

## Assessing Noncognitive Variables to Identify and Treat Freshmen At-Risk for Academic Difficulty

NACADA  
2005 Mid-Atlantic Regional Conference  
Advising Toolkit: Advising  
Tips, Techniques and Tactics for Diverse Audiences  
April 18, 2005

1

## Presenters

Sandra Breeden  
Jim Calliotte  
Worth Pickering  
Tisha Paredes



Other Research Team  
Stephen Zerwas  
Anthony Macera

**Old Dominion University**

2

## Background

Our research was informed by many scholars, especially:

- Vincent Tinto's retention studies
- Alexander Astin's body of research on the CIRP Freshman Survey
- William Sedlacek's work with the Noncognitive Questionnaire

3

## Background

- More than 50 % of all freshmen leave without a degree
- Greatest attrition occurs between freshmen and sophomore years
- Most freshmen who leave are in academic difficulty
- The first six weeks are critical to freshmen success

4

Alexander Astin  
*Chronicle of Higher Education*  
October 2004

"...most institutions' degree-completion rates are primarily a reflection of their entering-student characteristics, and...differences among institutions' completion rates are primarily attributable to those differences... The obvious solution is for colleges to develop the habit of collecting relevant information on their students when they first enroll."

5

Tinto (1988) Stages of Student Development

Our . . . actions should be concentrated on the very early stages of the students' college career, rather than on later stages after serious problems have surfaced...

6

### **The Question for Institutions of Higher Education**

How can we identify, as early as possible, which admitted first year students might experience academic difficulty and/or attrition in order to make the most timely intervention?

7

### **Cognitive Predictors**

- SAT
  - High School Grade Point Average
- (Traditionally used as admission's criteria)

8

Anderson (1999)

Historically, cognitive variables have only explained approximately 15 to 20% of the variance in student persistence.

9

Once students are admitted using cognitive predictors, we need additional predictors to assist in defining which of these students are more likely to experience academic difficulty.

10

### Demographic Predictors

- Gender
- Race
- Family Socioeconomic Status
- Residence (on/off-campus)
- Etc.

11

### Noncognitive Predictors

- Attitudes
- Characteristics
- Opinions
- Behaviors

12

Cognitive and demographic data are usually available on the institutional student data base.

Noncognitive data must be collected.....

13

# TCI

## *Transition to College Inventory*

14

# TCI

The *Transition to College Inventory (TCI)* was developed to measure noncognitive factors that might contribute to freshman academic difficulty and related attrition.

15

# TCI

## Topic Areas

- ✓ Reasons for Attending College
- ✓ Reasons for Choosing This College
- ✓ Experiences During the Senior Year of High School
- ✓ Self Ratings of Abilities and Traits
- ✓ Attitudes About Being a College Student
- ✓ Predictions About Academic Success at College
- ✓ Predictions About Involvement in College

16

### Administration and Scoring

- Scannable Forms
- Administered during Orientation
- ~30 minutes to complete
- 112 Items provide descriptive profile of Freshmen Class
- 47 Items in TCI Index
- Profiles generated and in advising folders with other placement results on 2<sup>nd</sup> day
- Interpretation with advisor early in fall semester

17

### *TCI Index*

The *TCI Index* was developed by identifying those items related to higher chances of academic difficulty during the freshman year.

18

### *TCI Index*

The higher the *TCI Index*, the greater the chance for academic difficulty.

The *TCI* predicts academic difficulty equal to or better than cognitive factors.

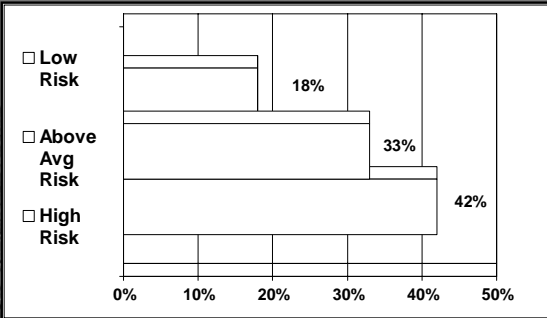
19

### Index Risk Categories

- **0-5** Low Risk for Academic Difficulty and/or Attrition
- **6-8** Above Average Risk – Caution Range
- **9+** High Risk for Academic Difficulty and/or Attrition. Early Intervention Strongly Recommended

20

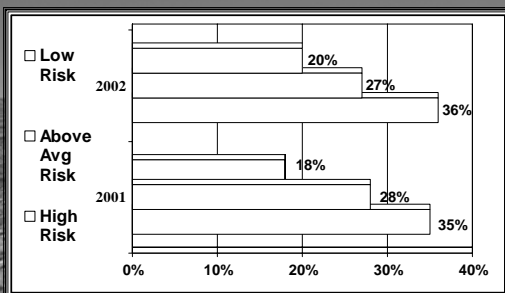
First Semester Academic Difficulty Rate by *TCI Index* Grouped by Risk Categories



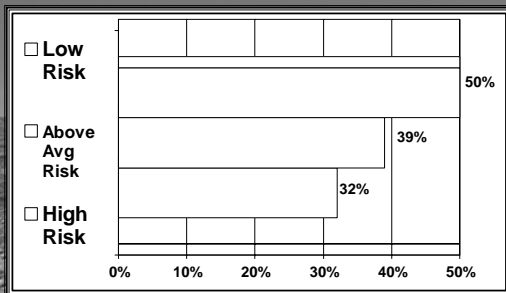
**TCI**

Students with high *TCI Indexes* are about twice as likely as those with low Indexes to experience academic difficulty (GPA < 2.00) and attrition at the end of their freshman year.

Freshman to Sophomore Attrition by *TCI Index* Grouped by Risk Categories



6-Year Graduation Rates by *TCI Index* Grouped by Risk Categories



Based on the *TCI Index*, advisors can recommend:

- Participation in curricular interventions such as U101 courses or Learning Communities.
- Follow-up advising/counseling at the beginning of the Fall Semester.

## Interpreting and Using the *TCI Advising Profile*

College Group: Undermen	
Publication Score:	15
SAT Verbal:	660
SAT Math:	600
HS GPA:	2.51
College:	Unknown
Earn Degree:	Drop Out
Most Liked Course:	Inherent Skills
Major Score:	18 (Failed)
Blank:	0
<b>Deciding to Attend College</b> (Very Important, Somewhat Important, Not Important)	
To get away from home	Very Important
<b>High School Experiences</b> (0 hrs, 1-5 hrs, 6-15 hrs, 16-20 hrs, > 20 hrs)	
Studying or doing homework	Over 20 Hours
Studying with friends	Over 20 Hours
Talking with Teachers outside class	Over 20 Hours
Partying	Over 20 Hours
Working for pay	Over 20 Hours
Playing computer/video games	Over 20 Hours
Using the internet	Over 20 Hours
Doing hobbies	Over 20 Hours
<b>High School Experiences</b> (Frequently, Occasionally Never)	
Failed to complete a homework assignment on time	Frequently
Drank alcoholic beverages	Frequently
Had difficulty concentrating on assignments	Frequently
<b>Abilities and Traits</b> (Top 10%, Above Average, Average, Below Average, Lowest 10%)	
General academic ability	Average
Mathematical Ability	Lowest 10%
Study Skills	Lowest 10%
Time management skills	Lowest 10%
Verbal ability	Below Average
Drive to achieve	Below Average
Popularity with the opposite sex	Below Average
<b>Attitudes About Being a College Student</b> (Strongly Agree, Moderately Agree, Slightly Agree, Slightly Disagree, Moderately Disagree, Strongly Disagree)	
It is important to me to be a good student	Moderately Agree
I expect to work hard at studying in college	Moderately Agree
I am committed to being an active participant in my college studies	Moderately Agree
I will be proud to do well academically in college	Slightly Agree

## Interpreting and Using the *TCI Advising Profile*

1. Describe the student in terms of her/his salient characteristics.
2. Develop intervention(s) to assist this student.

## Factor Analysis of the *TCI*

29

## Factors

- College Involvement
- Influences on College Choice
- Student Role Commitment
- Athletic Orientation
- Personal / Academic Concerns
- Self Confidence
- Institutional Commitment
- Socializing Orientation
- Independent Activity Focus

30

## Results of Logistic Regression Analysis Predicting Academic Difficulty at the End of the First Semester

31

## Factors Related to Freshmen Academic Difficulty at the End of the First Semester

1. Socializing Orientation (+)
2. Self Confidence (-)
3. Independent Activity Focus (+)
4. Student Role Commitment (-)
5. Athletic Orientation (+)

32

Sample Items for Each Factor  
Significantly Related to  
Academic Difficulty

33



Socializing Orientation

"Partying"

"To participate in college social life"

"Drank alcoholic beverages"

34



Self Confidence

"General academic ability"

"Drive to achieve"

"Interpersonal communication skills"

"Study skills"

35



Independent Activity Focus

"Playing computer / video games"

"Watching TV"

"Doing hobbies"

36



## Student Role Commitment

"I expect to work hard at studying in college"

"It is important to me to be a good student"

"I will be proud to do well academically in college"

37



## Athletic Orientation

"Participate in varsity sports"

"Use campus athletic facilities for individual or group recreational activities"

"Exercising on my own"

38

## Sample Items for Each Additional Factor

39



## Personal / Academic Concerns

"Time management skills"

"Failed to complete homework assignments on time"

"Had difficulty concentrating on assignments"

"Feel overwhelmed occasionally by all I have to do"

40



## College Involvement

- “Participate in campus clubs and organizations”
- “Talk with faculty informally outside of class”
- “Have serious discussions with students whose beliefs and opinions are different from yours”
- “Participate in cultural events (art, music, theater) on campus”

41



## Influences on College Choice

- “Open House / Visitation Days”
- “The college’s good social reputation”
- “The college’s good academic reputation”
- “This college’s graduates get good jobs”

42



## Institutional Commitment

- “Transfer to another college at the end of my freshmen year”
- “I was not accepted by my higher choice college(s)”
- “Be satisfied with this college”

43

## *TCI Freshman Class Profile*

In addition to the early identification of potentially at-risk students, the *TCI* can be used to develop a profile of each year’s incoming freshmen class based on their salient noncognitive characteristics.

44

For Further Information  
on the ***TCI***

Please go to:

<http://www.odu.edu/tci>

45