5	29.7
Degree Program Standing		
1st Year BSW	27.2	19.0
2nd Year BSW **B**	27.3	33.0
1st Year MSW	22.6	20.0
2nd Year MSW **C**	22.9	28.0
Age **D**		
< 25	48.8	28.7
26-30	16.6	25.9
31-40	66.1	28
> 41	33.9	25.65

Note: A= includes African American, Asian American, Latin American, Native American, Other, and Multi-ethnic; B= includes > 2 Year BSWs and Part-time BSWs; C= includes Part-time MSWs and Advanced Standing MSWs; D= no age data available for BSW national population—all estimates reflect MSW population (Lennon, 2002).

Table 15.

Phase 2 Item Descriptive Statistics for 37-Item SAI.

Item number	M	(SD)	Range
Item 1	5.06	(2.72)	9
Item 2	7.44	(2.23)	10
Item 3	6.78	(2.51)	9
Item 4	5.99	(2.65)	10
Item 5	6.98	(2.43)	10
Item 6	6.77	(2.54)	10
Item 7	5.00	(3.25)	8
Item 8	6.87	(2.23)	9
Item 9	7.02	(2.69)	9
Item 10	6.22	(2.53)	9
Item 11	6.12	(2.30)	10
Item 12	6.16	(2.61)	10
Item 13	5.66	(2.68)	10
Item 14	5.88	(2.44)	9
Item 15	6.22	(2.50)	10
Item 16	5.39	(2.49)	9
Item 17	6.34	(2.46)	10
Item 18	5.19	(2.60)	9
Item 19	7.08	(2.64)	9

Table 15 continued.

Phase 2 Item Descriptive Statistics for 37-Item SAI.

Item number	M	(SD)	Range
Item 20	5.70	(2.79)	9
Item 21	5.40	(3.04)	10
Item 22	6.93	(2.46)	9
Item 23	5.19	(2.60)	10
Item 24	6.22	(2.50)	10
Item 25	6.16	(2.61)	9
Item 26	5.15	(2.00)	10
Item 27	5.39	(2.40)	10
Item 28	5.66	(2.68)	9
Item 29	5.59	(2.65)	9
Item 30	5.55	(2.79)	9
Item 31	7.21	(2.38)	10
Item 32	6.65	(2.50)	10
Item 33	6.10	(2.57)	10
Item 34	7.31	(2.39)	9
Item 35	5.76	(2.58)	9
Item 36	5.15	(2.68)	10
Item 37	6.24	(2.61)	9

Table 16.

Item-Total Statistics for the 21 Retained Items from 37-Item SAI (n = 301).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Item 2	123.5382	1469.8094	.7458	.9600
Item 3	122.9834	1471.6297	.7423	.9601
Item 4	122.8937	1487.3753	.7491	.9601
Item 6	123.1262	1486.8640	.7423	.9602
Item 8	122.3189	1504.3246	.6441	.9612
Item 10	123.7641	1462.8142	.7452	.9600
Item 12	123.6013	1464.3139	.7500	.9600
Item 13	124.0963	1454.6207	.7770	.9596
Item 14	122.2359	1534.7475	.5217	.9623
Item 16	124.2126	1460.1146	.7161	.9604
Item 18	124.3555	1452.9565	.6852	.9610
Item 20	124.0565	1456.9535	.7334	.9602
Item 21	123.8738	1469.6173	.7781	.9597
Item 23	124.5615	1458.5670	.7825	.9596
Item 24	123.5382	1467.4760	.7694	.9598
Item 27	124.3654	1467.4927	.7715	.9597
Item 28	124.6113	1466.4717	.7182	.9604
Item 30	124.0033	1468.9833	.7348	.9602
Item 32	122.4518	1504.1752	.6004	.9617

Table 16 continued.

Item-Total Statistics for the 21 Retained Items from 37-Item SAI (n = 301).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Item 34	123.5216	1456.4837	.7921	.9595
Item 36	123.1063	1471.5087	.7469	.9600

NOTE: Item numbers denote sequence from the 37-item version of the SAI

Table 17.

Phase 2 Summary Table of the Comparative 6-Factor and 4-Factor Confirmatory Factor Analysis.

Model	$\chi 2$	df	$\chi 2$/df	RMSEA	(90%CI)	GFI	AGFI	NNFI
6 Factor	371.6	155	2.4	.064	(.055-.073)	.90	.86	.95
4 Factor	413.5	164	2.5	.068	(.059-.076)	.88	.85	.95

Table 18.
6-Factor Model Parameter Estimates, Standard Errors, Significance Tests, and Squared Multiple Correlations.

Item	Values	Practice	Policy	Ethics	HBSE	Research	t-value	R^2
1	.83(--)	--	--	--	--	--	1.00	.69
2	.77(.06)	--	--	--	--	--	15.12	.59
3	.84(.06)	--	--	--	--	--	17.05	.70
4	.73(.06)	--	--	--	--	--	13.99	.53
5	.86(.06)	--	--	--	--	--	17.82	.75
6	--	.74(--)	--	--	--	--	1.00	.55
7	--	.86(.08)	--	--	--	--	14.74	.74
8	--	.90(.08)	--	--	--	--	15.10	.81
9	--	--	.66(--)	--	--	--	1.00	.44
10	--	--	.59(.10)	--	--	--	8.61	.35
11	--	--	--	.62(--)	--	--	1.00	.39
12	--	--	--	.58(.11)	--	--	8.78	.33
13	--	--	--	--	.57(--)	--	1.00	.32
14	--	--	--	--	.56(.12)	--	8.35	.31
15	--	--	--	--	.50(.11)	--	7.73	.25
16	--	--	--	--	--	.76(--)	1.00	.58
17	--	--	--	--	--	.86(.07)	15.87	.74
18	--	--	--	--	--	.88(.07)	16.39	.78
19	--	--	--	--	--	.89(.07)	16.54	.79
20	--	--	--	--	--	.80(.07)	14.67	.65

NOTE: Standard errors are in parentheses following parameter estimates. Item numbers denote sequence entered in LISREL not original sequence from the 20-item SAI.

Table 19.

4-Factor Model Parameter Estimates, Standard Errors, Significance Tests, and Squared Multiple Correlations.

Item	Values	Practice	HBSE	Research	t-value	R^2
1	.83(--)	--	--	--	1.00	.69
2	.77(.06)	--	--	--	15.15	.59
3	.84(.06)	--	--	--	16.99	.70
4	.73(.06)	--	--	--	14.05	.53
5	.86(.06)	--	--	--	17.80	.75
6	--	.75(--)	--	--	1.00	.56
7	--	.86(.08)	--	--	14.72	.74
8	--	.90(.08)	--	--	15.10	.81
9	--	--	.65(--)	--	1.00	.43
10	--	--	.58(.11)	--	8.27	.33
11	--	--	.64(.11)	--	8.95	.41
12	--	--	.60(.11)	--	8.50	.36
13	--	--	.64(.11)	--	8.95	.41
14	--	--	.61(.11)	--	8.64	.37
15	--	--	.52(.11)	--	7.58	.27
16	--	--	--	.76(--)	1.00	.58
17	--	--	--	.86(.07)	15.87	.74
18	--	--	--	.88(.07)	16.45	.78
19	--	--	--	.89(.07)	16.58	.79
20	--	--	--	.80(.07)	14.70	.65

NOTE: Standard errors are in parentheses following parameter estimates. Item numbers denote sequence entered in LISREL, not original sequence from the 20-item SAI.

Table 20.

Correlations (r^2) between 6 Hypothetical SAI Subscales: Values, Practice, Policy, Ethics, HBSE, and Research.

	1	2	3	4	5	6
Values	1.00					
Practice	0.31(4.42)	1.00				
Policy	0.48(5.38)	0.29(3.45)	1.00			
Ethics	0.26(3.00)	0.40(4.40)	0.95(7.05)	1.00		
HBSE	0.44(4.80)	0.44(4.70)	1.10(7.36)	1.25(7.53)	1.00	
Research	0.22(3.30)	0.57(6.94)	0.24(2.91)	0.07(0.80)	0.22(2.69)	1.00

NOTE: t-statistics are included in parentheses following r^2

Table 21.

Correlations (r^2) between 4 Hypothetical SAI Subscales: Values, Practice, HBSE, and Research.

	1	2	3	4
Values	1.00			
Practice	0.31(4.42)	1.00		
HBSE	0.38(4.98)	0.37(4.71)	1.00	
Research	0.22(0.04)	0.57(0.05)	0.17(0.03)	1.00

NOTE: t-statistics are included in parentheses following r^2

Table 22.

Summary of Confirmatory Factor Analysis Model-Fitting for the 4-Factor Model of Social Work Student Self-Efficacy (N = 301).

Model Specification	χ^2	df	$\Delta\chi^2$	Δdf	χ^2/df	GFI	RMSEA
1. Four Factor Model	413.54	164	--	--	2.52	.88	.068
2. Model 1 with λ (17,2) free	386.85	163	26.69	1	2.37	.89	.063
3. Model 1 with λ(17,2) and δ(4,3) free	366.49	162	19.56	1	2.28	.90	.061
4. Model 1 with λ(17,2) δ(4,3), and δ(12,5) free	351.29	161	15.20	1	2.18	.90	.059
5. Model 1 with λ(17,2) δ(4,3), δ(12,5), and δ(12,9) free	335.78	160	15.51	1	2.09	.90	.057
6. Model 1 with λ(17,2) δ(4,3), δ(12,5),δ(12,9), and δ(15,3) free	322.31	159	13.47	1	2.03	.91	.052

NOTE: Parameter notation, such as λ(17,2), reflects the sequence in which items were entered into LISREL and should not be confused with the sequence of items on original measurement instruments.

Table 23.

Item-Total Statistics for the 4-Factor Model Subscales: Values, Practice HBSE, and Research (n = 301).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Values Subscale				
SAI Item 6	26.94	64.31	.7506	.8749
SAI Item 8	26.85	67.12	.7891	.8671
SAI Item 7	27.08	65.89	.8165	.8610
SAI Item 2	26.28	70.66	.6706	.8913
SAI Item 4	27.72	63.16	.7278	.8818
Practice Subscale				
SAI Item 25	11.21	26.70	.7517	.8720
SAI Item 28	11.71	24.91	.8084	.8229
SAI Item 30	11.82	24.10	.7966	.8338
HBSE Subscale				
SAI Item 21	34.63	168.48	.7227	.9191
SAI Item 20	34.33	170.69	.7715	.9125
SAI Item 14	34.15	179.13	.7613	.9136
SAI Item 18	34.84	173.13	.8000	.9095
SAI Item 15	33.81	177.17	.7720	.9125
SAI Item 10	33.82	178.87	.7306	.9164
SAI Item 16	34.64	175.27	.8074	.9092

Table 23 continued.

Item-Total Statistics for the 4-Factor Model Subscales: Values, Practice HBSE, and Research (n = 301).

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-total Correlation	Alpha if Item Deleted
Research Subscale				
SAI Item 36	25.96	78.56	.8301	.9013
SAI Item 35	25.35	78.27	.8809	.8909
SAI Item 34	23.80	86.30	.7477	.9172
SAI Item 37	24.87	81.09	.7932	.9087
SAI Item 32	24.46	84.02	.7612	.9147

Table 24.

Convergent and Discriminant Construct Validity Correlation Coefficients (n = 301).

	Values Subscale	Practice Subscale	HBSE Subscale	Research Subscale	Total SAI
Convergent Validity					
LOT-R	.253*	.272*	.269*	.265*	.273*
SWSC	.357*	.285*	.352*	.341*	.380*
CAS	-.068	-.054	-.090	-.080	-.085
Experience	.213*	.258*	.253*	.189*	.256*
Class Standing[a]	.160*	.173*	.156*	.150*	.167*
Discriminant Validity					
CES-D	.018	-.043	-.047	-.056	-.038
Prepared By Field (n = 172)	.336*	.305*	.307*	.267*	.354*

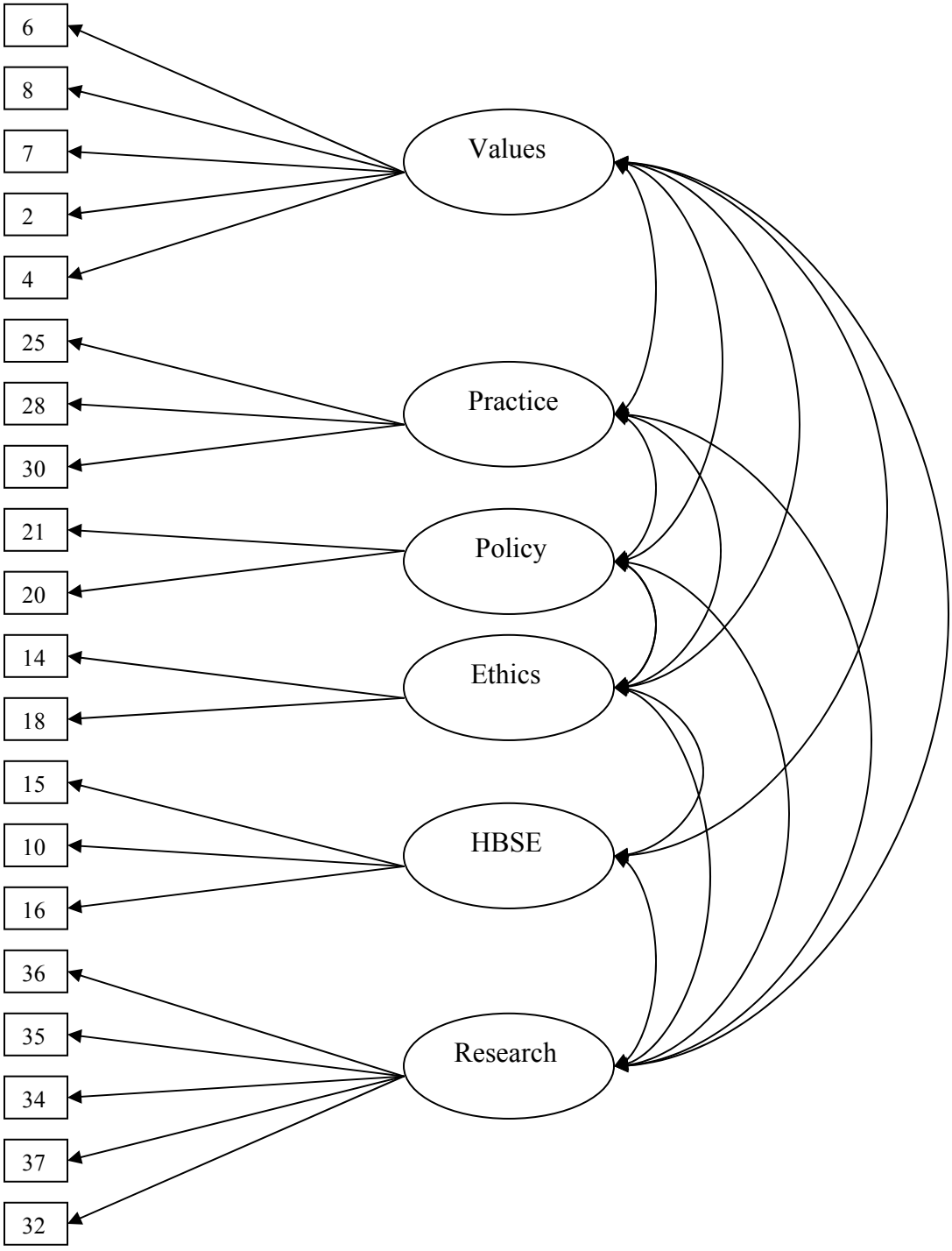
NOTE: * Significant r^2, $p \leq .001$ (two-tailed); Unless otherwise noted, all variables were continuous and analyzed using Pearson product-moment correlation coefficients. Variables designated with [a] were measured at the ordinal level and analyzed using Spearman's rho.

APPENDIX M

FIGURES

Figure 1.

6-Factor Model of Social Work Student Self-Efficacy using 20-item SAI.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Values
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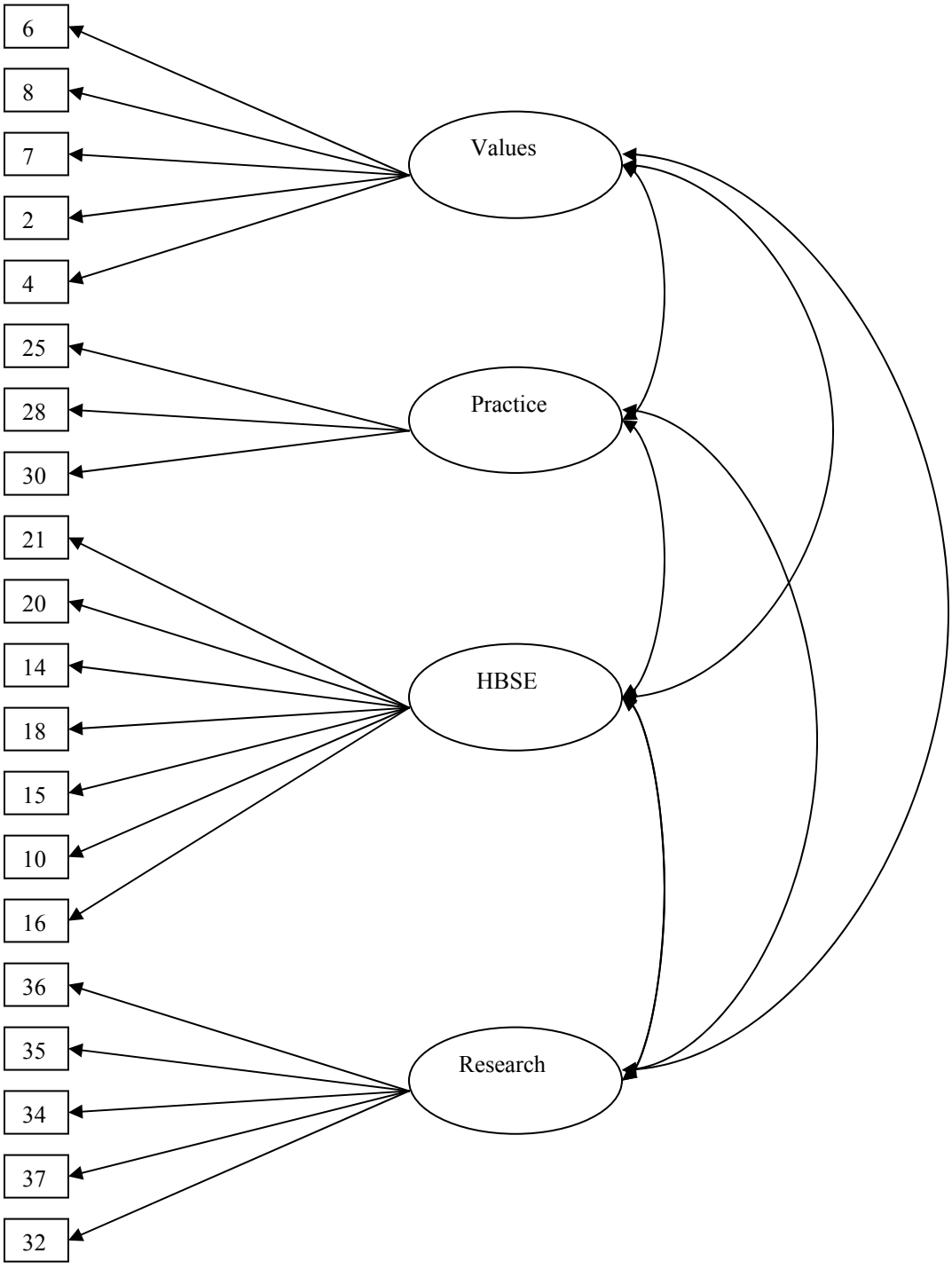
Research

Figure 2.

4-Factor Model of Social Work Student Self-Efficacy using 20-item SAI.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Values
Practice
HBSE
Research

Figure 3.

Phase 1 Scree Plot for the SAI-P.

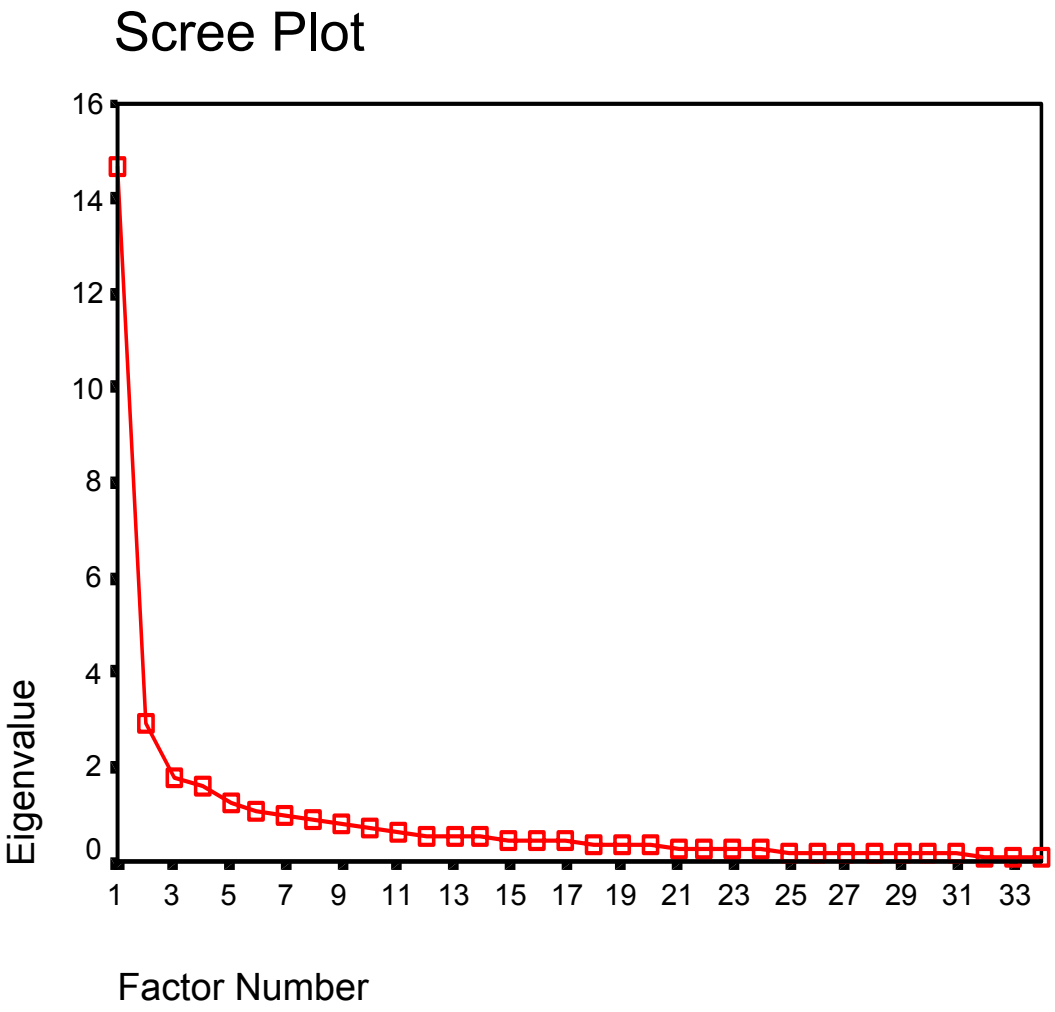
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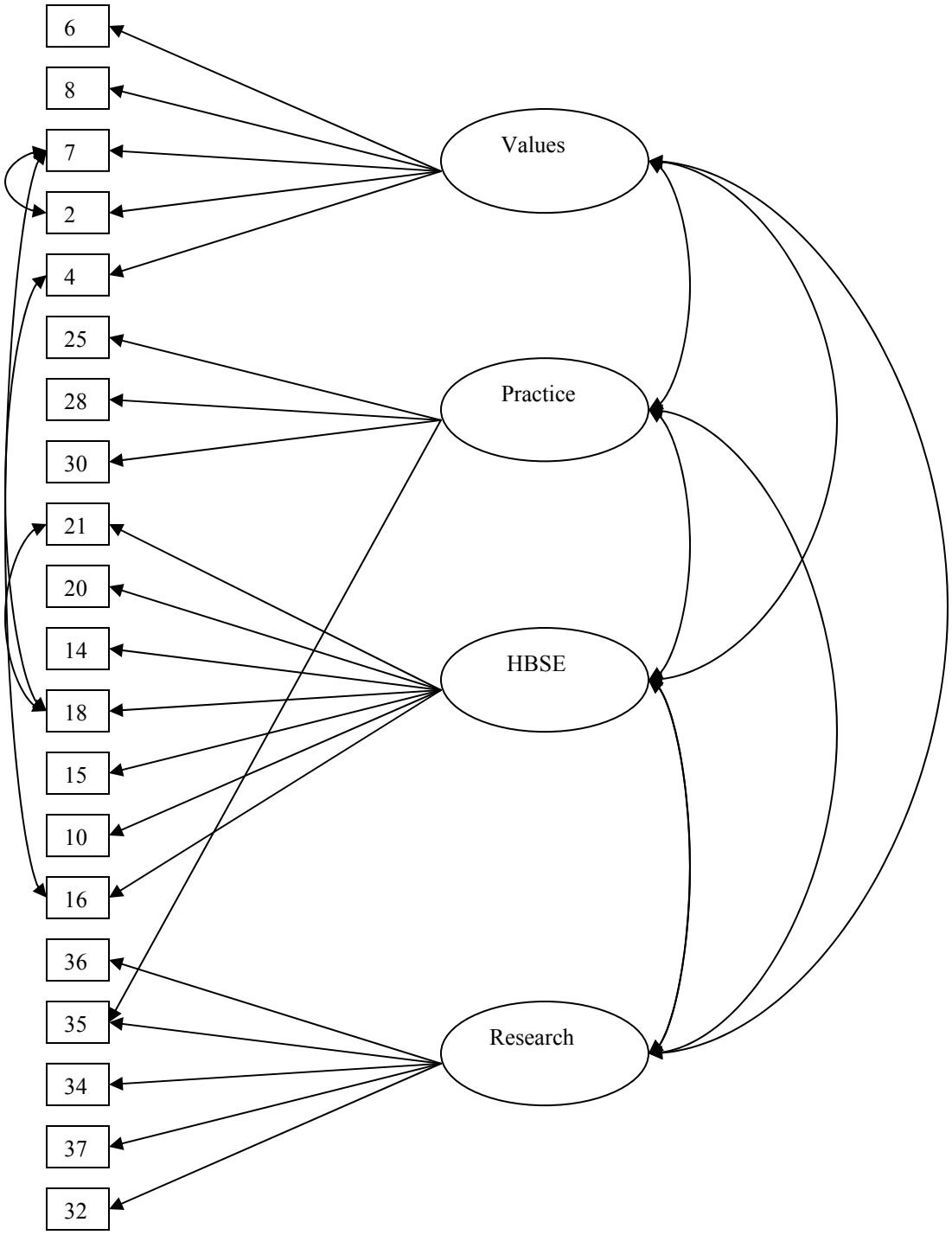
Figure 4.

Final Post Hoc Fitted 4-Factor Model of Social Work Student Self-Efficacy using 20-item SAI.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