ł



# The Development and Validation of a Measure of Career Integration in College Students

William B. Davidson	Hall P. Beck
Angelo State University, San Angelo, USA	Appalachian State University, Boone, USA

A measure of career integration was developed and administered to 3,258 students enrolled in baccalaureate programs at five universities in the United States. Principle component analysis of scores indicated that the initial pool of 11 items could be meaningfully explained by one substantial factor. The five highest loading items were retained for further analyses, forming an internally reliable scale. Using the original sample of students and their scores on other relevant variables, the measure of career integration was validated by its association with degree commitment, and its incremental validity was confirmed with hierarchical regression after controlling for two other prominent types of integration, academic and social. Also, the relationship between the career integration measure and degree commitment was substantial in both lower-level as well as upper-level students. The implications for retention are discussed.

Keywords: career integration, scale development, college student retention, career counseling, degree commitment

Academic and social integration are two of the most important determinants of college student success and persistence (Braxton & Mundy, 2001-2002). The central focus of the two qualities is the students' feelings of compatibility and satisfaction with the school they are attending. In the case of academic integration, the feelings are based on attitudes toward the curriculum, instruction provided in courses, and the attainment of scholastic standards. Social integration, on the other hand, entails satisfaction with the people encountered at the school and feelings of belongingness.

Tinto first proposed the significance of academic and social integration (reviewed in Tinto, 1993). His ideas launched an impressive body of empirical inquiries; many of the subsequent models of student success and persistence included his two forms of integration, as well as a host of other variables (for reviews, see Braxton & Hirschy, 2005; Cabrera, Nora, & Castaneda, 1993; Davidson, Beck, & Milligan, 2009). This literature is too voluminous to be reviewed here, but a common theme is the connection between integration and several important outcomes, such as the students' commitment to earning a degree, their commitment to their college or university, and their persistence along the path to the degree.

In addition to the two forms of integration posited by Tinto and tested in subsequent models, a third form of integration, career integration, has been proposed as a crucial factor in students' development and persistence (Ashar & Skenes, 1993; Hirschy, Bremer, & Castellano, 2011; Phelps, 1996). Briefly stated, this construct is the students' sense of compatibility between what they are learning in and out of the classroom and their

William B. Davidson, professor, Ph.D., Department of Psychology, Sociology, & Social Work, Angelo State University. Hall P. Beck, professor, Ph.D., Department of Psychology, Appalachian State University.

# 372 THE DEVELOPMENT AND VALIDATION OF A MEASURE OF CAREER INTEGRATION

employment aspirations. Specifically, this quality reflects the students' beliefs that the training and experiences being provided by the school will yield many positive employment benefits. In his review of nine themes of college student retention, John Bean (Bean, 2005) underscores the importance of students, ".... thinking that one's education will lead to employment. The practical value of an education comes from learning skills or getting good grades in courses that will provide access to jobs requiring these skills. Students who make no connection between what they study and their future plans for employment are less likely to .... fit in" (p. 222).

The development of students' career knowledge and readiness has been addressed in a variety of ways, including internships, volunteer opportunities, job fairs, mock interviews, psychological and career assessments, and career workshops. Most schools have a Career Services Office, which bears much of the responsibility for students' career development (for review, see Vinson, Reardon, & Bertoch, 2014), and some schools offer a general careers course to lower-level students (Folsom, Peterson, Reardon, & Mann, 2005; Grier-Reed & Chahla, 2015). Recently, an assessment tool was validated that evaluates how well students have progressed in pursuing information about careers and forming a career identity, the Occupational Engagement Scale—Student (Cox, Krieshok, Bjornsen, & Zumbo, 2015). The content of this nine-item scale addresses career growth in activities outside the classroom.

We note two gaps in the conceptual and empirical development of the concept, "career integration". First, a validated measurement tool for the quality as it develops in the classroom has not been forthcoming. Arguably the most important preparation for careers takes place in the students' major courses. Informal observation suggests that major courses often include career information, and that there is a need to assess the students' attitudes about the career relevance and utility of what they are learning in the classroom.

Second, though some investigators have discussed the association of course material and career integration, these articles have focused on limited populations, either two-year occupational programs (Hirschy, Bremer, & Castellano, 2011), doctoral programs (Phelps, 1996), or baccalaureate courses for non-traditional students (Ashar & Skenes, 1993). Clearly, the usefulness of the concept of career integration would be enhanced by the development of a validated scale applicable to baccalaureate programs in general.

The validation of a measure of career integration in college students entails testing its association with other theoretically-expected characteristics. Models of self-regulation and the pursuit of goals offer a useful framework for identifying a relevant characteristic (for review, see Gollwitzer & Oettingen, 2013). When people set long-term goals and pursue them, their striving and persistence is determined by, among other things, the sense of efficacy that progress is being made and that the steps taken will eventuate in goal attainment. Students in higher education predominantly set the goals of (a) earning a degree and (b) obtaining a desirable career. The former is perceived as a qualification for the latter, so the steps taken to attain one are expected to also secure the other. In other words, their studies should not only earn a degree but also prepare them for a good career. Therefore, the strength of their commitment to earning a degree should be enhanced by its career-relevance.

If there is a relationship between career integration and degree commitment, a follow-up question is whether the association exists in both lower-level and upper-level students. This is an important consideration because, typically, most of the courses taken by students in the first two years are general education or core curriculum, whose career relevance may not be as apparent as courses taken later in the students' major. If the relationship among lower-level students is as strong as it is among the advanced students, it would have meaningful implications for infusing lower-level courses with examples of career applications and the career-relevance of topics.

The purposes of the current study are to: (1) develop a reliable, valid measure of career integration which includes course-relevant items; (2) test the association of the scale with degree commitment; (3) determine if the relationship between career integration and degree commitment holds for lower-level students (freshmen and sophomores) and upper-level students (juniors and seniors); and (4) investigate whether the new career integration scale explains variance in degree commitment beyond that which is accounted for by academic and social integration.

# Method

#### **Participants**

The participants were 3,258 students enrolled in baccalaureate programs at five universities located in the United States. The sample included 2,164 freshmen, 428 sophomores, 418 juniors, and 248 seniors. There were 2,135 females and 1,123 males. The ethnicities were 2,367 Caucasians, 350 Hispanics, 216 African-Americans, 161 Asians, 15 Native Americans, and 149 students who classified themselves as "Other Ethnicity".

#### Measures

We wrote 11 objective items to measure career integration, answered and scored on a five-point Likert scale. The items assessed the students' perception of a connection between the courses and various aspects of future employment such as its availability, required skills, enjoyment, financial compensation, and being successful. Other items queried the students' amount of knowledge of careers, their level of commitment to a career, the relevance of the training, and the role of a career in their personal happiness and identity.

Also, we administered three relevant scales from the College Persistence Questionnaire (CPQ) (Davidson, Beck, & Milligan, 2009; Davidson, Beck, & Grisaffe, 2015), Degree Commitment, Academic Integration, and Social Integration. Each of the CPQ scales is composed of three objective items that are answered and scored on a five-point Likert scale. Previous research has established their reliability and validity (Davidson et al., 2015). Even though the scales are brief, they had acceptable levels of internal reliability in the current study ( $\alpha$ ): Degree Commitment = 0.79, Academic Integration = 0.77, Social Integration = 0.77.

#### Procedure

The questions were administered online after the sixth week of the current semester. The incentives offered to students for participation varied depending on the school. Some received extra credit in courses, some fulfilled a course requirement in freshmen seminars, and others volunteered without an incentive.

Participants first answered several demographic questions, including their sex, ethnicity, and academic classification. The remaining 20 items were then administered. Students were treated in accordance with the American Psychological Association Guidelines for Ethical Conduct (American Psychological Association, 2010). Approval to conduct the research was also obtained from local Institutional Review Boards.

### Results

The data were analyzed in four stages. First, a principle component analysis was performed on the 11 career integration items in order to find the best set for a scale. After an oblimin rotation, the analysis yielded two factors with eigenvalues greater than 1.0: 4.58 and 1.28 that explained 41.56 and 11.62 percent of the variance,

respectively. A screeplot indicated that there was only one substantial factor, so we focused on it and conducted another principle component analysis on the five highest-loading items. These five items had the following loadings in the final analysis: optimism that training imparts necessary knowledge, 0.83; certainty that training will lead to enjoyable employment, 0.85; likelihood that training will eventuate in preferred job, 0.86; confidence that training will qualify for good-paying job, 0.83; and belief that training imparts necessary skills, 0.85. Scores on these five items were summed to form the Career Integration scale. The internal reliability coefficient ( $\alpha$ ) of the Career Integration scale was 0.90.

In previously-cited modeling studies, Degree Commitment was considered to be an outcome of the integration variables. Therefore, the second stage of the analyses was to calculate the bivariate correlations between Degree Commitment and scores on the three types of integration: Career Integration, r(3258) = 0.42, p < .001; Academic Integration, r(3258) = 0.35, p < .001; and Social Integration, r(3258) = 0.20, p < .001. The direction of the relationships indicated that favorable scores on each type of integration variable were statistically associated with favorable scores on Degree Commitment.

Given the relationship between Career Integration and Degree Commitment, the third stage in the analysis was to examine whether the association existed among both lower-level and upper level students. We calculated correlation coefficients separately for the two groups: lower-level (freshman and sophomores) r(2592) = 0.44, p < .001; upper-level (juniors and seniors) r(666) = 0.38, p < .001.

The bivariate correlations established reliable relationships between Degree Commitment and the three integration variables. The fourth and final stage in the analyses was to determine whether Career Commitment accounted for variance in Degree Commitment that could not be explained by the other two integration variables, which would establish its incremental validity. This was tested with hierarchical regression on Degree Commitment scores. Academic and Social Integration were entered in the first block and Career Integration was entered in the second block. The first block yielded, F(2, 3225) = 251.68, p < .001, R = 0.37,  $R^2 = 0.14$ , and the second block produced, F(3, 3224) = 283.75, p < .001, R = 0.46,  $R^2 = 0.21$ . The change in  $R^2$  from the first block to the second was statistically significant: F(1, 3224) = 301.05, p < .001, R = 0.27,  $R^2 = 0.07$ . Therefore, the regression analysis established the incremental validity of the Career Integration scale. In the full model, the standardized regression coefficients ( $\beta$ ) for the three predictors were 0.18 (Academic Integration), 0.06 (Social Integration), and 0.32 (Career Integration).

#### Discussion

The purposes of the study were achieved. An internally reliable measure of career integration was developed, and its validity was verified. The measure was valuable in exploring and confirming the relationship with students' commitment to earning a degree, with both lower-level students as well as upper-level students. Not only did the results confirm this relationship, but they also affirmed the incremental validity of the measure of career integration after controlling for two other types of renowned integration, academic and social. The findings support the inclusion of the career integration construct in future models of student success and retention.

Several key aspects of the new measure of career integration will be attractive to other researchers in exploring hypotheses about this quality. It is brief, reliable, valid, and easy to administer and score. The Career Integration scale can be used as a standalone index or in combination with measures of many other variables to establish anomological network around college student outcomes of interest.

The results of this study have applied utility for instructors, program administrators, and career counselors. The Career Integration scale validated in this paper enables instructors to assess the extent to which their students perceive compatibility between the course material and their employment objectives. Aggregate data supplied by the Career Integration scale gives administrators an empirical tool for evaluating how effectively this key construct is incorporated into their programs. And career counselors can use scale scores to pinpoint specific areas of dissatisfaction in individual students and address them.

Our findings suggest that concerns over career integration are not restricted to students approaching graduation. Colleges and universities abiding by the results of this investigation would seek to improve the degree commitment and retention of their students by cultivating career integration at the freshman-sophomore as well as the junior-senior levels. Although the correlational methodology of this study does not establish causal relationships between the variables, the results are consistent with causal models that propose degree commitment has direct and indirect relationships with the students' persistence (e.g., Davidson et al., 2015; Robbins et al., 2004).

# References

- American Psychological Association. (2010). Publication Manual of the American Psychological Association (6th ed.). Washington, D.C.: Author.
- Ashar, H., & Skenes, R. (1993). Can Tinto's student departure model be applied to nontraditional students? *Adult Education Quarterly*, 43, 90-100. doi:10.1177/0741713693043002003
- Bean, J. P. (2005). Nine themes of college student retention. In A. Seidman (Ed.), *College student retention formula for student success* (pp. 215-243). Westport, C.T.: American Council on Education and Praeger.
- Braxton, J. M., & Hirschy, A. S. (2005). Theoretical developments in the study of college student departure. In A. Seidman (Ed.), *College student retention formula for student success* (pp. 61-87). Westport, C.T.: American Council on Education and Praeger.
- Braxton, J. M., & Mundy, M. E. (2001-2002). Powerful institutional levers to reduce college student departure. *Journal of College Student Retention: Research, Theory and Practice, 3*(1), 91-118. doi:10.2190/M127-V05B-5E5J-F9LQ
- Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education*, 64(2), 123-138. doi:10.2307/2960026
- Cox, D. W., Krieshok, T. S., Bjornsen, A. L., & Zumbo, B. D. (2015). Occupational engagement scale—S: Development and initial validation. Journal of Career Assessment, 23(1), 107-116. doi:10.1177/1069072714523090
- Davidson, W. B., Beck, H. P., & Milligan, M. (2009). The college persistence questionnaire: Development and validation of an instrument that predicts student attrition. *Journal of College Student Development*, 50(4), 373-389. doi:10.1353/csd.0.0079
- Davidson, W. B., Beck, H. P., & Grisaffe. (2015). Increasing the institutional commitment of college students: Enhanced measurement and test of anomological model. *Journal of College Student Retention: Research, Theory and Practice, 17*(2), 162-185. doi:10.1177/1521025115578230
- Folsom, B., Peterson, G. W., Reardon, R. C., & Mann, B. A. (2005). Impact of career planning courses on academic performance and graduation rate. *Journal of College Student Retention: Research, Theory & Practice, 6*(4), 461-473. doi:10.2190/4WJ2-CJL1-V9DP-HBMF
- Gollwitzer, P. M., & Oettingen, G. (2013). Planning promotes goal striving. In K. Vohs, & R. Baumeister (Eds.), Handbook of self-regulation, research, theory, and applications (pp. 162-185). New York: Guilford Press.
- Grier-Reed, T., & Chahla, R. (2015). Impact of a constructivist career course on academic performance and graduation rates. *Journal of College Student Retention: Research, Theory and Practice, 17*(1), 105-118. doi:10.1177/1521025115571254
- Hirschy, A. S., Bremer, C. D., & Castellano, M. (2011). Career and technical education (CTE) student success in community colleges: A conceptual model. *Community College Review*, 39, 296-318. doi:10.1177/0091552111416349
- Phelps, M. K. (1996). Social integration and career integration: Factors associated with degree completion and time-to-degree in doctoral programs (Unpublished doctoral dissertation, University of Nebraska, Lincoln).

# 376 THE DEVELOPMENT AND VALIDATION OF A MEASURE OF CAREER INTEGRATION

- Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2005). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, *130*(2), 261-288. doi: 10.1037/0033-2909.130.2.261
- Tinto, V. (1993). Leaving college: Rethinking the causes and cures of student attrition (2nd ed.). Chicago, Ill.: University of Chicago Press.
- Vinson, B. M., Reardon, R. C., & Bertoch, S. C. (2014). Career services at colleges and universities: A 30-year replication study. *Journal of College Student Development*, 55(2), 203-207. doi:10.1353/csd.2014.0018