

EXAMINING STAGES OF CHANGE WITH UNDERGRADUATE STUDENTS ON  
ACADEMIC PROBATION

by

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(Under the Direction of Rosemary E. Phelps)

ABSTRACT

This study examined the relationship between a student's level of readiness to change and his/her academic progress after being placed on academic probation. Readiness to change has been studied extensively using the Stages of Change (SOC) dimension of the Transtheoretical Model (TTM). The *Stages of Change Questionnaire* (SCQ) was developed to assess readiness to change. In the present study, a modified SCQ was used to evaluate readiness to change among undergraduate students on academic probation ( $N = 47$ ).

The purpose of this study was to test the use of the SOC paradigm with students on academic probation. A more specific goal was to determine whether the SCQ could help to identify distinct groups of students on academic probation in terms of their stage of change. Finally, an additional goal was to determine the degree to which a student's stage of change influences academic performance.

Results indicated that none of the SCQ subscale (Precontemplation, Contemplation, Action, Maintenance) scores were significantly correlated with the dependent variables (semester GPA residual gain score, cumulative GPA residual gain score, end of semester probation status). This finding suggests that a relationship between each stage of change and academic performance was not empirically supported. However, employing cluster analysis, three cluster groups (Precontemplation, Uninvolved, Participation) emerged using SCQ subscale scores to classify participants. Furthermore, ANOVA methods indicated that the three cluster groups were significantly different with respect to their SCQ subscale scores. The three cluster groups were not, however, significantly different with respect to their performance on the dependent variables, suggesting that the influence of SOC on academic performance was not empirically supported. Although the influence of SOC on academic performance was not statistically significant, a consistent trend toward increasing scores emerged from Precontemplation to Uninvolved to Participation cluster groups on each of the dependent variables.

Suggestions for incorporating the SOC paradigm within an existing intervention model in the literature are offered. Ideas for utilizing the SCQ with undergraduate students on academic probation are proposed. Examples of interventions for students

within each cluster group are delineated. Lastly, limitations of this study and ideas for future research are discussed.

INDEX WORDS: Academic Probation, Stages of Change, Undergraduate Students, Transtheoretical Model

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DEDICATION

For my loving wife Sandra A. Rojas and my son Matthew

and

For my mother Ramona I. Hiatt

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## CHAPTER 1

### INTRODUCTION

Deciding to attend college can be a significant decision with profound effects for one's future (Astin, 1993). Unfortunately, some students who decide to attend an institution of higher education will not obtain a degree. Approximately 50% of freshman college students fail to complete their undergraduate education at institutions of higher learning (Riley, McGuire, Dessy, & Dorfman, 1999). Of all institutional departures nationally, approximately 25% are related to failing to maintain satisfactory academic performance, and take the form of academic dismissal (Tinto, 1993).

Academic dismissal represents the end of the road for a student whose journey to academic peril began with being placed on academic probation. In general, academic probation indicates that a student's grade point average (GPA) has fallen below an acceptable minimum standard (usually defined as a 2.0 cumulative average). National statistics for students on academic probation are difficult to collect because there is significant variation in how institutions define academic probation, and the figures fluctuate from semester to semester at the more than 3,500 U.S. institutions (Locher, 1989). However, some estimates indicate that approximately 24% of undergraduate college students end up on academic probation one or more times while pursuing their college education (Garnett, 1990, as cited in Coleman & Freedman, 1996).

Statistics at the local level, at the institution from which the sample was drawn, reveal disturbing patterns also. At The University of Georgia the number of students on

academic probation for Fall 1998 was 1,436 (6.0 %); for Spring 1999, 1,296 (5.7 %); for Fall 1999, 1,454 (6.0 %); and for Spring 2000, 1,260 (5.5 %). During that same two-year period, 545 students were dismissed in the 1998-1999 academic year, and 646 students were dismissed in the 1999-2000 academic year for failing to maintain acceptable academic standing (D. Stewart, Assistant Registrar, personal communication, November 29, 2001).

### *Institutional Perspectives of Students in Academic Difficulty*

Assessment of a student's progress at an institution of higher learning is most often communicated in the form of grades. Letter grades remain the most commonly employed method to provide feedback to students regarding their academic performance, and represent an important indicator of academic progress (Astin, 1993). Kelley (1996) noted that academic probation may be used by institutions of higher education to:

(a) punish students that have failed to meet institutional standards; (b) inform students of the status of their educational goals; and (c) identify and intervene with students who are at risk for not completing their educational goals.

Ramirez and Evans (1988) identified at least two types of institutional perspectives regarding academic probation. One perspective views academic probation as a natural selection process where less prepared students are dismissed from the institution. Another perspective assumes students admitted have the potential to be successful and that other issues (e.g., personal, social, financial) may impede academic progress. Despite these divergent views, Newton (1990) noted that there has been significant pressure on institutions to provide resources for students experiencing academic difficulty.



### *Factors Contributing to Academic Difficulty*

Students on academic probation represent a group that is particularly at risk for not completing college (Gordon, 1992). Archer (1991) underscored the importance of academic success by noting, “Nothing is more important for most students than the achievement of academic success. Grades are clearly the most important measure of academic success and are seen by most students as the most important determinant of future life success” (p. 57). For students who experience academic difficulty, the reasons are multifaceted and complex.

The first sign of difficulty for many students is when they are placed on academic probation (Gallagher, 1983). It is not uncommon for some professors and administrators to attribute academic problems to deficiencies in a student’s academic ability. However, Gordon (1992) noted, “Very few students in academic trouble are there because of the lack of ability” (p. 104). This position has been reiterated by Altmaier, Rapaport, and Seeman (1983) who noted that being placed on probation may not be due to a lack of academic potential and/or ability, but other factors.

The detrimental effects of being placed on academic probation are documented in the literature. Pitcher and Blaushild (1970) found that being placed on academic probation can lead to feelings of inadequacy. Others have determined that being on academic probation can further interfere with academic performance (e.g., Altmaier et al., 1983). For a number of students, academic probation may influence their decision to withdraw from or remain in school (Astin, 1975). Tragically, some students conclude that an institution has failed them (Nespor & Roueche, 1983). Considering the consequences

that can result from placing students on academic probation, an examination of the specific factors that may account for student academic failure is warranted.

One direction in the literature has been to identify factors that contribute to academic probation. For example, Browne (1986-87) noted that students typically report the following reasons for scholastic failure: lack of studying, poorly defined goals, personal problems, numerous class absences, mismatch with major, dissatisfaction with instructors and faculty, too many extracurricular activities, family illness or problems, and dissatisfaction with the university. Some efforts have been made to delineate factors that are specific to an institution (internal) and those that are occurring in a student's personal life (external). Ramirez and Evans (1988) noted some common internal factors (e.g., inappropriate course selection, poor scheduling, lack of support services, faculty members' lack of information on resources for students in academic difficulty), while common external factors included financial concerns, family issues, employment, and health problems.

The consensus among student affairs professionals, administrators, and other higher education professionals that interventions are needed for students on academic probation is not a recent concern. Pitcher and Blaushild (1970) noted, "In selecting the correct alternative after academic failure, it is clear that a student must have some intervening experience of rehabilitation before continuing his education, without it, he runs the risk of seriously compounding his problems" (p. 254). The need for intervention has also been supported by Nespor and Roueche (1983) who suggested that students on probation are often not aware of their academic status and/or do not comprehend the significance of being placed on probation. As a result of the identified need for

intervention, increasing attention has been given to the development of programs that target this group of students (Altmaier et al., 1983; Coleman & Freedman, 1996; Foreman, Wilkie, & Keilen, 1990).

#### *Intervention Programs for Students on Academic Probation*

Some have argued that students on academic probation present a unique challenge to individuals designing intervention programs because of the range of needs within this group (Altmaier et al., 1983; Greer, Somers, Poe, & Wilder, 1982). The problem is further compounded by the tendency for students on academic probation to underutilize resources on campus despite knowing that they are in academic jeopardy (Altmaier et al., 1983; Schwitzer, Grogan, Kaddoura, & Ochoa, 1993).

Interventions available for students in academic difficulty range from an official notice from the institution to comprehensive intervention programs. An example of the former would be a letter notifying the student of his/her academic probation status and a warning that he/she needs to take steps to make academic progress. An example of the latter would be a program that provides assessment, academic counseling, referral, support, and monitoring of the student's progress. Most programs for students on academic probation fall somewhere along a minimal to comprehensive services continuum.

Some of the programmatic efforts found in the literature include providing a self-directed assistance program for students on academic probation (Harr, 1993). Other interventions rely on voluntary academic support groups (Halstead, 1998). Some programs focus on teaching skills to help students succeed in college (Miller & Sonner, 1996; Newton, 1990; Petrie & Helmcamp, 1998; VanBrunt & Hunt, 1994). A number of

programs have incorporated a personal counseling component to help students address issues that impact academic performance (Hudesman, Avramides, Loveday, Waber, & Wendell, 1983; Hudesman, Avramides, Loveday, Wendell, & Griemsmann, 1986; Lemoncelli & Leonard, 1990). The use of group counseling interventions has also been explored as a way to help students achieve satisfactory academic standing (Austin, Cherney, Crouner, & Hill, 1997). Finally, more comprehensive programs include assistance, monitoring, ongoing evaluation, and referral components in their intervention models (Coleman & Freedman, 1996; Rojas, Knauft, Broder, & Campbell-Burden, 2002). The success rates among programs are overwhelmingly positive with relatively few showing no effectiveness (Letchworth & Bleidt, 1983).

In addition to programmatic differences, programs also vary in terms of the level of engagement with students on academic probation. Most of the programs developed for this group of students are either voluntary or mandatory (Earl, 1988; Foreman et al., 1990; Garnett, 1990; Johnson, 1986; Newton, 1990; Ramirez & Evans, 1988; Schwitzer et al., 1993). Voluntary programs seem to place trust in a student's ability to recognize the problem area and seek assistance. Mandatory programs contend that interventions can help address current problems and help prevent future difficulties. According to Himelstein (1992), mandatory programs are necessary because students in academic difficulty "show a disinclination to voluntarily seek assistance until academic recovery is impossible" (p. 89). However, it is possible that not all students require mandatory intervention.

### Statement of the Problem

One criticism of intervention programs is that they are guided by the assumption that most students on probation can benefit from intervention (Kelley, 1996). However, mandatory involvement requirements are not likely to be successful if students make incorrect attributions about their academic problem (Kelley, 1996). For example, is it appropriate to refer someone for study strategies when he/she is blaming the institution for his/her academic standing? While it can be argued that a student will benefit if required to attend a program, it can also be argued that forced participation in a program could lead to harmful and unintended consequences.

A second criticism of many intervention programs is that they lack theoretical frameworks to facilitate the understanding of students' needs after being placed on academic probation (Coleman & Freedman, 1996). Tinto (1993) noted that assessment is a common component of programs designed to work with students in academic difficulty. However, for a majority of academic probation programs, the assessment process involves helping a student identify the cause of poor academic performance (e.g., lack of study skills, time management), which is oftentimes readily apparent (Archer, 1991). Less attention has been given to identifying less obvious and perhaps more salient factors that contribute to a student's subsequent academic progress when placed on probation.

One construct that may shed some light on understanding what may account for academic progress after being placed on probation is a student's level of readiness to change. Readiness to change can be defined as an individual's motivation to resolve a problem that confronts him or her. Readiness to change seems to be an important factor in determining how likely it is that an individual will be successful in any attempt to

change. A review of the college student literature revealed only one study that examined readiness to change among students on academic probation. Most studies have focused on program models and academic outcomes (e.g., increase in GPA), while less attention has been given to understanding the process of change.

Some have noted that students on academic probation make different attributions when placed on academic probation that are likely to influence the way they think, feel, and respond to the problem (Kelley, 1996). If this is the case, students on academic probation may differ to the degree in which they perceive the problem and are prepared to take steps to resolve their academic difficulty. Some students may not be willing to confront the challenges that result from being placed on academic probation. As a result, students' readiness to change their academic standing could likely influence the outcome of any intervention effort.

### Research Framework

There is a large body of research in the addictions and health psychology literature that suggests that individuals change their behavior in stages (Prochaska & DiClemente, 1982, 1984; Prochaska, DiClemente, & Norcross, 1992; Prochaska & Norcross, 1999). The Transtheoretical Model (TTM) provides a three-dimensional view of the change process that considers processes of change, levels of change, and stages of change. One dimension of the TTM, Stage of Change (SOC), posits that there are distinct stages in the change process that reveal an individual's perceptions, motivation, and commitment to change (Prochaska & DiClemente, 1982, 1984). This dissertation focuses on the SOC dimension of the TTM.

The five stages of change are: Precontemplation, Contemplation, Preparation, Action, and Maintenance. Each stage represents a developmental progression through a set of beliefs, attitudes, intentions, and behaviors related to an individual's status in the cycle of change (Prochaska et al., 1992). A brief description of each stage and an example specific to undergraduate students on academic probation is provided.

### *Precontemplation*

Individuals at this stage have no intention of changing their behavior in the near future. This stage is characterized by a lack of awareness of the problem. A student in this stage may attribute poor academic performance to external factors such as a "tough professor." A student may state that he/she would like to resolve his/her academic difficulty, but may be unable to see the role he/she plays in his/her academic problems.

### *Contemplation*

Individuals at this stage are aware that a problem exists and have given serious consideration to making changes; however, they have made no personal commitment to begin the change process. A student in this stage may acknowledge poor academic performance, have ideas about ways to resolve the academic difficulty, but lack the commitment to follow through. For example, a student that states, "I recognize I am doing poorly academically and need a physics tutor; however, I am not sure when I can get by the academic center," is in the Contemplation stage.

### *Preparation*

This stage combines an individual's intention to change and his/her successive steps toward behaviors that will help resolve the problem. However, the individual may not have reached the level of effectively resolving the problem. For example, a student

that has obtained a brochure from the academic assistance center and reports that he/she will make an appointment to see a tutor in the next few weeks is in the Preparation stage.

#### *Action*

An individual taking steps to change his/her thoughts, behaviors, and the environmental factors that contribute to a problem is in the Action stage. Modifications to thoughts and behaviors in an effort to change the identified problem are characteristic of the Action stage. A student in this stage is likely to report that he/she understands the seriousness of academic probation, and is taking steps to address the problem area (e.g., tutoring and personal counseling). In short, a student feels as though he/she is actually “working at it.”

#### *Maintenance Stage*

An individual that works to avoid re-experiencing a problem can be thought of as being in the Maintenance stage. A student in this stage may report being involved in ongoing study groups, developing mentoring relationships with professors, and continuing to engage in behaviors that helped him/her previously resolve academic difficulties. At some level, the student may be motivated by concerns about being placed on academic probation in the future.

Though initially developed to understand the change process among individuals coping with nicotine addiction, the TTM may hold promise for understanding whether students initially present at different stages of change when attempting to overcome academic probation. Understanding a student’s starting point in the change process may improve the probability for successful outcomes. More specifically, if students on academic probation initially present at different stages in the change process, this should



be an important consideration in the development of interventions for this student group. There is some evidence to suggest that tailoring interventions to an individual's stage of change leads to better outcomes among individuals attempting to change addictive behaviors (Prochaska et al., 1992). A similar pattern may exist for students on academic probation.

The stages of change were originally conceptualized as categories, and a categorical measure was developed to determine an individual's stage in the change process. This measure was used to classify an individual as being exclusively in the Precontemplation, Contemplation, Action, or Maintenance stage based on responses to a series of questions. Later work by McConaughy, Prochaska, and Velicer (1983) and McConaughy, DiClemente, Prochaska, and Velicer (1989) led to the development of the *Stages of Change Questionnaire* (SCQ). The SCQ is an empirically-supported measure that quantifies an individual's stage of change by yielding a profile derived from four subscale scores (Precontemplation, Contemplation, Action, Maintenance).

The 32-item SCQ profile allows for conceptualizing the stages of change along a continuum rather than as discrete categories. In this way, the measure has the added benefit of potentially identifying transition points between the stages of change. The SCQ profile scores may help determine whether students on academic probation initially present at different stages in the change process. Past research (e.g., DiClemente & Hughes, 1990) has shown that SCQ profile scores can be used to identify cluster groups that can be compared on relevant dependent variables.

### Purpose of the Current Study

The purpose of this study was to test the use of the SOC paradigm with students on academic probation. A more specific goal of this study was to determine whether the SCQ (McConaughy et al., 1983, 1989) could help identify distinct groups of students on academic probation in terms of their stage of change. Finally, an additional goal was to determine the degree to which a student's stage of change influences academic performance.

The justification for this investigation was threefold. First, most of the research with students on academic probation has focused on contributory factors and programs that impact academic outcomes. Less attention has been given in the literature to understanding the process of change for students on academic probation. Second, programs lack theoretically-based assessment for students on academic probation, and they focus on outcomes versus process. Given this situation, assessment of a student's readiness to change his/her academic standing seems warranted. Third, there is a theoretically- and empirically-supported model for understanding an individual's readiness to change in the addictions and health psychology literature that may have some utility for students on academic probation. Investigating the utility of the SOC paradigm with students on academic probation seems justified.

Counseling psychologists by virtue of their training and skills have the expertise to contribute to the knowledge base about students on academic probation, and the ability to help develop interventions for this group of students. Counseling psychologists can contribute to this important area of research by exploring the applicability of current

psychological theories and models for helping students on academic probation. This study represents such an attempt.

### Research Questions and Hypotheses

The research questions and hypotheses for the current study are as follows:

#### *Research Question 1*

Is there a relationship among each of the SCQ subscale scores and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status?

*Null Hypothesis 1.* There will be no statistically significant relationship among the SCQ Precontemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Null Hypothesis 2.* There will be no statistically significant relationship among the SCQ Contemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Null Hypothesis 3.* There will be no statistically significant relationship among the SCQ Action subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Null Hypothesis 4.* There will be no statistically significant relationship among the SCQ Maintenance subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Research Question 2*

Can SCQ profile scores (where the profile score is a composite of the four subscale scores) be used to classify participants into statistically-derived cluster groups?

*Null Hypothesis 1.* There will be no statistically-based cluster groups that emerge from the SCQ profile scores.

*Null Hypothesis 2.* There will be no statistically significant differences in SCQ profile scores among the cluster groups that emerge from the data.

*Research Question 3*

Are there differences among stages of change cluster groups on indicators of academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) while statistically controlling for gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation?

*Null Hypothesis 1.* There will be no statistically significant differences between stages of change cluster groups on indicators of academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) while statistically controlling for gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation.

*Research Question 4*

Can stages of change cluster groups account for a significant amount of variance in academic progress (as defined by semester GPA residual gain score, cumulative GPA

residual gain score, and end of semester probation status) over the course of one semester?

*Null Hypothesis 1.* Stages of change cluster group will not account for a significant amount of variance in academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) over the course of one semester.

### Definition of Terms

#### *Academic Probation*

Academic probation has been defined in this study as “students who are placed on academic probation at the end of any term in which their UGA cumulative average is below 2.00” (The University of Georgia Undergraduate Bulletin, Fall 2001, p. 47).

#### *Residual Gain Scores*

“Scores calculated by predicting the posttest scores from the pretest scores on the basis of the correlation between pretest and posttest, and then subtracting these predicted scores from the posttest to obtain the residual gain scores” (Kerlinger, 1973, p. 337). The benefit of this procedure is that the influence of pretest scores is removed from posttest scores.

#### *Stages of Change*

“Stages of change represent specific constellations of attitudes, intentions, and behaviors related to an individual’s status in the cycle of change (Prochaska & Norcross, 1999, p. 495).

### Limitations

1. A correlational research design was employed in this study; thus, causation cannot be inferred.
2. The racial composition of the sample was limited due to the minimal number of participants from minority groups.
3. Non-random sampling procedures may have limited the generalizability of this study.
4. Generalizability may be limited since this study only examined students in the College of Agricultural and Environmental Sciences and the College of Education at a Research I institution in the southeastern United States.

### Assumptions

There were several basic assumptions that guided the conceptualization, development, and implementation of this study.

1. The TTM SOC paradigm is a theoretically -and empirically-based framework that can be adapted for use with students on academic probation.
2. Slight modification to the wording of each *Stages of Change Questionnaire* (SCQ) item was necessary so that the scale would be relevant to students on academic probation. This modification procedure was not expected to change the psychometric properties of the scale.
3. Participants would provide honest answers on the self-report instruments and would not feel pressured to respond in a socially desirable manner based on their academic circumstances.

4. Students on academic probation from two colleges at the University of Georgia (i.e., College of Agricultural and Environmental Sciences and the College of Education) were recruited to participate in this study. It was assumed that these two groups of students would not significantly differ from each other.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE AND RESEARCH

The purpose of this chapter is to: (a) review the literature on undergraduate students on academic probation, (b) review the literature on the Transtheoretical Model (TTM) with an emphasis on the SOC dimension of the model, and (c) review the literature for application of the SOC dimension of the TTM to understanding undergraduate college students on academic probation.

#### Overview of the Academic Probation Literature

Much of what currently is found in the literature identifies the factors that contribute to a student being placed on academic probation. For example, Hart and Keller (1980) found that undergraduate students had a strong tendency to attribute poor academic performance to their own lack of motivation, initiative, or ability. Browne (1986-87) found that students cited personal factors (e.g., poor study habits, poorly defined goals, personal problems) as well as factors they attributed to the institution (e.g., dissatisfaction with instructors/faculty) as reasons for scholastic failure.

Ramirez and Evans (1988) found that students' reasons for academic failure can be categorized along two dimensions. The first category includes the interaction between student factors and institutional variables. Some examples of this category include inappropriate course selection, poor scheduling, lack of motivation, unclear or unrealistic goals, failure to adjust to increased expectations, lack of support services, and faculty members' lack of information on resources for students in academic difficulty. The



second category includes nonacademic factors in a student's life. Some examples of this category include financial concerns, family issues, employment, and health problems.

Another direction in the literature has been to collect demographic information on students who are on academic probation to determine risk factors. For example, Ramirez and Evans (1988) conducted an analysis of students on academic probation according to major, class standing, ethnic identification, and residence status. The authors found that students in highly technical majors, those in their freshman and junior year, minority students, and non-native students are overrepresented in the academic probation population.

Some researchers have focused their attention on identifying patterns of behavior among students on academic probation that lead to academic dismissal. For example, Russell (1981) noted that students on academic probation make a common set of errors (e.g., enroll in too many credit hours to make up GPA improvement in one semester) in their effort to resolve their academic problems. Based on these patterns, a list of recommendations and strategies has been offered to help students avoid an unfavorable academic fate.

Altmaier et al. (1983) surveyed students to determine the reasons for their academic probation, their effort to correct the problem, their awareness and use of resources on campus, and their demographic characteristics. An interesting finding in the Altmaier et al. study was that students engaged in changing their academic circumstances did not seek formal services (e.g., academic assistance). For example, some students relied on decreasing their number of enrolled hours, increasing study time, and decreasing number of commitments; while some students withdrew from the institution.

This finding suggests that students may engage in changing their academic circumstances without formal intervention.

Another direction in the literature has been to examine differences among students on academic probation. For example, Greer and his colleagues (1982) administered the *Mooney Problem Check List* (MPCL), a measure designed to assess functioning in 11 domains (e.g., Health and Physical Development, Adjustment to College Work) to freshmen, sophomores, juniors, and seniors on academic probation. The results of the Greer et al. study indicated that students on academic probation differed in terms of what factors were most salient based on their class standing. For example, even though adjustment to college work was ranked first for each of the four groups, the groups endorsed different areas of concern in this domain. Freshmen and sophomores endorsed items that addressed study skills deficits and time management issues, while juniors and seniors endorsed items that were related to the need for skills in relaxation and anxiety management.

Determining the factors that contribute to academic probation has informed most efforts to design effective intervention strategies. Many of the programs designed to intervene with students on academic probation have utilized a skill-deficit paradigm and/or a risk-factor paradigm. An example of the former would be to provide time management training for a student who indicated poor time management behaviors. An example of the latter paradigm would involve providing career counseling sessions for a student that indicated unclear career goals as a reason for poor academic performance.

## Academic Probation Programs

A variety of programs for students on academic probation have been implemented in higher education institutions. What follows is a review of these programs. This section will conclude with a list of general impressions of the current literature on students on academic probation.

### *Mandatory Intervention Programs*

Mandatory intervention programs for students on academic probation have been supported on the assumption that requiring the program for all students provides remediation and prevention of future problems (Petrie & Helmcamp, 1998). There is some support in the literature for responding to students in this manner. Cuvo, Freeman, Canavin, and Bryson (1986) found that appointment compliance significantly increased when appointments were made for students on academic probation rather than having the student schedule an appointment voluntarily. The Cuvo et al. finding is consistent with other findings that indicate many students in academic difficulty may not voluntarily seek assistance (Himmelstein, 1992).

Hudesman et al. (1983) examined the effectiveness of using required academic contracting and semi-structured counseling sessions for students on academic probation. Programmatic components consisted of assessment of academic weaknesses, referral for tutoring, learning centers, workshops, and study skills. Students on academic probation receiving the intervention had higher GPA scores than academic probation students who did not receive the intervention. A methodological limitation of the Hudesman et al. study was the use of a t-test procedure on pre-semester GPAs to conclude that the intervention and control groups were academically equivalent.

Austin et al. (1997) described an intrusive group-advising program for students on academic probation. Assessment of students in the program focused on factors that led to probation. The authors used change in GPA and retention rates to support the effectiveness of the intervention. The students that participated in the groups had higher GPA scores and higher retention rates than their noncompliant counterparts. This program focused on factors that led to academic probation as an assessment focus. The Austin et al. article is typical of the literature on students on academic probation in that most of what is written describes an intervention program and provides descriptive statistics to support program effectiveness.

Johnson (1986) described an intrusive advising program designed to assist freshman students on academic probation at a historically Black, land-grant university. Similar to other programs, assessment consisted of obtaining information about the factors that contributed to being on probation. A strength of this program is that an attempt was made to assess the extent to which students expressed an interest in participating in the course. The results of the intervention indicated that all program participants achieved satisfactory academic standing at the end of the semester, compared to 40% of nonparticipating counterparts. While the author alludes to the importance of evaluating the extent to which a prospective participant was interested in the program, the author does not explain how this criterion was assessed.

Foreman et al. (1990) developed a mandatory comprehensive group intervention that incorporated study halls, optional tutoring, biweekly appointments to discuss academic standing, and academic seminars. Consistent with other studies, the dependent variables were GPA and probation status. The authors also used the *Survey of Study*

*Habits and Attitudes* along with written evaluations to gauge perceptions of program effectiveness. Participants in the program demonstrated increased GPA scores, had higher rates of clearing probation, showed more gains on the *Survey of Study Habits and Attitudes*, and rated the program positively. This study is one of a few studies that incorporated an instrument to evaluate pre-and post-semester changes.

Ramirez and Evans (1988) examined the effect of a mandatory, long-term, and comprehensive program for minority students on academic probation. Programmatic components included an orientation to university policies and procedures for probation; assessment of the student's strengths and weaknesses, career goals, and personal and professional objectives; and evaluating past difficulties and addressing the causes. Participants made more progress (defined as good academic standing and increased GPA) when compared to control groups that did not receive services or received limited services from other programs.

Garnett (1990) described an intrusive intervention strategy for students on academic probation. Programmatic components consisted of two visits to a counseling center, a conference with each instructor at the beginning of the semester, three visits with the academic advisor, supervised study times, and a weekly activity log. Improvement in retention rates, a decrease in dismissal rates, and an increase in the number of students that cleared probation provided some support for program success.

Davis and Ballard (1985) examined the effectiveness of using peer advisors to work with undergraduate students that received a semester average below 2.0 in a given semester. Participants were randomly assigned to an intervention or control group. Peer advising consisted of weekly meetings addressing major concerns of the student, making

recommendations, examining areas to be explored in the future, and developing an action plan. Participants in the peer advisor program had significantly higher GPAs at the end of the semester and showed a reduced likelihood of withdrawing from the university.

An interesting finding in the Davis and Ballard study was that 30% of the students on academic probation noted lack of motivation as the reason for poor academic performance. This finding seems to support a need to determine the extent to which a student that is placed on probation is motivated to resolve his/her academic circumstances. Since almost a third of the students cited lack of motivation as a factor leading to probation, it seems plausible that a lack of motivation may prevent a student from corraling his/her resources to regain satisfactory academic standing.

While mandatory and intrusive programs seem to boast higher success rates, some studies have found that intrusive methods are not empirically supported (e.g., Letchworth & Bleidt, 1983). A common assumption is that intrusive methods are warranted among students on academic probation because they underutilize campus resources. While a number of students may engage in change without formal assistance, there are a number of mandatory programs that operate under the assumption that self-guided change may not be sufficient for subsequent academic success. However, students on academic probation may respond differently to intrusive methods. For example, Kelley (1996) argues that intrusive methods may be counterproductive if students attribute their poor academic performance to external factors rather than internal factors.

#### *Voluntary Intervention Programs*

Voluntary programs have also been developed for students on academic probation. Tricomi, Donaruma, Dugan, and Cuevas (1982) developed a voluntary one-

credit course to provide skill development in note taking, study strategies, test preparation, and writing research papers. A second component included counseling sessions designed to help students accept responsibility for their academic probation status. Students who participated in the program achieved higher end-of-semester GPAs than matched students unable to participate and placed on a waiting list.

Coleman and Freedman (1996) examined the effects of a voluntary structured group format using three theoretical constructs related to student success outcomes. The 10 session groups focused on goal directedness, interpersonal problem solving, and social competence. The dependent variables were GPA, credit completion ratios (CCR), and probation status. Participants cleared probation at higher rates, had significantly higher GPAs, and earned higher CCRs than the wait-list control condition (i.e., students who expressed an interest but were not able to attend due to schedule conflicts).

A limitation of the Coleman and Freedman study was that the unique contribution of each of the constructs (goal attainment, interpersonal problem solving, social competence) could not be determined nor was there an attempt to assess students' progress in each of the domains that the program addressed. The ability to assess each of the constructs pre-and post-intervention would have improved the design of the study.

Halstead (1998) examined the effectiveness of a theoretically-based academic support group for students on academic probation. Participants volunteered for a five-week program that included four phases. The phases coincided with the developmental nature of groups and allowed for bonding, confrontation, working together, and consolidation of learning. Although limited numbers participated in the program, initial

results suggest that fully compliant participants were able to achieve a higher level of academic performance than their less compliant counterparts.

### *Programs for Students Returning from Academic Dismissal*

In addition to examining the factors that lead to probation and examining the effectiveness of mandatory and voluntary programs, another direction in the literature has been the examination of factors that contribute to success for students on academic probation who are dismissed and seek readmission. One study found no relationship between the length of the dismissal period and academic performance upon readmission (Meadows & Tharp, 1996). This finding challenges the assumption that for some students a lengthier period of dismissal may help them get a better perspective on their academic circumstance which may then lead to improved academic performance upon readmission. There is some support for using a student's GPA at dismissal and a student's GPA while attending a different institution during the dismissal period as a significant predictor of success upon readmission (Hall & Gahn, 1994).

Schultz, Dickman, Campbell, and Snow (1992) examined the effectiveness of a mandatory academic skills course for students who were academically dismissed and were seeking readmission. The program components consisted of time management, writing skills, study skills, career decision-making, academic planning, communication skills, use of campus resources, racism, sexual attitudes, and social responsibility. Schultz et al. found that participation in the course did not result in improved academic performance (defined as increased GPA). However, Munsell and Cornwell (1994) demonstrated that a structured intervention program for reinstated students could be of



benefit if the program directly targets those factors that led to poor academic performance.

Taylor, Powers, Lindstrom, and Gibson (1987) implemented a program to screen students who were academically dismissed and requesting readmission. The authors focused on changes in maturity and general attitude toward returning to school. A review of previous records, SAT scores, and personal history information was also conducted. The findings suggested that a review of past performance and future goals was a useful way to select students who had a greater likelihood for success. One limitation of the program described by the authors is that the screening process was largely subjective; incorporating objective measures into the program could further guide the decision-making process.

#### *Summary of the Academic Probation Literature*

A number of intervention programs view students on academic probation as a homogenous group. The Greer et al. (1982) study lends some support for the notion of examining individual differences among students on academic probation. Kelley (1996) explored how cognitive, affective, and behavioral reactions to being placed on probation can have implications for a student's motivation to change. Depending on the attributions being made for the academic failure, a student may not be aware of his/her need for change. Therefore, a construct that seems related to a student's subsequent academic performance when placed on probation is his/her level of readiness for change. A model for conceptualizing and measuring an individual's readiness for change exists in the psychology literature and will be introduced in the following section of this chapter.

Based on a review of the literature for students on academic probation, the following conclusions can be drawn:

1. Most of what is written about students on academic probation has focused on factors that contribute to being placed on probation.
2. Minimal attention has been given to factors that account for academic success subsequent to being placed on academic probation.
3. Programs for students on academic probation are typically highlighted in the best practices sections of journals, and descriptive statistics are used to provide support for program effectiveness.
4. The practice of using GPA and probation status as dependent variables in assessing student progress is supported in the literature.
5. A limitation of most studies is the practice of using t-test procedures on pre-semester GPA scores to indicate that experimental and control groups were academically equivalent prior to the intervention. None of the studies attempted to statistically control for other variables that may influence outcome.
6. Minimal attention has been given to intrapsychic variables such as motivation, self-efficacy, attributions, and readiness to change and how these constructs may influence subsequent academic performance for students placed on probation.

The need for assessment of intrapsychic variables prior to intervention and the need to identify how these factors may contribute to change in students on academic probation warrant further study. The current investigation was an attempt to explore the

utility of a theoretically -and empirically-supported framework for understanding the extent to which a student's level of readiness for change accounts for academic performance after he/she is placed on probation. A benefit of examining readiness for change is to determine whether interventions may need to be individually tailored in order to be maximally effective. For example, a student that is highly motivated to change may not require a mandatory intervention program. This student is likely to seek out resources on campus and make appropriate changes. However, other students that place blame for their academic standing on others (e.g., professors) are less likely to seek help, and these students may warrant more intrusive methods.

#### Overview of the Transtheoretical Model (TTM)

As previously stated, a model for conceptualizing and measuring readiness for change exists in the psychology literature. The TTM has received considerable attention in the addictions and health psychology literature during the past two decades. What follows is an overview of the model with an emphasis on the stages of change dimension that is most relevant to this study.

A number of theoretical models or systems of psychotherapy seem to focus on personality development, maladjustment, and the therapeutic factors that lead to change while less attention is given to how people change (Prochaska & DiClemente, 1984). In their work with smokers attempting to quit without formal assistance, Prochaska and DiClemente (1982) noted that participants used different processes of change at different times during their efforts to quit smoking. This observation led the researchers to wonder whether there were stages in the change process. Subsequent research has confirmed that

there are distinct stages in the change process and that movement through the stages seems to be dependent upon one's level of readiness for change.

One's level of readiness for change has been both theoretically and empirically supported as a key dimension of the TTM (Prochaska & Norcross, 1999). Prochaska and Norcross (1999) have concluded that "The Transtheoretical Model holds considerable promise for describing, predicting, and explaining changes in a broad range of disorders" (p. 512). The most impressive aspect of the model is the ability to validate the constructs (i.e., stages of change) through empirical means. Since the focus of this dissertation is on examining the utility of the stages of change construct, the reader is referred to other sources for a more detailed explanation of other dimensions of the TTM (Prochaska & DiClemente, 1982, 1984).

#### Stages of Change Dimension of the TTM

Prochaska and DiClemente (1984) noted that each stage of change is characterized by a set of attitudes, beliefs, intentions, and levels of motivation to engage the change process. Also, "Stages of change reflect the temporal and motivational aspects of change. Intentional change is not an all-or-none phenomenon, but a gradual movement through specific stages" (p. 303).

The readiness to change construct has been examined extensively in the psychological literature and hypothesized to be one reason that clients terminate treatment prematurely. For example, a client who presents for therapy under pressure may not be at the same level of readiness for change as the person who presents voluntarily for therapy. Prochaska et al. (1992) noted that tailoring interventions to stage of change can improve treatment outcomes. This view was further supported by

Willoughby and Edens (1996) who concluded “Accurately assessing motivation or commitment to change seems to be a crucial step in matching patients to appropriate interventions” (p. 275). According to Prochaska and Norcross (1999), an additional benefit of assessing readiness to change is that “A client’s pretreatment stage of change is an important determinant of prognosis” (p. 499). The stages of change identified by Prochaska and DiClemente (1982, 1984) are as follows:

#### *Precontemplation Stage*

Individuals at this stage have no intention of changing their behavior in the near future. They demonstrate a lack of awareness of the problem and can also exhibit resistance to change.

#### *Contemplation Stage*

Individuals at this stage are aware that a problem exists and have given serious consideration to making changes; however, they have made no personal commitment to begin the change process.

#### *Preparation Stage*

This stage combines an individual’s intention to make changes with successive steps toward behaviors that will help resolve the problem. However, the individual has not reached the level of effectively resolving the problem.

#### *Action Stage*

This stage is characterized by making changes in one’s thinking, behavior, and environmental cues that contribute to the problem. At the stage, an individual and others are aware of some progress that is taking place.

### *Maintenance Stage*

This stage is characterized by ongoing efforts to engage in the thinking and behavior that lead to successful resolution of the problem behavior. At some level, an individual may be motivated to continue the new behaviors out of concern about re-experiencing a problem.

The TTM was originally conceptualized as a linear model whereby an individual moves through the five stages. Later work seems to support the idea that the stages of change can be viewed as an ascending spiral. This new conceptualization is more consistent with familiar patterns of change where a person that is actively changing a behavior at one point can regress to a point where no overt effort to change seems apparent (Prochaska et al., 1992).

A number of studies have employed the stages of change dimension of the TTM to identify differences in readiness to change among smokers (DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, & Rossi, 1991); outpatient psychotherapy clients (McConaughy et al., 1983, 1989); outpatient clients with alcoholism (DiClemente & Hughes, 1990); undergraduate college students (Thombs & Briddick, 2000); and court-ordered outpatient mental health clients (O'Hare, 1996a). These studies have provided overwhelming support for the stages of change. Typically, stage of change is used to identify cluster groups that serve as the independent variable when examining an outcome variable (e.g., therapy outcome). Other studies have used the stages of change framework to assess movement through the stages during a period of intervention (Prochaska, Norcross, Fowler, Follick, & Abrams, 1992).

The stages of change model can be quantified through two methods of measurement. Some studies have used a categorical system originally proposed by Prochaska and DiClemente (1983). Through a series of questions or an interview process, an individual can be categorized as being exclusively in one stage or another. Later work by McConnaughy et al. (1983, 1989) provided empirical support for conceptualizing the stages on a continuum. Using the *Stages of Change Questionnaire* (SCQ), later named the *University of Rhode Island Change Assessment Scale* (URICA), scores can be obtained for the subscales, which provide a profile of change (McConnaughy et al., 1983). Only four subscales (i.e., Precontemplation, Contemplation, Action, Maintenance) were empirically supported in the McConnaughy studies.

Since the McConnaughy et al. (1983, 1989) studies, several researchers have used the SCQ with individuals presenting for treatment with a variety of issues. For example, DiClemente and Hughes (1990) utilized SCQ profiles as part of their research with individuals presenting for outpatient alcoholism treatment. Koraleski and Larson (1997) utilized the SCQ in their work with adult survivors of sexual abuse. O'Hare (1996b) employed the measure in a study with court-ordered populations. Lastly, Thombs and Briddick (2000) used the SCQ to examine the drinking patterns of undergraduate college students. These studies continue to support earlier findings that distinct profiles of readiness to change emerge when SCQ scores are examined.

Velicer, Hughes, Fava, Prochaska, and DiClemente (1995) conducted a series of cluster analytic studies for four stages of change to determine to what extent groups in one stage differed. They found that each stage was comprised of distinct cluster groups in relation to readiness to change. For example, within the Contemplation stage there was a

cluster group that represented true contemplators, a cluster group that resembled some combination of contemplation and action, as well as a cluster group that resembled a combination of contemplation and precontemplation. This study underscores the need to think about stages of change along a continuum.

Prochaska, Velicer, Guadagnoli, Rossi, and DiClemente (1991) conducted a longitudinal analysis of self-changers attempting to quit smoking. The authors found that cluster groups among the stages of change can be classified into three distinct profiles. One profile is described as flat with no change or movement through the stages throughout the period of intervention. For example, some participants remained at the Precontemplation stage throughout the study. Another profile is described as unstable, indicating movement from one stage to the next; however, returning to a previous stage. For example, moving from contemplation to action and returning to contemplation would be considered an unstable profile. The last profile was described as a linear profile in which participants moved in a progressive or regressive direction without returning to a previous stage. For example, some participants in the study moved from precontemplation to contemplation, while others moved from action to precontemplation.

Koraleski and Larson (1997) attempted a test of the TTM with adult survivors of sexual abuse. They were interested in assessing both the stages of change and processes of change. The researchers found that on the basis of SCQ scores, three distinct stage groups emerged from the data (Contemplation, Preparation, Action).

O'Hare (1996b) used the SCQ to investigate whether outpatient mental health clients that were court-ordered for treatment would present with less of a readiness to change than their voluntary client counterparts. He found court-ordered clients had



significantly higher ratings on the Precontemplation subscale score, while voluntary clients had scores spread along Contemplation, Action, and Maintenance subscales.

Satterfield, Buelow, Lyddon, and Johnson (1995) found a relationship between a client's stage of change and expectations about counseling among clients seeking services at a university-based outpatient clinic. Specifically, these researchers found that clients in the Precontemplation stage had significantly lower expectations for their own commitment to therapy and lower expectations for acceptance, genuineness, trustworthiness, and confrontation from the therapist. They also noted that assessing and monitoring a client's stage of change could help practitioners meet clients at their level of readiness to change and help determine how best to facilitate movement through the change process.

Willoughby and Edens (1996) administered the URICA (previously SCQ) to individuals with alcoholism in a residential treatment program to determine whether stages of change cluster groups could be identified. Two cluster groups emerged from the data. One group was considered in the Precontemplation stage and the other group was considered to be between the Contemplation and Action stages. The groups were compared on a number of variables, and the results suggest that the Precontemplation group felt less worried about their drinking, seemed less receptive to intervention, and were less likely to have sought help in the past. The Contemplation and Action group reported greater levels of depression and anxiety.

More recently, Thombs and Briddick (2000) employed a modified version of the URICA (previously SCQ) and found that cluster groups existed among college students' readiness to change drinking habits. They noted that readiness to change has been ignored

by individuals that design alcohol education and intervention programs and operate under the assumption that clients should be highly motivated to change.

Readiness to change has been largely ignored in academic probation programs. Most of the programs developed for students in academic difficulty are action based with little attention given to factors that may account for a student's readiness to engage in an intervention. Many programs may erroneously assume that academic probation is a crisis that a student is or should be motivated to resolve. It may be useful to consider whether the stages of change model and the SCQ could be used with students on academic probation.

#### Academic Probation and Stages of Change

A review of the literature for studies that attempted to examine the utility of the TTM with students on academic probation yielded one dissertation study. Topitzhofer (1995) examined two dimensions of the TTM in her study on undergraduate students on academic probation. First, she investigated the relationship between the processes of change and stages of change. Her first research question examined the relationship between the behaviors (processes) individuals engage in as they move through the stages of change. Her second research question examined the extent to which stages of change contributed to academic performance while statistically controlling for academic ability, using a formula derived from high school percentile rank and available college entrance scores.

Topitzhofer found significant differences in the processes of change used by students on academic probation at different stages of change. For example, students in the Action stage of change used particular processes of change significantly more than

students in other stages. Another finding was that stage of change accounted for a significant amount of variance in academic performance, defined as fall semester GPA and coefficient of completion ratio, while statistically controlling for academic ability. Additionally, students showed significant improvement in both indicators of academic performance with movement from contemplation to action to maintenance. The semester GPA scores for the three groups identified in her study were 1.41, 2.21, and 2.70, respectively. Both research questions investigated in this study seem to support the stages of change dimension of the TTM with students on academic probation.

Topitzhofer's research design had a number of limitations that warrant attention in future attempts to extend the TTM to students on academic probation. First, most of the participants were beginning their sophomore year and were on the first semester of probation. The researcher limited her participants to control for class standing and semesters on probation. However, allowing for a more diverse group of students (e.g., freshman, sophomores, juniors, and seniors) at different levels of probation would allow for a better test of the stages of change dimension of the TTM.

A second limitation of Topitzhofer's study was the use of a discrete categorical measure to classify students as being exclusively in one stage of change. Topitzhofer used a four-item measure that included one statement designed to tap each of the stages (Precontemplation, Contemplation, Action, Maintenance). Although the use of this categorical system is supported in the literature (Prochaska & DiClemente, 1983), the stages of change are best conceptualized as occurring along a continuum. More recent work has supported the use of a 32-item measure that assesses the stages on a continuum (McConnaughy et al., 1983, 1989). The benefit of a continuous measure is the ability to

identify individuals both within a particular stage and between stages in the change process. The use of a continuous stage of change measure has consistently produced distinct profiles among individuals presenting for treatment that could not be tapped by a discrete categorical procedure used in the Topitzhofer study (e.g., DiClemente & Hughes, 1990). For example, Topitzhofer identified three groups using the discrete measure: contemplation ( $n = 14$ ), action ( $n = 62$ ), maintenance ( $n = 14$ ). The majority of the participants (72%) endorsed the Action stage resulting in small cell size for the remaining stages. The difference in cell sizes was significant; and comparisons between the identified groups should be interpreted with caution.

A third limitation of the study was that a control variable in the study, academic ability score (derived from standardized test scores and high school GPA), was not correlated with the fall semester GPA or the coefficient of completion. The lack of a correlation between the two dependent variables (fall semester GPA and coefficient of completion) and the control variable (academic ability score) violates the assumption that a variable used to control for another outcome variable must be correlated to control for variance (Huck & Cormier, 1996). The design could have been improved by using students' pre-semester GPA to control for differences in subsequent academic performance.

There were no statistical controls for variables that could possibly influence subsequent academic performance (e.g., gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation). Each of these variables can contribute to subsequent academic performance. For example, it can be argued that a student who took six semester hours could fare better at

the end of a semester than a student who took 15 hours. Also, it could be argued that a student with fewer hours earned may have a less difficult time increasing his/her GPA than a student with an abundance of cumulative hours. Controlling for these variables is important in attempting to isolate unique contributing variance in academic performance.

### Summary

The TTM has been studied extensively for more than 20 years and has made a significant contribution to the addictions and health psychology literature. Topitzhofer's work is the first attempt to extend the TTM to understanding the change process among undergraduate students on academic probation. The TTM offers the possibility of guiding efforts to help students on academic probation by determining a student's starting point in the process of change when he/she is placed on probation. Future research studies should focus on examining whether the stages of change dimension of the TTM can provide an overall framework for understanding differences in level of readiness to change that may exist among students on academic probation.

## CHAPTER 3

### METHODOLOGY

The present investigation was an attempt to uncover the degree to which a student's level of readiness to change contributes to his/her academic progress after being placed on academic probation. This chapter provides information on sample size, description of the sample, instrumentation, research design, data collection procedures, and data analysis for this study.

#### Sample Size

To determine the number of participants needed to attain statistical significance using an ANCOVA, a power analysis was conducted based on the procedures described by Erdfelder, Faul, and Buchner (1996). In conducting an ANCOVA analysis, it is necessary to determine the levels of the independent variable (number of cluster groups), and the number of covariates. Using four levels of the independent variable (cluster groups), four covariates, power of .80, and an alpha of .05, 104 participants were needed to obtain a large effect ( $f = .40$ ; Cohen, 1969). A large effect size was selected since this is a new and emerging area of research. No studies to date have attempted to identify the variables that account for the variance in academic performance after a student is placed on probation.

#### Description of the Sample

Participants for this study were undergraduate students on scholastic and continued probation in the College of Agricultural and Environmental Sciences (CAES)

and the College of Education (COE) at the University of Georgia (UGA). Two levels of academic probation exist at UGA: scholastic probation and continued probation.

Scholastic probation is the first level of probation and denotes that a student's cumulative GPA has dropped below 2.00 at the end of a given semester. Continued probation denotes that a student has not achieved a 2.00 cumulative GPA at the end of his/her scholastic probationary term and remains on probation. Students who were on continued probation were included in this study because including students who have dealt with academic probation for varied periods of time would allow for a more robust test of the SOC.

Participation in this study was voluntary.

Data were obtained from 61 participants enrolled in undergraduate studies at UGA. Eleven participants were considered ineligible for the current study because they were returning from academic dismissal and were required to participate in biweekly academic counseling sessions as a condition of their readmission. One student withdrew during the semester that he participated in the study, thus his information was not included. Two participants were also removed from the study because they were not registered during the semester in which they completed the research packets. After removing the data for these 14 participants, data for 47 participants were included in the data analyses.

The final sample consisted of 47 undergraduate students. Eighty-seven percent ( $n = 41$ ) of the participants were undergraduate students in the CAES, while 13% percent ( $n = 6$ ) were undergraduate students in the COE. Males accounted for 62% ( $n = 29$ ), while females accounted for 38% ( $n = 18$ ) of the sample. With regard to racial/ethnic demographics, participants self-reported as follows: African American, 6% ( $n = 3$ );

Caucasian, 83% ( $n = 39$ ); Latino/Hispanic, 4% ( $n = 2$ ); Native American, 2% ( $n = 1$ ); and Other (Pacific Islander, Jamaican), 5% ( $n = 2$ ). The mean age for the sample was 21.28 years ( $SD = 2.73$ ) with a range of 18 to 31.

Seventy-two percent ( $n = 34$ ) of the participants were on scholastic probation, while 28% ( $n = 13$ ) were on continued probation. With regard to class standing, 21% ( $n = 10$ ) were freshmen; 28% ( $n = 13$ ) were sophomores; 34% ( $n = 16$ ) were juniors; and 17% ( $n = 8$ ) were seniors. Undergraduate students that participated in this study averaged 37.47 UGA overall hours earned ( $SD = 30.40$ ), were enrolled in an average of 10.91 ( $SD = 3.93$ ) credit hours per semester, and were on academic probation an average of 1.28 ( $SD = .45$ ) semesters. Participants were recruited for the study during Summer 2002, Fall 2002, and Spring 2003 semesters with 2, 22, and 23 participating in each semester, respectively. Every attempt was made to have students complete a research packet during the same period of time during the semester (i.e., before midterm exams).

### Instrumentation

#### *Stages of Change Questionnaire*

*The Stages of Change Questionnaire* (SCQ; McConnaughy et al., 1983) is a 32-item, self-report instrument designed to measure four theoretical stages of change (Precontemplation, Contemplation, Action, Maintenance) as described by Prochaska and DiClemente (1982). In the McConnaughy et al. study, the researchers developed 165 items that were categorized by trained raters based on the conceptual definitions of each stage. At the completion of this process, 145 items were categorized with 100% agreement. Of the items retained with complete agreement, 125 were used for the



principal component analysis procedure. After conducting this statistical method, 32 items were empirically supported and retained for the SCQ.

The SCQ allows an investigator to examine the stages of change on a continuous rather than categorical dimension. McConnaughy et al. (1983) argued that profiles obtained by looking at the stages on a continuum may yield more valuable information than categorical groupings. The rationale given by the authors is that there may be transition points between stages that may go undetected when using a categorical grouping procedure.

Four subscales (Precontemplation, Contemplation, Action, Maintenance), comprised of eight items each, measure the four stages. Each item is rated on a 5-point Likert-type scale (1 = *strong disagreement*, 5 = *strong agreement*). A higher subscale score indicates stronger endorsement for that particular stage of change. Scores for each subscale range from eight to 40. Raw subscale scores were converted to standardized T-scores with a mean of 50 and a standard deviation of 10.

Internal consistency reliability coefficients were calculated for the four subscales in the original study and in a follow-up study (McConnaughy et al., 1983, 1989). Cronbach's coefficient alphas for each of the subscales in the two studies are as follows: Precontemplation, .88, .79; Contemplation, .88, .84; Action, .89, .84; and Maintenance, .88, .82. These results were based on adult outpatient mental health clients.

Additional support for the developmental nature of the SOC is found in correlation coefficients that were calculated for the four subscales. These results suggest that adjacent scales are more highly correlated than distant scales. For example, the correlation between the Precontemplation and Maintenance subscale was .05, while the

correlation between the Action and Maintenance subscale was .48. The general patterns of Pearson Product-Moment correlations suggest that there is some overlap in the four stages; however, the stages are not redundant (McConaughy et al., 1989). Support for the predictive and external validity of the stages of change can be found in the DiClemente and Hughes study (1990), in which significant differences were found on an alcohol use inventory questionnaire and perceived self-efficacy to abstain from consuming alcohol based on participants' stage of change.

For the current investigation, the SCQ was modified to have additional relevance for students on academic probation. The general procedure for modifying the SCQ involved replacing the word "problem" in the original measure with the phrase "academic problem" or "academic probation." Some of the items required more modification in order to be relevant for students on academic probation. This was particularly true for the Maintenance stage items. Four examples of the original SCQ items and a modified version of each item are provided.

#### *Precontemplation Stage*

Original: "As far as I'm concerned, I don't have any problems that need changing."

Modified: "As far as I'm concerned, I don't have any academic problems that need changing."

#### *Contemplation Stage*

Original: "It might be worthwhile to work on my problem."

Modified: "It might be worthwhile to work on my academic problems."

*Action Stage*

Original: “At times my problem is difficult, but I’m working on it.”

Modified: “At times my academic problems are difficult, but I’m working on them.”

*Maintenance Stage*

Original: “I’m here to prevent myself from having a relapse of my problem.”

Modified: “I’m working to prevent myself from having ongoing academic problems.”

### Research Design

The present study primarily employed a cross-sectional correlational research design. A correlational design for this study was appropriate because none of the variables were manipulated, no intervention was administered to participants, and random assignment to groups did not take place. With the use of a correlational design, this study attempted to account for naturally occurring variance in academic performance among students on academic probation.

A major limitation of a correlational research design is that it does not address the issue of cause-and-effect (Huck & Cormier, 1996). Another limitation of correlational methods is that the relationship that may exist between two or more variables in a sample may not occur within the larger population (Mitchell & Jolley, 2001). As a research design, “The correlational method is less rigorous than the experimental approach because it exercises less control over the independent variables” (Isaac & Michael, 1995, p. 53). Despite these limitations, employing correlational methods was appropriate since

this investigation is exploratory in nature and seeks to extend a previously supported model of change to a new population.

#### Data Collection Procedures

Permission to conduct the study was obtained from the University of Georgia Institutional Research Board (IRB). Data were collected through the Academic Counseling Program in the CAES during Summer 2002, Fall 2002, and Spring 2003. Data were also collected through the College of Education (COE) Academic Affairs Office during Fall 2002 and Spring 2003. The author oriented the academic counselor in the CAES who collected the data for this study. Advisors in the COE were oriented to the study via written materials and were given the opportunity to ask questions if clarification was needed.

During scheduled sessions with students on academic probation, the advisor/academic counselor solicited their participation in the study by giving them a 3-5 minute oral presentation on the purpose of the study, instructions for the study, and their rights as participants (Appendix A). Also in the oral presentation, the advisor/academic counselor emphasized that participation was not required; as mentioned in the informed consent form (Appendix B). Participation in this study was voluntary. Students who agreed to participate were given a research packet that included two informed consent forms, a release of records for their transcript (Appendix C), a modified SCQ, and a demographic questionnaire (Appendix D). Completion of the research packet took 15 minutes. Participants were asked to provide their social security number so that transcripts could be obtained at the beginning and end of the semester they participated. The advisor/academic counselor answered any questions at the beginning of the

administration and then left the office. Participants completed the research packet in the advisor's/academic counselor's office. Upon completion of the research packet, participants returned it to the advisor/academic counselor in a sealed envelope.

Information on students' gender, age, race/ethnicity, classification, probation category, and major was obtained from the demographic questionnaire. Information on students' cumulative GPA, pre-semester and post-semester GPA, current semester hours enrolled, overall UGA hours completed, and number of semesters on academic probation was obtained from student transcripts.

### Data Analysis

The four research questions and null hypotheses outlined in Chapter 1 along with the statistical procedures employed for analyzing the data were as follows:

#### *Research Question 1*

Is there a relationship among each of the SCQ subscale scores and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status?

*Null Hypothesis 1.* There will be no statistically significant relationship among the SCQ Precontemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Null Hypothesis 2.* There will be no statistically significant relationship among the SCQ Contemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Null Hypothesis 3.* There will be no statistically significant relationship among the SCQ Action subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Null Hypothesis 4.* There will be no statistically significant relationship among the SCQ Maintenance subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

*Statistical analysis:* The Pearson Product-Moment correlation was used to examine whether there was a statistically significant relationship between each SCQ subscale score, semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status. Correlational procedures allow an investigator to: (a) examine whether there is a relationship between sets of scores, and (b) determine a numerical index (-1.00 - +1.00) for the strength of the relationship (Huck & Cormier, 1996).

Two dependent variables were computed using a residual gain score procedure. Semester GPA residual gain score and cumulative GPA residual gain score were computed using the method described by Kerlinger (1973). Residual gain scores... “are scores calculated by predicting the posttest scores from the pretest scores on the basis of the correlation between pretest and posttest, and then subtracting these predicted scores from the posttest to obtain the residual gain scores” (p. 337). Kerlinger noted that the benefit of this procedure is that the influence of pretest scores is removed from posttest scores.

Lastly, end of semester probation status was coded as a continuous variable from one to four (ranging from least to most desirable outcome). The coding for this variable was as follows: 1 = *withdrawal or academic dismissal*; 2 = *continued probation with no improvement*; 3 = *continued probation with improvement*; and 4 = *improved, cleared probation*.

### *Research Question 2*

Can SCQ profile scores (where the profile score is a composite of the four subscale scores) be used to classify participants into statistically-derived cluster groups?

*Null Hypothesis 1.* There will be no statistically-based cluster groups that emerge from the SCQ profile scores.

*Statistical analysis:* The SCQ subscale scores were used to determine whether students on academic probation could be categorized into distinct cluster groups based on their SOC profile. Cluster analytic methods described by Borgen and Barnett (1987) were used to investigate whether cluster groups exist in a sample of students on academic probation based on the SOC. Cluster analysis is recognized as an exploratory technique for identifying whether cluster groups exist within a larger group. When using this procedure, there is no prior knowledge or evidence that there are within-group clusters (Borgen & Barnett, 1987). Borgen and Barnett noted, “If the research area is relatively new, clustering may be a productive early step to identify and structure the subgroups that are of potential value in understanding the research problem” (p. 461). Ward’s (1963) cluster analysis method was used in this study to categorize

individuals into groups that have the smallest within-cluster group variance and largest between-cluster group differences (Borgen & Barnett, 1987).

*Null Hypothesis 2.* There will be no statistically significant differences in SCQ profile scores among the cluster groups that emerge from the data.

*Statistical analysis:* Once cluster groups were identified, it was important to determine whether the cluster groups differed on mean subscale scores (Precontemplation, Contemplation, Action, Maintenance). A one-way analysis of variance (ANOVA) was used to compare means on subscale scores of the cluster groups. The ANOVA is considered an appropriate method for evaluating differences among group means provided that the assumptions of independence, normal distribution, and homogeneity of variance are not violated (Huck & Cormier, 1996).

### *Research Question 3*

Are there differences among stages of change cluster groups on indicators of academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) while statistically controlling for gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation?

*Null Hypothesis 1.* There will be no statistically significant differences between stages of change cluster groups on indicators of academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) while statistically controlling for gender, number of overall



UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation.

*Statistical analysis:* Correlation coefficients were calculated to determine whether the covariates identified (gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation) were significantly correlated with the dependent variables. Covariates are only useful in the ANCOVA model if they are correlated with the dependent variable (Huck & Cormier, 1996).

A one-way analysis of covariance (ANCOVA) was used to examine the differences among cluster groups on the dependent variables (semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status). Use of an ANCOVA procedure has the added benefit of reducing the probability of a Type II error (Huck & Cormier, 1996). The ANCOVA method allowed for the inclusion of covariates that were used to statistically control for some of the variance in the outcome variables. It was important to statistically control for variables while attempting to account for the unique influence of stage of change. Another major benefit of using an ANCOVA was an increase in statistical power without a need to increase sample size (Huck & Cormier, 1996). It is important to note because the residual gain score procedure was used to compute the cumulative GPA residual gain score and the semester GPA residual gain score, it was not necessary to include the pre-semester GPA score as a covariate in the ANCOVA model. Four covariates were used in this ANCOVA procedure. Gender was used as a categorical variable and

coded as follows: 0 = *male*, 1 = *female*. The remaining covariates were quantitative (e.g., number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation) and were entered as numerical values.

#### *Research Question 4*

Can stages of change cluster groups account for a significant amount of variance in academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) over the course of one semester?

*Null Hypothesis 1.* Stages of change cluster group will not account for a significant amount of variance in academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) over the course of one semester.

*Statistical analysis:* The Eta squared statistic was used to determine the amount of variance for each dependent variable (semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) that can be accounted for by stages of change (Huck & Cormier, 1996).

## CHAPTER 4

### RESULTS

The purpose of this chapter is to present the results of the statistical analyses. The four research questions, corresponding null hypotheses, and related results are presented. The procedures for ensuring that the assumptions were met for each type of analyses are also presented. Tables and figures are provided throughout the chapter.

#### Preliminary Analyses

Data were obtained from 61 participants enrolled in undergraduate studies at UGA. Eleven participants were considered ineligible for the current study because they were returning from academic dismissal and were required to participate in biweekly academic counseling sessions as a condition of their readmission. One student withdrew during the semester that he participated in the study, thus his information was not included. Two participants were also removed from the study because they were not registered during the semester in which they completed the research packets. After removing the data for these 14 participants, data for 47 participants were included in the data analyses. All variables and SCQ subscale scores were entered into the Statistical Package for Social Sciences database (SPSS, 1997).

Cronbach's alpha coefficients were calculated for each subscale of the SCQ. The Cronbach's alpha coefficient was .80 for the Precontemplation subscale, .72 for the Contemplation subscale, .66 for the Action subscale, and .72 for the Maintenance subscale. Though the Cronbach's alpha values for the subscales were not as high as the

values obtained in the McConnaughey et al. studies (1983, 1989) (i.e., Precontemplation, .88, .79; Contemplation, .88, .84; Action, .89, .84; and Maintenance, .88, .82, respectively), these coefficients were deemed acceptable values.

### *Research Question 1*

Is there a relationship among each of the SCQ subscale scores and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status?

Pearson Product-Moment correlation coefficients were calculated between SCQ subscale scores and the dependent variables to test Null Hypotheses 1, 2, 3, and 4. The use of correlational procedures is based on the assumption of a linear relationship between the variables (Huck & Cormier, 1996). This assumption was met by examining scatter diagrams, and the data were examined for outliers (Huck & Cormier, 1996).

*Null Hypothesis 1.* There will be no statistically significant relationship among the SCQ Precontemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

Results of the analyses for Null Hypothesis 1 did not detect a significant relationship among the Precontemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status at the .05 level of significance. Based on the results of the statistical analyses, this investigator failed to reject Null Hypothesis 1.

*Null Hypothesis 2.* There will be no statistically significant relationship among the SCQ Contemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

Results of the analyses for Null Hypothesis 2 did not detect a significant relationship among the Contemplation subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status at the .05 level of significance. Based on the results of the statistical analyses, this investigator failed to reject Null Hypothesis 2.

*Null Hypothesis 3.* There will be no statistically significant relationship among the SCQ Action subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

Results of the analyses for Null Hypothesis 3 did not detect a significant relationship among the Action subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status at the .05 level of significance. Based on the results of the statistical analyses, this investigator failed to reject Null Hypothesis 3.

*Null Hypothesis 4.* There will be no statistically significant relationship among the SCQ Maintenance subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status.

Results of the analyses for Null Hypothesis 4 did not detect a significant relationship among the Maintenance subscale score and the dependent variables; semester GPA residual gain score, cumulative GPA residual gain score, and end of semester

probation status at the .05 level of significance. Based on the results of the statistical analyses, this investigator failed to reject Null Hypothesis 4.

Table 1 presents the correlation matrix for the Research Question 1 findings.

### *Research Question 2*

Can SCQ profile scores (where the profile score is a composite of the four subscale scores) be used to classify participants into statistically-derived cluster groups?

*Null Hypothesis 1.* There will be no statistically-based cluster groups that emerge from the SCQ profile scores.

Participants were clustered based on precontemplation, contemplation, and action standardized T-scores. Maintenance T-scores were not used for the purpose of clustering for two primary reasons: (a) It was determined that from a theoretical perspective, students placed on academic probation for their first or second semester were probably not at a point at which they were maintaining aspects of change; and (b) It was decided that from a statistical perspective removing one level of an independent grouping variable (Maintenance Stage) was necessary to have sufficient numbers to conduct the statistical analyses, since the number of participants ( $N = 47$ ) obtained for this study fell far short of the 104 necessary.

Cluster analytic methods were used to investigate whether students on academic probation could be categorized into distinct cluster groups based on their SCQ profile scores. Ward's (1963) cluster analysis hierarchical agglomerative method with squared Euclidean distance was used to classify participants. Ward's method provides an index of within-group error that can be used to determine the number of cluster groups in a given data set. Some authors have suggested that a steep incline in the within-group error index

Table 1

*Intercorrelations, Means, and Standard Deviations of all Independent and Dependent*

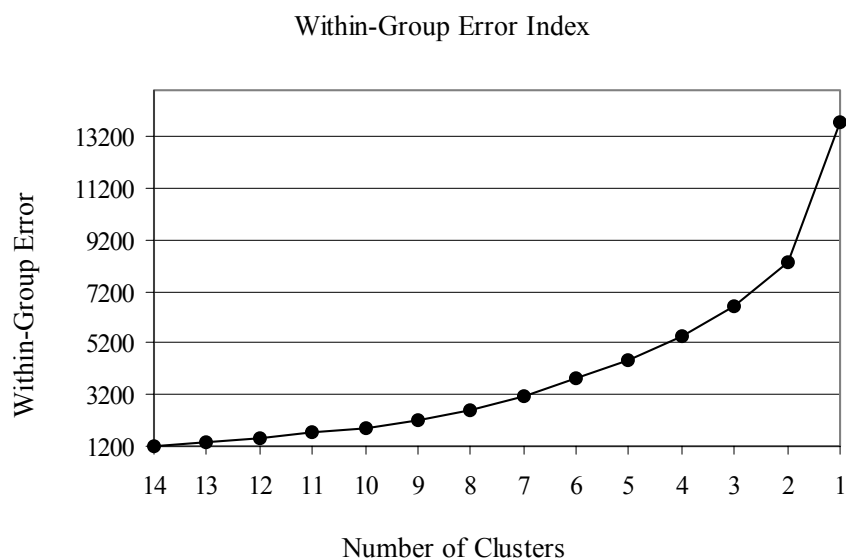
*Variables*

Variable	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
1. PRE	–							50.00	10.01
2. CON	-.40*	–						50.00	9.99
3. ACT	-.30*	.57*	–					49.99	10.00
4. MAIN	-.32*	.36*	.17	–				49.99	10.01
5. SGPAR	-.19	.07	.11	.06	–			.00	.82
6. CGPAR	-.22	.05	.12	.07	.86*	–		.00	.33
7. PROB	-.16	.23	.25	.02	.76*	.64*	–	3.09	.93

*Note.* *N* = 47. PRE = Precontemplation; CON = Contemplation; ACT = Action; MAIN = Maintenance; SGPAR = Semester GPA Residual Gain Score; CGPAR = Cumulative GPA Residual Gain Score; PROB = End of Semester Probation Status.

\**p* < .05.

indicates significant variation between cluster groups, while the within-group variance is minimized (Borgen & Barnett, 1987). An examination of the within-group error index for this sample of students suggests that a three-cluster solution seemed to adequately differentiate between groups (see Figure 1).



*Figure 1.* Within-Group Error Index

More specifically, the author examined Figure 1 and determined the initial point in which a significant increase in error variance occurred. This magnitude of difference was most significant between a three-cluster and two-cluster solution where the error variance was equal to 562. The results suggest that three SCQ profile scores can be used to classify participants into statistically-derived cluster groups. Based on these results, Null Hypothesis 1 for Research Question 2 was rejected.

*Null Hypothesis 2.* There will be no statistically significant differences in SCQ profile scores among the cluster groups that emerge from the data.

Once the three cluster groups were identified, cluster group subscale means were examined to determine whether significant differences existed between the cluster



groups. A one-way analysis of variance (ANOVA) was used to determine whether differences between the cluster group T-score means were statistically significant. One assumption for an ANOVA is that data distribution follows a normal curve. Data were examined graphically, and the assumption of normal distribution was met. Another assumption for an ANOVA involves homogeneity of variance (Huck & Cormier, 1996). Results of Levene's test for equality of variance indicate that the assumption of homogeneity was violated for Precontemplation T-scores,  $F(2, 44) = 3.36, p = .04$ ; was not violated for Contemplation T-scores,  $F(2, 44) = .84, p = .44$ ; not violated for Action T-scores,  $F(2, 44) = .04, p = .96$ ; and not violated for Maintenance T-scores,  $F(2, 44) = .59, p = .56$ . ANOVA results suggest that significant differences were found on mean subscale T-scores between the three cluster groups (see Table 2).

Results of cluster analysis classified the 47 participants into three distinct cluster groups having different patterns of SCQ profile scores. The five participants in Cluster 1 (Precontemplation) are characterized by high scores on precontemplation, and well below average scores on contemplation, action, and maintenance. These participants seem to be characterized by a profile with a spike in their Precontemplation scale; and therefore, the label assigned to this cluster was Precontemplation (see Figure 2).

The 22 participants in Cluster 2 are characterized by average scores on precontemplation, and below average scores on contemplation, action, and maintenance. These participants seem to be most characterized by a lack of action and minimal involvement in any stage; therefore, the label assigned to this cluster was Uninvolved (see Figure 3).

Table 2

*Cluster Group Means, Standard Deviations, and ANOVA Results*

SCQ Subscale	Cluster 1 (PRECON)		Cluster 2 (UNINV)		Cluster 3 (PART)		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Precontemplation	69.17 <sub>a</sub>	6.59	50.83 <sub>b</sub>	4.72	44.28 <sub>c</sub>	8.76	26.26*
Contemplation	37.72 <sub>a</sub>	5.06	46.48 <sub>a</sub>	8.54	56.94 <sub>b</sub>	7.12	16.84*
Action	42.04 <sub>a</sub>	6.48	43.82 <sub>a</sub>	6.19	58.76 <sub>b</sub>	7.02	31.01*
Maintenance	43.36	11.55	48.91	10.78	52.84	8.02	2.14

*Note.*  $N = 47$ . PRECON = Precontemplation; UNINV = Uninvolved; PART = Participation. Means in the same row without a common subscript are significant at the .05 level of significance according to the Tukey HSD test. For Precontemplation subscale scores, Means in the same row without a common subscript are significant at the .05 level of significance according to Games-Howell since equal variance was not assumed.  
\* $p < .05$ .

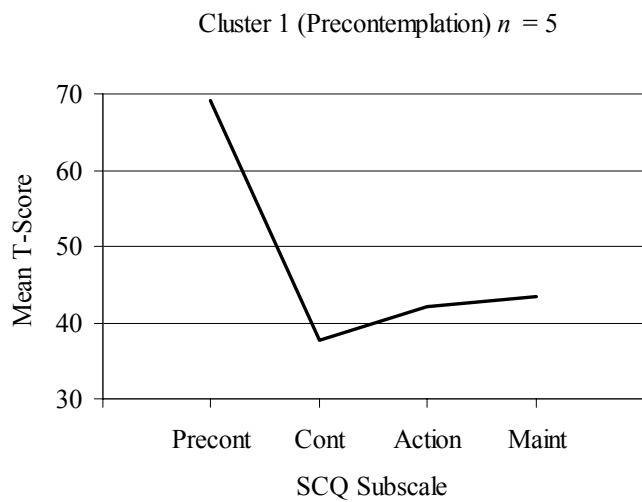


Figure 2. Cluster 1 (Precontemplation)

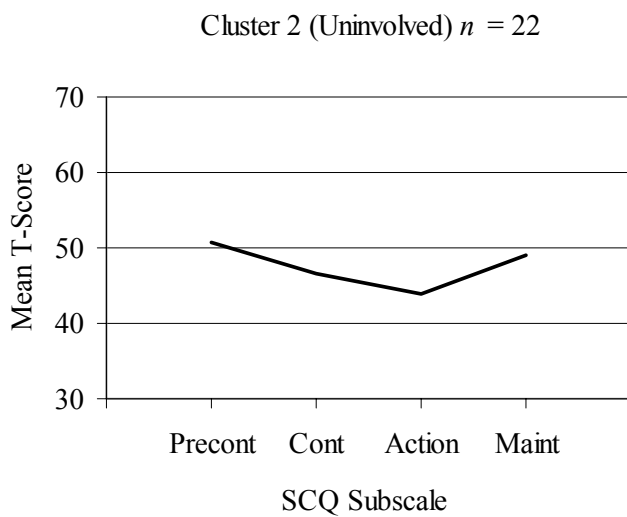
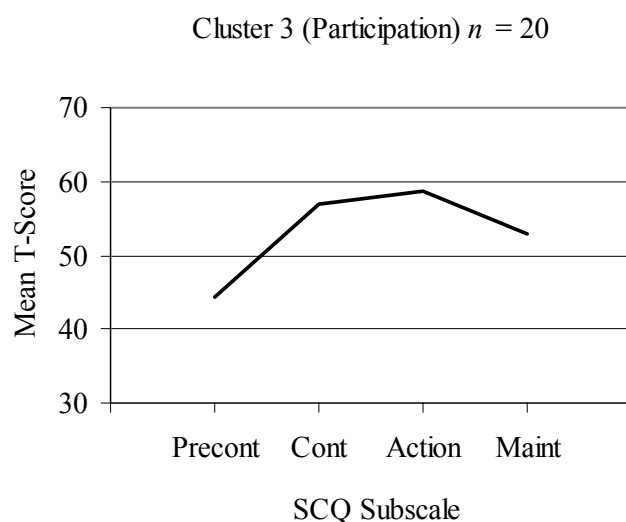


Figure 3. Cluster 2 (Uninvolved)

The 20 participants in Cluster 3 are characterized by below average scores on precontemplation, above average scores on contemplation and action, and average scores on maintenance. These participants seem to be characterized by both higher contemplation and action scores; therefore, the label assigned to this cluster was Participation (see Figure 4). Based on these results, Null Hypothesis 2 for Research Question 2 was rejected.



*Figure 4.* Cluster 3 (Participation)

#### *Research Question 3*

Are there differences among stages of change cluster groups on indicators of academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) while statistically controlling for gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation?

*Null Hypothesis 1.* There will be no statistically significant differences between stages of change cluster groups on indicators of academic progress (as defined by

semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) while statistically controlling for gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation.

Based on the results of bivariate correlations for all variables, it was determined that presemester GPA and end of semester GPA were not significantly correlated ( $r = .20$ ,  $p = .18$ ); and therefore could influence the usefulness of Semester GPA Residual Gain Score as a dependent variable. Thus, Semester GPA Gain Score was computed as an additional dependent variable, and added to the dependent variable list in Research Questions 3 and 4. Semester GPA Gain Score reflects the degree of improvement in a participant's GPA score from the previous semester to the current semester. Semester GPA Gain Score was computed as the current semester GPA minus the previous semester GPA.

Results suggest that only one covariate, current semester hours enrolled, was significantly correlated with the four dependent variables; semester GPA residual gain score ( $r = .62$ ,  $p < .05$ ), semester GPA gain score ( $r = .53$ ,  $p < .05$ ), cumulative GPA residual gain score ( $r = .52$ ,  $p < .05$ ), and end of semester probation status ( $r = .32$ ,  $p < .05$ ). Current semester hours enrolled was not used in an ANCOVA model because it violated Levene's test for homogeneity of variance and was not considered a significant enough variable to warrant the loss of a degree of freedom. In addition, the Precontemplation, Uninvolved, and Participation cluster groups did not differ with respect to their current semester hours enrolled, 11.6, 11.0, and 11.0, respectively. Thus, an ANOVA was employed to examine the differences among cluster groups on the

dependent variables (semester GPA residual gain score, semester GPA gain score, cumulative GPA residual gain score, and end of semester probation status). The covariates (i.e., gender, number of overall UGA hours earned, number of semester hours enrolled, and number of semesters on academic probation) were removed for Research Question 4.

Assumptions for an ANOVA were checked. Levene's test for homogeneity of variance was violated for Semester GPA Residual Gain Score,  $F(2, 44) = 2.87, p = .07$ ; was not violated for Semester GPA Gain Score,  $F(2, 44) = .38, p = .68$ ; violated for Cumulative Residual GPA Gain Score,  $F(2, 44) = 7.70, p = .001$ ; and not violated for End of Semester Probation Status,  $F(2, 44) = 1.75, p = .19$ . No significant differences were detected for any of the dependent variables examined, resulting in a failure to reject Null Hypothesis 1 for Research Question 3. (see Table 3).

#### *Research Question 4*

Can stages of change cluster groups account for a significant amount of variance in academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) over the course of one semester?

*Null Hypothesis 1.* Stages of change cluster group will not account for a significant amount of variance in academic progress (as defined by semester GPA residual gain score, cumulative GPA residual gain score, and end of semester probation status) over the course of one semester.

Table 3

*Cluster Group Means, Standard Deviations, and ANOVA Results for Semester GPA Residual Gain Score, Semester GPA Gain Score, Cumulative GPA Residual Gain Score, and End of Semester Probation Status*

Dependent Variables	Cluster 1 (PRECON) ( <i>n</i> = 5)		Cluster 2 (UNINV) ( <i>n</i> = 22)		Cluster 3 (PART) ( <i>n</i> = 20)		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
SGPAR	-.29	.48	.02	.71	.05	1.00	.74
SGPAG	.49	.80	.51	.80	.59	1.00	.95
CGPAR	-.16	.20	.01	.16	.02	.47	.54
PROB	2.80	.45	3.00	1.02	3.25	.91	.54

*Note.* *N* = 47. PRECON = Precontemplation; UNINV = Uninvolved; PART = Participation; SGPAR = Semester GPA Residual Gain Score; SGPAG = Semester GPA Gain Score; CGPAR = Cumulative GPA Residual Gain Score; PROB = End of Semester Probation Status.

Without a significant omnibus F-test in the ANOVA model, it was not possible to compute an effect size statistic. Thus, Null Hypothesis 1 for Research Question 4 could not be tested.

### Summary

Overall findings indicate that correlations among SCQ subscales and the dependent variables did not support a statistically significant relationship at the .05 level of significance. Cluster analytic methods helped to identify distinct cluster groups in a sample of undergraduate students on academic probation. ANOVA methods also indicated statistically significant differences between the groups. However, ANOVA methods employed to detect differences on relevant dependent variables failed to find significant differences between the cluster groups. In essence, the existence of cluster groups was internally validated, yet was not supported based on statistically significant differences on the outcome variables (i.e., semester GPA residual gain score, semester GPA gain score, cumulative GPA residual gain score, end of semester probation status).



## CHAPTER 5

### DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to test the use of the Stages of Change (SOC) paradigm with students on academic probation. A more specific goal of this study was to determine whether the *Stages of Change Questionnaire* (SCQ) (McConaughy et al., 1983, 1989) could help to identify distinct groups of students on academic probation in terms of their stage of change. Finally, an additional goal was to determine the degree to which a student's stage of change influences academic performance.

Correlational analyses, cluster analysis, and ANOVA statistical methods were used in this study to examine the four research questions and corresponding null hypotheses. This chapter presents a discussion of the relevant findings, implications of the results, limitations of the study, suggestions for future research, and conclusions.

#### Cronbach's Alpha Coefficients for the SCQ

The SCQ had satisfactory Cronbach's alpha coefficients in the range of .66 - .80. Results of previous studies have found Cronbach's alpha coefficients for the SCQ subscales in the range of .81 - .89 (O'Hare, 1996b). DiClemente and Hughes (1990) found Cronbach's alpha coefficients in the range of .69 - .82. A generally accepted standard for reliability estimates is above .70 (Huck & Cormier, 1996). These results are promising in that they suggest that the SCQ may be a reliable measure of distinct phases in the change process among students on academic probation. In addition, the Cronbach's

alpha coefficients would suggest that the SCQ subscales are sufficiently homogenous with respect to the particular stage being measured.

Relationships Among SCQ Subscale Scores, Semester GPA Residual  
Gain Score, Cumulative GPA Residual Gain Score, and  
End of Semester Probation Status

The relationship between the SCQ subscale scores (Precontemplation, Contemplation, Action) and the dependent variables were not statistically significant at the .05 level of significance. Theoretically, a relationship was assumed to exist since participants that scored high on precontemplation would likely have lower academic performance scores, and those that produced higher action scores would likely have higher academic performance scores. No such relationship was supported statistically.

It is interesting to note that there was a weak positive relationship between the Action subscale and End of Semester Probation Status ( $r = .25, p = .09$ ). This finding lends some support for a positive relationship between Action and at least one of the indicators of academic performance, though not at the .05 level of significance. This finding is consistent with the theoretical underpinnings of the SOC paradigm in that students with high Action subscale scores are actively involved in changing their behavior and as a result can be expected to perform more favorably on academic performance variables.

Overall results suggest that there is insufficient empirical evidence to assert that a relationship exists with regard to SCQ subscale scores and academic performance scores. A larger sample size may be necessary to test whether a statistically significant

correlation exists at the .05 level of significance between the SCQ subscales and the dependent variables used in this study.

*Additional Findings with Respect to Between Scale Correlations*

Though not addressed as a research question in the current study, significant correlations were obtained among the SOC subscale scores. These findings are consistent with the literature and lend further empirical support for the theoretical underpinnings of the model. For example, McConaughy (1989) found that a statistically significant negative correlation existed between the Precontemplation and Contemplation, Action, and Maintenance ( $r = -.52$ ;  $r = -.23$ ; and  $r = -.22$ , respectively) subscales. Contemplation subscale scores were positively correlated with Action and Maintenance subscale scores ( $r = .50$ ;  $r = .45$ , respectively). Lastly, Action subscale scores were positively correlated with Maintenance subscale scores ( $r = .48$ ).

The findings of the current investigation are consistent with the McConaughy results in that Precontemplation and Contemplation, Action, and Maintenance subscale scores were significantly negatively correlated ( $r = -.40, p < .05$ ;  $r = -.30, p < .05$ ; and  $r = -.32, p < .05$ , respectively). In addition, Contemplation subscale scores were significantly positively correlated with Action and Maintenance subscale scores ( $r = .57, p < .05$ ;  $r = .36, p < .05$ , respectively). A statistically significant relationship was not found between the Action and Maintenance subscale scores ( $r = .17, ns$ ). The correlations between the SOC subscale scores suggest that while the stages overlap to some extent, they are sufficiently homogenous. Overall, the patterns of correlations seem to provide further empirical support for the SOC framework.

## Using SCQ Profile Scores to Classify Participants into Statistically Derived Cluster Groups

Results of the present investigation suggest that three SCQ profile subscale scores (Precontemplation, Contemplation, Action) can be used to form statistically derived cluster groups. A three cluster group solution was found to exist in the sample of undergraduate students on academic probation using Ward's (1963) method. Follow-up statistical procedures (i.e., ANOVA) confirmed that significant differences existed on the cluster groups' mean subscale scores.

The three cluster groups (Precontemplation, Uninvolved, Participation) identified in the current sample are both empirically and theoretically different with respect to the SOC. The Precontemplation cluster group is characterized by high scores on precontemplation, and well below average scores on contemplation, action, and maintenance. The spike in their Precontemplation subscale score suggests that these students may exhibit limited awareness of the problem, low readiness to change, and may in fact be resistant to making change. The Uninvolved cluster group is characterized by average scores on precontemplation, and below average scores on contemplation, action, and maintenance. These participants seem to be most characterized by a lack of action and minimal involvement in any stage. Overall, these students may not be invested in making changes, though they may be aware that a problem exists. Lastly, the Participation cluster group is characterized by below average scores on precontemplation, above average scores on contemplation and action, and average scores on maintenance. These participants seem to be characterized by both higher contemplation and action scores. This group may be in the best position to make changes as they likely have the

highest level of readiness for change. For each of these cluster groups, there may be interventions that can best help them progress through the stages. Suggestions for possible interventions will be described in the Implications section of this chapter.

Previous research has found that the number of cluster solutions identified for most of the studies using the SCQ range from five to eight clusters. O'Hare (1996b) found a five cluster solution using a sample of 376 participants. DiClemente and Hughes (1990) also found five cluster groups in their study with 224 participants. McConnaughy et al. (1983) found nine clusters in a sample of 155 participants, while McConnaughy et al. (1989) found an eight cluster solution within a sample of 327 participants. The majority of these studies had sample sizes that ranged from 155- 376 participants. The limited sample size in the current investigation likely prevented finding additional cluster groups.

#### Differences Among Stages of Change Cluster Groups on Indicators of Academic Performance

Results of the present investigation suggest that the intended covariates were not significantly correlated to the degree that they could help account for the variance in academic improvement. An ANOVA model was used to examine differences among the three cluster groups with respect to the dependent variables. The findings suggest that the three cluster groups did not significantly differ statistically with respect to any of the four outcome variables (i.e., semester GPA residual gain score, semester GPA gain score, cumulative GPA residual gain score, end of semester probation status).

It is noteworthy that there was a trend toward increasing values on the academic performance indicators from the Precontemplation to Uninvolved to Participation cluster

groups. Though not statistically significant, the Participation cluster group outperformed the Precontemplation and Uninvolved cluster groups on each of the dependent variables. For example, the mean scores for semester GPA residual gain score for the Precontemplation, Uninvolved, and Participation cluster groups were -.29, .02, .05, respectively. The Participation cluster group improved their semester GPA by an average of .05 of a letter grade, while the Precontemplation cluster group experienced a -.29 of a letter grade decrease with the influence of presemester GPA score removed.

The mean scores for semester GPA gain score for the Precontemplation, Uninvolved, and Participation cluster groups were .49, .51, .59, respectively. The Participation cluster group improved their semester GPA gain score by .59 of a letter grade, while the Precontemplation group improved by .49 of a letter grade. In addition, the Participation cluster group improved their cumulative GPA residual gain score by .02 of a letter grade, while the Precontemplation cluster group experienced a -.16 of a letter grade with the influence of presemester cumulative GPA removed.

While there were no significant cluster group differences with respect to End of Semester Probation Status, a trend of increasing mean scores from the Precontemplation to Uninvolved to Participation cluster groups was observed (2.8, 3.0, and 3.25, respectively). In addition, the Participation cluster group had a higher percentage of students that improved and cleared academic probation than the Uninvolved cluster group, 55% versus 36%, respectively. It is also noteworthy that the Uninvolved cluster group experienced a 14% rate of withdrawal and dismissals, while the Precontemplation and Participation cluster groups had none.

Overall results suggest that the Participation cluster group scored slightly higher on the four dependent variables from the Precontemplation and Uninvolved cluster groups. However, the lack of statistically significant differences limits the conclusions that can be drawn. From a practical perspective, it can be argued that students in the Participation cluster group fared better, on average, than their counterparts in the Precontemplation and Uninvolved cluster groups. Therefore, while the results of the current investigation failed to provide empirical support for differences between the cluster groups on the dependent variables, it can be argued that membership in the Participation cluster group was associated with a trend toward higher academic performance. In addition, it can also be argued that the magnitude of differences on academic performance indicators between the three cluster groups, though not statistically significantly different, can make the difference between remaining on or clearing probation.

#### Using Stages of Change Cluster Groups to Account for Variance in Academic Performance Over the Course of One Semester

The findings of the current study did not support the findings of Topitzhofer (1995) who suggested that the SOC account for a significant amount of variance in academic performance. Topitzhofer found that between 18-20% of the variance in performance was explained by academic ability and Stages of Change. In the current study, the lack of a significant omnibus F-test prevented computing an effect size statistic.

## Considering Returning Dismissal Students' Readiness to Change and Academic Performance

As previously noted, 11 participants were removed from the data because they were returning dismissal students. More importantly, these students differed from the participants in the current study in two important ways. First, these students were formally dismissed from the institution for failing to maintain minimum academic standards. Second, as a condition of their readmission, these students were required to participate in mandatory biweekly counseling sessions with an academic counselor. The focus of these mandatory sessions was geared toward assessing current academic standing, identifying problem areas, and providing support for change. Although the 11 participants were not included in the current study, the investigator was interested in determining their stage of change and their outcome on the indicators of academic performance. Descriptive statistics was deemed an appropriate method to identify patterns in these data.

Using the highest subscale score to classify participants into Precontemplation, Contemplation, or Action, the participants were classified as follows: Precontemplation ( $n = 4$ ); Contemplation ( $n = 2$ ); and Action ( $n = 5$ ). Of the four participants in the Precontemplation cluster, two were dismissed from the institution, while the other two improved their GPA, but did not clear probation. Both participants in the Contemplation cluster group were able to improve their GPA, but did not clear probation. Of the five participants in the Action cluster group, four improved their GPA, but did not clear probation. One student withdrew from classes for unknown reasons.



With respect to differences between the three groups (Precontemplation, Contemplation, Action) on the dependent variables, the results are as follows: semester residual gain score = -.007, -.09, .32, respectively; semester GPA gain score = .28, -.85, .91, respectively; cumulative GPA residual gain score = -.02, -.03, .02, respectively. Again, while the differences are not statistically significant, it appears as though the Action cluster group outperformed the Precontemplation and Contemplation cluster groups across each of the dependant variables. Again, the trend toward higher scores from early stages to later stages of change suggests that students in later stages of change seem to outperform those in earlier stages of the change process.

### Implications

#### *Interventions*

Readiness to change has received considerable attention and empirical support in the addictions and health psychology fields in the past decade. Recent understanding of this construct suggests that it has implications for treatment efficacy and compliance. In addition, the consequences (i.e., early termination) of beginning an intervention prior to assessing a client's level of readiness to change have been given increased attention in the literature (Prochaska et al., 1992). Determining one's level of readiness to change seems intuitively like a starting point in any intervention, though few interventions programs have focused on this area. In fact, one criticism of many intervention programs is that they operate under the assumption that participants are highly motivated for change. This criticism also seems true for most of the intervention programs for students in academic difficulty.

One exception to the criticism noted above is Hirsch's Multiple Intervention Model (2001). In this model, Hirsch describes a theoretical approach to working with students in academic difficulty that begins with identifying a problem area and assessing level of readiness to change based on low, medium, or high levels. The author does not make reference to the SOC paradigm when discussing assessment of readiness to change in his model; thus, it is unclear whether he would conceptualize the levels of readiness as being similar to SOC. However, on the surface, SOC seem to fit nicely into the assessment component of his model.

One limitation of Hirsch's theoretical model is in the way in which he suggests measuring readiness to change. Specifically, he noted that one's level of readiness for change can be evaluated through a series of questions that generally assess motivation to change. For example, the student can be asked, "How would you rate your readiness to change on a scale from 1-10?" One limitation of this approach is that the cognitive, affective, and behavioral components of change are not simultaneously tapped. Also, there seems to be no way to uncover how a student may perceive him/herself with respect to other stages in the change process. In this way the SCQ may improve the assessment process.

An example of how to implement the SOC with a student on academic probation is provided below for clarification. When a student presents for an appointment, it is important to avoid blaming and being judgmental. The goal of this first session should be to establish rapport and form a working relationship. After some initial small talk, the student can be asked to complete the SCQ that will help the academic counselor/student affairs professional better understand how the student is experiencing his/her academic

probation status. Once the student completes the instrument, a brief explanation of the SOC paradigm, along with information about the stages, as well as an interpretation of the SCQ can be provided. It is important to discuss the developmental progression inherent in the model, and that regression is often possible in the absence of sustained effort. The student should be helped to understand that most individuals move through the stages provided that they have the conditions to help foster progress through the stages. The student can be informed that movement through the stages often results in improvement in the problem being addressed.

Determining which interventions might work best within particular stages was not the focus of this study; however, the following suggestions provided below may serve as a guide to intervening with students in particular stages. While the overall goal is to increase motivation and readiness to change, more stage specific strategies can often move a student to the next stage of change. Students in the Precontemplation stage are characterized by a lack of awareness regarding the problem and have no intention of making changes in their behavior in the near future, and may often exhibit resistance to change. For this group of students, it is important to avoid blaming and judging. This group of students may externalize their academic failure; thus, providing factual information about academic probation and the dismissal process, exploring the pros and cons of not making changes, and exploring motivations for remaining in college are important first steps.

Students in the Uninvolved stage are characterized by average levels of endorsement for each of the SOC with the lowest subscale score in the Action stage. For this group of students, encouraging and supporting increased levels of activity will be an

important goal. For example, a student in the Uninvolved cluster group may be helped by exploring the reason(s) for his/her uninvolved in change. Dialoging with the student may uncover that he/she is depressed, uncertain about his/her career goals, discouraged about his/her progress, or uncertain about how to make necessary changes. Setting small realistic goals may provide the necessary impetus for motivating the student to make ongoing and sustained change.

Lastly, the Participation cluster group is characterized by above average scores on contemplation, with their highest score on action. These students are often at a point in which they are highly motivated to change and may just require some additional encouragement and support for identifying problem areas and developing a plan to change their academic circumstances. For this group of students, it is important to help them maintain realistic goals about changing their academic circumstances, continue to explore possible blocks to making progress, and develop a plan to monitor and reassess motivation for change. It is often the case that this group of students will regress to old academic behaviors once the initial crisis has passed and they feel they are out of academic peril. However, the role of the counselor or student affairs professional will be one of support.

The following suggestions have theoretical support in the literature. Future studies may focus on providing empirical support for which types of interventions work best within particular stages. What is clear is that poorly timed interventions or inappropriate interventions are not likely to have an impact. For example, it is unlikely that a student in the Precontemplation stage will follow up on a referral to the academic assistance center.

Conversely, would it be appropriate to mandate that someone in the Participation stage attend an academic improvement course?

Despite the lack of statistically significant findings between the cluster groups on the dependent variables identified in the present study, the results of the current study do seem to provide some support for using the SCQ as an evaluation tool. Exploring readiness for change seems like an appropriate and necessary intervention with implications for a student's academic well-being. The need for counseling interventions is supported by Davis and Ballard's (1985) finding that 30% of students on academic probation cited a lack of motivation as the reason for their poor academic performance. For students in academic difficulty, the ability to conceptualize their academic problem as a developmental process in terms of being in a particular stage may help them feel less stigmatized and provide a visible continuum on which they can develop a plan to move forward.

### *Education and Training*

The SOC heuristic has enormous appeal because of its face validity. It is a model that conceptualizes the change process as naturally occurring and is versatile enough to be used with a variety of client concerns (e.g., substance abuse, weight management). To its credit, the model is easy to comprehend and is relatively free of complex psychological jargon. In addition, further information on the model is readily available.

The SOC paradigm offers a unique perspective on the process of change in that change is not viewed as an all-or-none phenomenon, but rather, change is viewed as a developmental progression (Prochaska et al., 1992). With this paradigm, individuals can move back and forth between the stages at particular points in time. When the helping

professional is trained to understand this change dynamic, he/she is able to facilitate the process of change by knowing when to intervene and when to allow the process of change to unfold naturally. This skill is not inherent, and training can provide a theoretical orientation for the academic counselor/student affairs professional to understand his/her role in this process. In this way, training on the SOC paradigm could be of benefit to anyone who works with individuals confronted with problems in a variety of settings.

Professionals with varied training experiences often do a majority of the academic advising on many college and university campuses. These individuals can find that the SOC paradigm and SCQ are useful in their work with students on academic probation. Training on the theoretical underpinnings of the SOC paradigm and the SCQ can be accomplished within a workshop setting with relative ease.

With increasing budget concerns at institutions of higher education, programs for students on academic probation may experience decreases in funding. Implementing the SOC paradigm within an existing program or implementing SOC within an academic advising relationship can be accomplished with minimal expense. In many ways, incorporating the SOC paradigm within existing programs or an advising relationship is less about creating a new program and involves more of a change in thinking about how one's level of readiness to change influences intervention efforts and a student's motivation to change.

Future education and training can also be met through use of the Internet. For example, student affairs professionals could access a website specifically designed for working effectively with academic probation students. The website would provide

training on the SOC paradigm, as well as training on administering, scoring, and interpreting the SCQ. With future research, the training modules may evolve to include suggestions for what types of interventions are most likely to be effective with a particular cluster group. In this way, student affairs professionals at a variety of institutions could learn about the model and use the information to serve students on academic probation. Whether this would be a worthwhile goal could be the focus of future investigations.

#### Limitations

1. The sample size requirement was not met for this study; therefore, results should be interpreted with caution.
2. The number of participants in some of the cluster groups was much smaller in some groups than other groups.
3. A correlational research design is unable to establish causation; thus, causality could not be established in the current study.
4. Overall, the participants were a homogenous group with regard to race and ethnicity. Whether minority students would produce similar cluster groups could be the focus of future investigations.
5. Every effort was made to collect data prior to midterms. However, in some cases participants completed research packets later in the semester.
6. Participants were assured that their participation would not positively or negatively influence their probation status. However, it is possible that they felt some pressure to participate and overestimate their level of readiness to change due to their academic circumstances.

### Suggestions for Future Research

Altmaier et al. (1983) noted that being placed on academic probation has implications for subsequent academic performance and that this deserves further attention. Little is known about what factors account for academic performance subsequent to being placed on probation. Additional research is needed to understand how readiness to change influences one's academic performance. In this study, readiness to change was examined independent of interventions. The results of the current investigation do not empirically support the notion that SOC can be a useful construct in accounting for a student's academic performance on the dependent variables used in the present study. The limited sample size was a major limitation of this study. However, given the trends observed in the data, it may be prudent to replicate the study with a larger sample size.

Future studies may also want to examine whether there are other clustering methods that would improve the classification of students on academic probation into cluster groups based on the SOC framework. A related goal would be to identify additional cluster group profiles for students on academic probation and to determine general trends of performance on outcome variables. In addition, future studies may identify relevant covariates that may help account for the variance in academic performance subsequent to being placed on academic probation. Also, future studies may identify relevant dependent variables that can be used as indicators of academic performance.

Future studies may wish to examine students as part of a longitudinal design to see whether changes in academic improvement hold up over time with changes in level of



readiness to change. Motivation to change will likely vary over the course of an academic year. Longitudinal studies may provide more of a picture of change over a period of time as a function of stage of change.

There is a wealth of psychological theories and models that can be tested and used with students on academic probation. There is an extensive literature on college student development that has guided our thinking about the cognitive, socio-emotional, and interpersonal development of college students. In addition to college student development theories, there are other psychological theories and constructs that may also help us better understand students on academic probation and how best to intervene with this group of students. For example, Luzzo, James, and Luna (1996) noted that attributional retraining treatment (ART) can impact the career beliefs and career exploration behavior of participants. They describe ART as a method of intervention designed to change maladaptive attributions to more adaptive attributions that enable an individual to experience changes in beliefs and behaviors. The authors noted that other researchers have employed ART with some success among students experiencing academic failure.

### Conclusions

Counseling psychologists by virtue of their training and skills have the expertise to contribute to the knowledge base about students on academic probation, and the ability to help develop interventions for this group of students. Counseling psychologists can contribute to this important area of research by exploring the applicability of current psychological theories and models for helping students on academic probation. The current study represents such an attempt.

Overall results suggest that ongoing examination of whether the SOC and SCQ can be empirically supported seems justified. Whether the SOC is a useful heuristic for considering the change process among students on academic probation still warrants empirical support. The results of the current investigation are promising and suggest that a slightly modified SCQ maintained its psychometric properties and provided a method of classifying students into relevant cluster groups that were distinct. However, the groups did not statistically differ with respect to the dependent variables. It is noteworthy that increasing values on the dependent variables were observed from Precontemplation to Uninvolved to Participation cluster groups, which suggests that membership in later stages of change was associated with improved academic performance.

While it appears as though the SCQ can be employed within the context of a helping relationship similar to the one described in Hirsch's Multiple Intervention Model, it remains to be seen whether it can be empirically supported as a method of evaluating, intervening, and monitoring readiness to change among students on academic probation.

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APPENDIX A  
ORAL PRESENTATION FORM

### Oral Presentation Form

You are being asked to participate in a research study conducted by Julio I. Rojas, a doctoral candidate in Counseling Psychology at The University of Georgia. He is currently completing his internship training at a veterans' hospital in Gainesville, FL and regrets that he is unable to meet you personally.

As an undergraduate student on academic probation in the College of Agricultural and Environmental Sciences (CAES) or the College of Education (COE) at The University of Georgia (UGA), you have valuable information related to your academic experience. Mr. Rojas is interested in understanding more about your perceptions related to academic probation and how this may influence your academic progress.

Your participation is strictly voluntary and will not in any way influence, positively or negatively, your probation status in the CAES or COE. You may discontinue participation at any time. You must be at least 18-years-old to participate in this study.

If you agree to participate in this study, I will give you a research packet to complete. You will be asked to return the sealed research packet to me when you are finished. I will wait outside while you complete the packet.

In order to determine your academic standing at the beginning and end of the semester that you participate in the study, Mr. Rojas will need to obtain your student number (social security number) to obtain copies of your transcript. There is a release of transcripts form on which to indicate your student number. Your responses to the questionnaires will be strictly confidential and placed in a locked cabinet. Any information obtained in connection with this study that can identify you will remain confidential.

Completion of the packet will take 15 minutes.

If you participate in the study, your name will be submitted for a random drawing to win a Palm Pilot. One winner will be contacted at the end of data collection for this study, which is scheduled to be in June 2003.

If you have any questions before or during this study, please feel free to ask me. If there are additional questions after completion of the study contact Mr. Rojas at (706) 202-9878 or email him at [jrojas@coe.uga.edu](mailto:jrojas@coe.uga.edu). Mr. Rojas would like to THANK YOU for agreeing to participate in this study.

APPENDIX B  
INFORMED CONSENT FORM

I, \_\_\_\_\_, agree to participate in a research study entitled “Examining the Utility of Stages of Change with Undergraduate Students on Academic Probation”, which is being conducted by Julio I. Rojas under the direction of Rosemary E. Phelps, Ph.D., both in the Department of Counseling and Human Development Services, 402 Aderhold Hall, Athens, GA 30602, (706-542-1812). I understand that participation is entirely voluntary, and I do not have to take part in this study. I can withdraw my consent at any time without penalty and have the results of my participation returned to me, removed from the research records, or destroyed. The following points have been explained to me:

- 1) The reason for this research is to understand more about a student’s perceptions when placed on academic probation and how this influences one’s academic performance.
- 2) The benefits that I may expect as a result of participation in this study are: (a) I will have the opportunity to help further knowledge of what students on academic probation experience when placed on probation, (b) I will help institutions of higher education understand how they can address the needs of students in academic difficulty, and (c) I will have my name submitted for a random drawing to win a Palm Pilot.
- 3) The procedures for participating in this study are as follows: (a) I will be given a brief oral presentation of the study, (b) I will be given a research packet that includes two consent forms, a release of records for transcripts form, a questionnaire, and a demographic sheet to complete, (c) I understand that my participation will require 15 minutes, and (d) I will provide my student number (social security number) so that my transcripts can be accessed at the beginning and the end of the semester that I participate in the study.
- 4) I understand that no discomforts or stresses are foreseen as part of my participation in this study. There will be no effect on my academic probation status if I participate or do not participate in this study.
- 5) The results of my participation will be confidential, and all research information obtained from me will be kept in a locked filing cabinet. I understand that the results may one day be published in group form and that my name will not be associated with the study in any way. All identity links that can identify me will be destroyed after completion of the study, which is scheduled for June 1, 2003.
- 6) The academic counselor will answer any questions about the research before or during the study. If there are additional questions after completion of the study, I may contact Julio I. Rojas at 706-202-9878 or jrojas@coe.uga.edu.

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study.

\_\_\_\_\_  
Signature of Principal Researcher      Date

\_\_\_\_\_  
Signature of Participant      Date

**PLEASE SIGN BOTH COPIES OF THIS FORM. KEEP ONE AND RETURN THE OTHER TO THE INVESTIGATOR.**

For questions or problems about your rights please call or write: Chris A. Joseph, Ph.D., Human Subjects Office, University of Georgia, 606 A Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-6514; E-Mail Address IRB@uga.edu.

APPENDIX C  
RELEASE OF RECORDS FOR TRANSCRIPTS



## RELEASE OF RECORDS FOR TRANSCRIPTS

I agree to participate in a research study entitled "Examining the Utility of Stages of Change with Undergraduate Students on Academic Probation", which is being conducted by Julio I. Rojas under the direction of Rosemary E. Phelps, Ph.D., both in the Department of Counseling and Human Development Services, 402 Aderhold Hall, Athens, GA 30602, (706-542-1812). This study is being conducted with undergraduate students in the College of Agricultural and Environmental Sciences (CAES) and with undergraduate students in the College of Education (COE).

I understand that as part of this study, Julio I. Rojas is interested in knowing more about my academic progress. I grant him permission to obtain transcripts of my academic progress through the Office of Academic Affairs for the semester I participate in this study. **(Please check the college that you are enrolled in):**

\_\_\_\_\_ *College of Agricultural and Environmental Sciences*

\_\_\_\_\_ *College of Education*

**Please circle the semester of participation:**

*Summer 2002*

*Fall 2002*

*Spring 2003*

My student ID number (social security number) is \_\_\_\_\_.

I understand that Julio I. Rojas is specifically interested in the following aspects of my transcript:

Cumulative GPA

Beginning semester GPA

End of semester GPA

Probation status

SAT scores

Number of overall hours earned

Number of semester hours enrolled

Number of semesters on academic probation

The counselor will answer any further questions about the research now, or you may contact the researcher at a later date at (706) 202-9878.

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to allow the researcher access to my transcripts for the above identified semester. I have been given a copy of this form.

\_\_\_\_\_

Print Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

For questions or problems about your rights please call or write: Chris A. Joseph, Ph.D., Human Subjects Office, University of Georgia, 606 A Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-6514; E-Mail Address IRB@uga.edu.

APPENDIX D  
DEMOGRAPHIC QUESTIONNAIRE

## Demographic Questionnaire

1. Gender:  
 Male  
 Female
2. Age: \_\_\_\_\_
3. Race/Ethnicity:  
 African American/Black  
 Asian American  
 European American/White  
 Latino(a) American/Hispanic American  
 Native American  
 Other: (Please specify) \_\_\_\_\_
4. Class Standing:  
 Freshmen  
 Sophomore  
 Junior  
 Senior
5. Probation Category:  
 Scholastic  
 Continued  
 Returning 1<sup>st</sup> Dismissal  
 Returning 2<sup>nd</sup> Dismissal  
 Don't Know
6. Please indicate your major: \_\_\_\_\_