

TLAR  
TLAR  
TLAR  
TLAR  
TLAR  
TLAR  
TLAR

# THE LEARNING ASSISTANCE REVIEW

*Journal of the National College Learning Center Association*



ISSN 1087-0059 | Volume 17 | Number 2 | Fall 2012



## ***About The Learning Assistance Review***

---

---

*The Learning Assistance Review* is an official publication of the National College Learning Center Association (NCLCA). NCLCA serves faculty, staff, and graduate students in the field of learning assistance at two- and four-year colleges, vocational and technical schools, and universities. All material published by *The Learning Assistance Review* is copyrighted by NCLCA and can be used only upon expressed written permission.

### **Editor**

**CHRISTINE REICHERT, M.A.**

**Academic Enrichment Center**

**The University of Toledo Health Science Campus**

**Mail Stop 1046**

**3025 Library Circle**

**Toledo, Ohio 43614**

**Christine.Reichert@utoledo.edu**

### **Lay-out Designer**

**NICHOLE BENNETT-BEALER**

**Managing Editor (In Training)**

**Learning Center**

**Northampton Community College**

**3835 Green Pond Road**

**Bethlehem, Pennsylvania 18020**

## Editorial Board

<b>KIMBERLY BETHEA</b>	<b>UNIVERSITY OF MARYLAND</b>
<b>ROSEANNA ALMAEE*</b>	<b>DARTON COLLEGE</b>
<b>BARBARA BEKIS</b>	<b>UNIVERSITY OF MEMPHIS</b>
<b>NANCY BROWN*</b>	<b>LOURDES COLLEGE, RETIRED</b>
<b>SARA CICCIA</b>	
<b>JUDITH SCHEIN COHEN</b>	<b>UNIVERSITY OF ILLINOIS AT CHICAGO</b>
<b>JASON COTTRELL</b>	<b>VIRGINIA COMMONWEALTH UNIVERSITY</b>
<b>ALAN CRAIG</b>	<b>GEORGIA PERIMETER COLLEGE</b>
<b>JULIAN M. DAVIS</b>	<b>UNIVERSITY OF THE INCARNATE WORD</b>
<b>ANGELA DEANGELO</b>	<b>UNIVERSITY OF TOLEDO</b>
<b>ANDREW DELOHERY*</b>	<b>QUINNIPIAC UNIVERSITY</b>
<b>NICOLE DIEDERICH*</b>	<b>THE UNIVERSITY OF FINDLAY</b>
<b>JOAN DILLON</b>	<b>BLOOMSBURG UNIVERSITY, RETIRED</b>
<b>DEBRA MCLELLAN FETNER</b>	<b>COLLEGE OF CHARLESTON</b>
<b>MICHAEL FRIZELL</b>	<b>MISSOURI STATE UNIVERSITY</b>
<b>SHEILAGH GRILLS</b>	<b>BRANDON UNIVERSITY</b>
<b>SARAH HENDERSON*</b>	<b>MESA COMMUNITY COLLEGE</b>
<b>JAMILAH N. JONES</b>	<b>NORTHWEST STATE COMMUNITY COLLEGE</b>
<b>KATY LEE KEMP</b>	<b>UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE</b>
<b>LOREN KLEINMAN</b>	<b>BERKELEY COLLEGE</b>
<b>CHRIS LACKEY</b>	<b>ILLINOIS STATE UNIVERSITY</b>
<b>ELENA LITVINOVA</b>	<b>BLOOMSBURG UNIVERSITY</b>
<b>GEORGINE LOACKER</b>	<b>ALVERNO COLLEGE</b>
<b>MARCY MARINELLI</b>	<b>UNIVERSITY OF MARYLAND</b>
<b>GERALDINE MARTIN*</b>	<b>WEST CHESTER UNIVERSITY</b>
<b>SAUNDRA MCGUIRE</b>	<b>LOUISIANA STATE UNIVERSITY</b>
<b>CARON MELBLOM-NISHIOKA*</b>	<b>CAL STATE UNIVERSITY DOMINGUEZ HILLS</b>
<b>KELLY A. NORTON*</b>	<b>HIGH POINT UNIVERSITY</b>
<b>DANIEL J. PÉREZ</b>	<b>UT-BROWNSVILLE AND TX SOUTHMOST COLLEGE</b>
<b>JENNIFER PIPPEN</b>	<b>NORTH CENTRAL COLLEGE</b>
<b>WALTER POETZING</b>	<b>OHIO DOMINICAN UNIVERSITY</b>
<b>DAVID REEDY</b>	<b>COLUMBUS STATE COMMUNITY COLLEGE</b>
<b>CHRISTINE REICHERT</b>	<b>UNIVERSITY OF TOLEDO HSC</b>
<b>JOSHUA REID</b>	<b>ILLINOIS STATE UNIVERSITY</b>
<b>CAROL SEVERINO</b>	<b>UNIVERSITY OF IOWA</b>
<b>KATHLEEN SHEPHERD</b>	<b>MONROE COUNTY COMMUNITY COLLEGE</b>
<b>NORMAN STAHL*</b>	<b>NORTHERN ILLINOIS UNIVERSITY</b>
<b>JAN TAYLOR</b>	<b>MARYVILLE COLLEGE</b>
<b>JACK TRAMMELL</b>	<b>R-MC</b>
<b>JACK TRUSCHEL</b>	<b>EAST STROUDSBURG UNIVERSITY</b>
<b>BETH VANRHEENEN</b>	<b>ROCHESTER COLLEGE</b>
<b>DOMINIC J. VOGÉ</b>	<b>UC BERKELEY</b>
<b>CLAIRE ELLEN WEINSTEIN</b>	<b>UNIVERSITY OF TEXAS AT AUSTIN</b>

\* Involved in the production of this issue.

# Contents

---

---

## Letter from the Editor

CHRISTINE REICHERT

5

---

## Breaking Down Barriers: Academic Obstacles of First-Generation Students at Research Institutions

MICHAEL J. STEBLETON AND KRISTA M. SORIA

---

## Evaluating the Effectiveness of Tutoring: An Easier Way

TACY HOLLIDAY

21

---

## Social and Academic Correlates of Reading a Common Book

TIMOTHY K. DAUGHERTY AND MATTHEW W. HAYES

33

---

## *Discovering Focus: Helping Students with ADD (Attention Deficit Disorders)*

JIM VALKENBURG

43

---

## Book Reviews:

### *College study: The essential ingredients*

REVIEWED BY MICHAEL FRIZELL

53

### *From brain to mind: Using neuroscience to guide change in education*

REVIEWED BY MARCY MARINELLI

57

### *Your creative brain: Seven steps to maximize imagination, productivity, and innovation in your life*

REVIEWED BY DEBRA MCLELLAN FETNER

59

---

Pertinent Publishing Parameters

61

---

NCLCA Membership Information

66

---

Membership Application

67

---



## Letter from the Editor

---

---

With great honor and pride—and quite honestly some sadness—I end my six-year tenure as *TLAR* editor. I humbly turn the “editorial torch” to Michael Frizell (incoming editor) and Nichole Bennett-Bealer (incoming managing editor); I am positive *TLAR* will flourish in their capable hands. I vividly remember the exuberance I felt writing my very first letter from the editor. I feel that same excitement now; although, today, it is mixed with such warmth in my heart for all the wonderful people I have met over the years. I have been privileged to talk with you in person, through e-mails, and through this venue (letter from the editor) in each issue.

Please permit me a moment to reminisce! Under my tenure, we streamlined the submission process and made it electronic. We expanded our readership to include international digital access (which delivers full-text and bibliographic research databases to the school, public, academic, medical, corporate and government library marketplace) through partnerships with ERIC, EBSCO, Cabell Directory, ERA, The Gale Group, Summon Discovery Service, and H.W. Wilson Company. I am always honored to present our publication because I know it provides a venue for enthusiastic scholarship that takes a leadership role in determining best practice in our discipline. I am proud to have been a part of *TLAR* and to have continued its excellent tradition of publishing reputable cutting-edge scholarly articles that help direct our profession.

Speaking of this issue, I am—for the last time—introducing you to the slate. The first article, “Breaking Down Barriers: Academic Obstacles of First-Generation Students at Research Institutions,” by Michael J. Stebleton and Krista M. Soria, examines the perceived academic obstacles of first-generation students in comparison to non-first generation students.

Tacy Holliday, NCLCA Board Membership Chair, is sharing some interesting ways learning center administrators can use data to analyze effective tutoring in, “Evaluating the Effectiveness of Tutoring: An Easier Way.”

Timothy K. Daugherty and Matthew W. Hayes in “Social and Academic Correlates of Reading a Common Book,” explore the effectiveness of a common book experience through social and academic lenses.

Finally, NCLCA Board Vice-President Jim Valkenburg presents, “Discovering Focus: Helping Students with ADD (Attention Deficit Disorder),” in which he discusses ideas for helping students adapt to a more effective style of learning.

As part of our introduction of the incoming editor, please read Michael Frizell's book review of Lipsky, S. A. (2013) *College study: The essential ingredients*. We also have two more excellent book reviews with a connective theme: active brain based learning. Marcy Marinelli reviews J. E. Zull (2011), *From Brain to Mind: Using Neuroscience to Guide Change in Education*. Debra McLellan Fetner reviews the book by S. Carson (2010) *Your creative brain: Seven steps to maximize imagination, productivity, and innovation in your life*.

As I close my tenure, I wish to thank all the wonderful folks at NCLCA. I have had a wonderful experience and am confident the new editors will take TLAR giant leaps forward.

A handwritten signature in black ink on a light yellow background. The signature reads "Christine Reichert" in a cursive script.

**Christine Reichert**  
**Editor**



# Breaking Down Barriers: Academic Obstacles of First-Generation Students at Research Universities

MICHAEL J. STEBLETON AND KRISTA M. SORIA  
UNIVERSITY OF MINNESOTA - TWIN CITIES

## Abstract

The purpose of this study was to examine the perceived academic obstacles of first-generation students in comparison to non-first-generation students. Using the Student Experience in the Research University (SERU) completed by approximately 58,000 students from six research universities, the researchers used nonparametric bootstrapping to analyze differences between first-generation and non-first-generation students' obstacles to academic success. The results suggest that first-generation students more frequently encounter obstacles that compromise their academic success as compared to non-first-generation students, such as job responsibilities, family responsibilities, perceived weak English and math skills, inadequate study skills, and feelings of depression. Implications for learning assistance professionals are outlined.

**Keywords:** first-generation; retention; student success; high impact practices; support services

As learning assistance center professionals, tutors, and college educators seek to develop innovative strategies to assist students in meeting their academic goals, they may find value in targeting services to address the distinct needs of historically underserved student populations. One growing population of unique college students—first-generation students—may face challenges related to navigating the maze of higher education. This paper examines some of the academic obstacles faced by first-generation students and describes strategies that learning center practitioners and faculty members can use to assist these students with achieving academic excellence.

A variety of definitions have been used to describe first-generation students in the higher education and college student development literature, and each definition has subsequent consequences for students, institutions, and organizations. The authors of this article defined first-generation status as neither parent having earned a bachelor's degree; the same definition is used by federal TRIO programs and other organizations. In the present study, college students were considered first-generation even if their parents had some post-secondary education and/or an associate's degree.

For more information contact: Michael J. Stebleton | Department of Postsecondary Teaching and Learning | University of Minnesota - Twin Cities| Minneapolis, MN 55455| Email [steb0004@umn.edu](mailto:steb0004@umn.edu)

## Literature Review

The profile of first-generation students comprises certain characteristics. First-generation students are more likely than their non-first-generation counterparts to have additional characteristics that may serve as a disadvantage as they pursue their college education. First-generation students are more likely to be older, come from minority backgrounds, and have a disability (Bui, 2002; Hertel, 1992). Additionally, first-generation students are more likely to be non-native English speakers, immigrants (i.e., born outside of the U.S.), single parents, and financially independent from their parents (Bui, 2002). They tend to have lower levels of academic preparation and frequently need to be employed (often full-time) to help pay for educational and cost-of-living expenses (Jehangir, 2010).

First-generation students tend to have lower graduation rates than their non-first generation peers (Engle & Tinto, 2008). According to Engle and Tinto, "research has shown that low-income and first-generation students are less likely to be engaged in the academic and social experiences that foster success in college, such as studying in groups, interacting with faculty and other students, participating in extracurricular activities, and using support services" (p. 3). These challenges can be exacerbated by enrolling at large, research universities where classes tend to be larger and interactions with faculty members can be infrequent (Kim, 2009).

Although institutions of higher education generally have done a better job of promoting college access to first-generation students, college success as measured by persistence and graduation rates (i.e., retention of first-generation students) continues to be a problem (Engle & Tinto, 2008; Pascarella, Pierson, Wolniak, & Terenzini, 2004). Data from the National Center for Education Statistics' Beginning Postsecondary Study describe the situation for first-generation students in terms of college success. First-generation, low-income students were nearly four times more likely (26% to 7%) to leave higher education after the first year than non-first-generation students (Engle & Tinto, 2008). Six years later, nearly half (43%) of low-income first generation students had left college without earning their degrees. Among those who did not continue, nearly two-thirds (60%) did so after the first year.

First-generation students often face multiple unique barriers to post-secondary success (Jehangir, 2010). For example, first-generation students often bridge two cultures, not feeling a sense of belonging in either one (Oldfield, 2007; Rendón, 1992). Barriers can relate to issues that deal with family, social, cultural, and academic transitions (London, 1989). This lack of belonging or isolation can lead to feelings of depression and loneliness for first-generation students (Lippincott & German, 2007).

Additionally, due to family and work demands, first-generation students tend not to be as academically engaged as their non-first-generation peers (Kuh, 2008). Kuh discovered that first-generation and other historically underserved students tend not to participate in high impact educational practices as frequently as traditional students despite evidence that they benefit from participation on par or even more so than their non-first-

generation peers. These practices include intentional engagement activities such as learning communities, first-year seminars, common book experiences, study abroad opportunities, and other experiences that enhance the undergraduate experience. Some of these experiences, such as learning communities, also promote social engagement since curricular structures tend to be arranged so that students engage often and intensely with their peers (Jehangir, 2009). For first-generation students who may not have the opportunity to participate, this lack of involvement may contribute to additional challenges of establishing close interpersonal connections with other students. For example, Pascarella et al. (2004) noted that first-generation students tend to live off-campus, thereby making it more challenging to establishing relationships via on-campus structures, such as residence halls.

Overall, compared to their peers, first-generation students tend to be at a distinct disadvantage with respect to academic preparation in high school (Pascarella et al., 2004). Warburton, Bugarin, and Nuñez (2001) reported that first-generation students were less academically prepared and were less likely to complete AP credits in high school compared to non-first-generation students. Hellman and Harbeck (1997) also discovered that first-generation students have lower self-images of their academic ability than second-generation students. Several additional indicators point to the potential for first-generation students to experience problematic transitions to higher education. Jenkins, Miyazaki, and Janosik (2009) noted that many first-generation students enter college with inadequate academic preparation, largely due to the fact that first-generation students are less likely to enroll in college preparatory curriculum in high school. Indeed, in their study, they found that many first-generation students needed more remedial work on some areas than non-first generation students, were less confident in their academic ability and readiness of college-level work, and also were more likely to avoid asking questions or seeking help from faculty.

## **Method**

In the context of the multiple issues surrounding first-generation students' academic preparation, motivation, and initiative in higher education, this paper seeks to determine students' self-assessment of potential academic obstacles to their academic achievement. Knowing that attendance at large, public research universities may contribute to more isolating experiences for students—especially when it comes to accessing learning center resources and seeking assistance from tutors or faculty—the authors explored the experiences of students who attended six large, public research universities. Specifically, one of the objectives of the study was to ascertain whether first-generation students experience significantly different academic obstacles in comparison to their non-first-generation peers. The central research question is as follows:

What are the differences between first-generation and non-first-generation students in terms of their self-perceived barriers to academic success?

## **Instrument**

The Student Experience in the Research University (SERU) survey is based at the Center for Studies of Higher Education (CSHE) and is administered by the Office of Student Research and Campus Surveys at the University of California-Berkeley. The SERU survey sampling plan is a census scan of the undergraduate experience. All undergraduates enrolled during spring 2009 who also were enrolled at the end of the prior term are included in this web-based questionnaire, with the majority of communication occurring by electronic mail.

The SERU survey contains approximately 600 items depending on the assigned module and each institution's specific questions. Each student answers a set of core questions and is randomly assigned one of four modules containing items focused specifically on a research theme. The core questions focus on time use, evaluation of a student's major, campus climate and satisfaction. The four thematic research areas on the SERU include the following: academic engagement, community and civic engagement, global knowledge and skills, and student life and development.

The variables in this study are drawn from demographic items and items from one of the survey modules related to students' self-perceived obstacles to academic success. Students were randomly assigned to answer questions in the module, with 20% of students randomly assigned to answer the following question from the module:

During this academic year, how often have each of the following been obstacles to your school work or academic success?

- Competing job responsibilities (e.g., paid employment)
- Competing family responsibilities
- Other competing responsibilities (e.g., athletics, clubs, internship)
- Weak English skills
- Weak math skills
- Inadequate study skills (e.g., knowing how to start, knowing how to get help, organizing material)
- Poor study behaviors (e.g., wait until last minute, easily distracted, too much social time, too much web surfing)
- Bad study environment (e.g., noisy roommate, poor Internet access, inadequate computer or software)
- Feeling depressed, stressed, or upset
- Physical illness or condition

## **Participants**

The survey was administered in the spring of 2009 to 145,150 students across six large, public universities classified by the Carnegie Foundation as having very high research activity. The institutional level response rates varied from 26% to 69%, for an overall response rate of 39.97% ( $n =$

58,017). Between 12,097 and 12,161 students completed the module that included the items above. Approximately 58.2% of the participants were female, 60.1% White, 17.9% Asian, 7.7% Chicano-Latino, 5.8% African American, 5.1% other race/unknown, and 2.9% International. Additionally, 26.4% of the module respondents were first-generation students.

## **Analysis**

To determine whether differences exist between first-generation and non-first-generation students, the assumptions of normality and homogeneity of variance for the academic and social integration factors were tested. The results of the study showed that the Kolmogorov-Smirnov tests were significant ( $p < .05$ ), suggesting non-normal distributions; however, in large samples, this test can be significant even if the data are only slightly non-normal (Field, 2009). In examining the histograms and Q-Q plots, evidence was found for slight skewness in several of the factors. Additionally, the assumption of homogeneity of variance was violated in each of our computations (Levene's tests were significant [ $p < .05$ ]); thus, nonparametric bootstrapping was used to analyze our data, as nonparametric bootstrapping makes no assumptions about the probability model underlying the population and uses the observed sample data as a proxy for the population distribution. Monte Carlo  $p$ -values were computed by drawing 1,000 random bootstrap replicates of the data, with replacement, using a correction suggested by Davison and Hinkley (1997). Table 1 demonstrates Student's  $t$ -statistic, the standard errors of the bootstrapped mean differences, the nonparametric bootstrap 95% confidence intervals (using 1,000 replicates) for the mean differences, and standardized effect sizes as measured by Cohen's  $d$ .

## **Results**

### *Obstacles to Academic Success*

Differences between first-generation and non-first-generation students were statistically significant on several factors. First-generation students reported statistically significant ( $p < .05$ ) higher instances of the following factors as obstacles to their academic success: Competing job responsibilities; Family responsibilities; Weak math skills; Weak English skills; Inadequate study skills; and Feeling depressed, stressed, or upset (see Table 1). The only measure on which first-generation students had statistically significant ( $p < .05$ ) lower means than non-first-generation students was in the category of Other competing responsibilities. The size of the effects in most cases was relatively small, although Competing job responsibilities ( $d = -.27$ ) and Competing family responsibilities ( $d = -.32$ ), in addition to Weak English skills ( $d = -.19$ ) and Weak math skills ( $d = -.18$ ), and Inadequate study skills ( $d = -.20$ ) had modest effect sizes, suggesting those differences are larger and hold potentially greater impact for practitioners. Although not statistically significant, results showed that first-generation students had higher mean scores on all other items (save for Other competing responsibilities), suggesting that, overall, first-generation students experience greater obstacles

to their academic success than their non-first-generation peers. Further analyses of these trends are warranted to determine whether differences achieve statistical significance among different populations of undergraduates.

## Discussion

The results suggest that first-generation students more frequently encounter specific obstacles that compromise their academic success as compared to non-first-generation students. The largest differences occur in regards to the following items: Competing job responsibilities, Competing family responsibilities, Weak English skills, Weak math skills, Inadequate study skills, and Feeling depressed, stressed, or upset. As such, these factors are more likely to negatively impact first-generation students than non-first-generation students when considering their academic achievement in higher education.

Several of these factors likely compound upon one another, presenting several obstacles to first-generation students at the same time. For example, first-generation students may have both job and family responsibilities in addition to weak study skills—factors that, when combined, may cause even greater challenges to reaching their goals (Engle & Tinto, 2008). One can argue that first-generation students who attend large research universities experience these obstacles more frequently than first-generation students at smaller institutions (e.g., liberal arts colleges) due to the size of the universities. Learning assistance staff, tutors, and other educators (including faculty members) can benefit from an awareness of these challenges that first-generation students encounter (Arendale, 2010). Moreover, these professionals must reach out to first-generation students and help them to reach their personal and professional objectives.

First-generation students often enter college with perceived obstacles to their success (Jehangir, 2010). These feelings frequently are based on previous negative experiences (e.g., concerns about Math or English skills; study skills). Learning assistance professionals and other educators should be reminded that these are common barriers to success for first-generation students—both at the first-year and beyond. In other words, first-generation students often recognize and acknowledge that they will need assistance to address the outlined barriers to academic success. Richardson and Skinner (1992) noted that “all first-generation students are uncertain climbers” (p. 41). Additional programs, services, and structures are often needed to help students reduce the size of each step during the adjustment to the post-secondary education experience. In turn, this added support will help first-generation students feel a greater sense of control and responsibility during the college transition.

Padron (1992), in his analysis of Miami-Dade Community College (MDCC) students, stated that first-generation students often possess an external locus of control, placing blame on external situational factors that may impact academic outcomes rather than assuming personal responsibility. He also indicated that additional academic advising and tutorial services often are needed to help first-generation students become more successful. Engle

Table 1

*Differences in Obstacles to Academic Success Between First-Generation and Non-First Generation Students*

Factor	First-Generation		Non-First-Generation		t	SE (95% CI)	d
	n	M (SD)	n	M (SD)			
Competing job responsibilities	3276	2.42 (1.35)	8877	2.08 (1.24)	-12.83***	0.07 [-0.38, -0.32]	-0.27
Competing family responsibilities	3281	2.58 (1.19)	8854	2.23 (1.07)	-15.91***	0.06 [-0.40, -0.30]	-0.32
Other competing responsibilities	3272	2.48 (1.14)	8875	2.60 (1.12)	5.53*	0.05 [0.01, 0.12]	0.11
Weak English skills	3276	1.35 (0.64)	8872	1.21 (0.81)	-7.43***	0.03 [-0.16, -0.10]	-0.19
Weak math skills	3261	1.75 (1.02)	8836	1.58 (0.91)	-8.25***	0.04 [-0.21, -0.13]	-0.18
Inadequate study skills	3272	2.40 (1.11)	8850	2.18 (1.05)	-7.84***	0.05 [-0.26, -0.17]	-0.20
Poor study behaviors	3270	2.96 (1.15)	8852	2.89 (1.14)	-2.97	0.05 [-0.11, -0.02]	-0.05
Bad study environment	3254	2.62 (1.07)	8857	2.54 (1.04)	-3.70	0.06 [-0.12, -0.03]	-0.07
Feeling depressed, stressed, or upset	3275	2.83 (1.12)	8865	2.68 (1.10)	-3.62**	0.05 [-0.19, -0.11]	-0.14
Physical illness or condition	3274	2.06 (0.95)	8887	2.00 (0.91)	-3.33	0.04 [-0.10, -0.03]	-0.07

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Scale: 1 - 5 ("not at all" to "all the time")

and Tinto (2008) offered other suggestions for educators, including learning assistance practitioners. These broad recommendations that institutional educators can take to assist first-generation students included the following: easing the transition to college; encouraging engagement on the college/university campus, and promoting (re)entry for young and working adults. The authors (Engle and Tinto) further recommended that the transition to college can be eased through targeted advising, tutoring, and mentoring by faculty and peers. Peer mentoring programs have demonstrated to be effective with first-generation students and other historically underserved student groups, often pairing upper-class students with entering first-year students (Crisp & Cruz, 2009; Strayhorn & DeVita, 2010; Wilson & Arendale, 2011). Other initiatives have included intensive Summer Bridge programs as well as other targeted outreach programs such as TRIO and McNair Scholars initiatives.

For experienced learning assistance professionals, these challenges of first-generation students likely will not come as a surprise. As indicated by the work of Pascarella and Terenzini (2005), first-generation students experience college differently than non-first-generation students, and they often face additional barriers to success. What can be done to address the unique needs, issues, and obstacles experienced by first-generation students? Based on the findings of the study, the following additional recommendations are offered for tutors, peer educators, faculty members, and other student affairs practitioners who interact with first-generation students.

First, learning assistance professionals should be aware of initiatives on their campuses that offer opportunities for academic and social engagement. This includes a range of options of high impact educational practices. Staff can highlight and recommend learning community options to first-generation students (e.g., some programs are targeted to first-generation students or focus on a specific area such as writing or speaking skills). By participating in these types of initiatives, first-generation students may gain confidence in areas that may be perceived as a barrier to success (Jehangir, Williams, & Pete, 2011).

Second, a key finding addresses the issue of weak English skills as an obstacle to success. A growing number of first-generation students are also immigrant students (including recent and second generation status immigrants). Although the scope of this article does not allow for an extensive discussion of immigrant student issues, learning assistance professionals should be reminded that immigrants often face a myriad of complex obstacles and transitions to college (Gildersleeve, 2010; Stebleton, Huesman, & Kuzhabekova, 2010), including but not limited to concerns about English communication skills.

Third, learning center staff and other educators can consider engaging students in discussions related to their first-generation student experience. When working with students who may be struggling in terms of academic confidence, staff can ask students if they are the first in the family to attend college and encourage a dialogue focused on common concerns faced by first-generation students. First-generation students may feel a cultural,



social, and emotional disconnect from campus life, as they often cannot turn to family members to receive guidance navigating a potentially disorienting experience. As such, learning center professionals should not assume that students are knowledgeable about the services they offer and should be proactive in reaching out to this population.

Fourth, first-generation students may experience a constant feeling of alienation on campus. The imposter syndrome, well-researched in the academy (Brookfield & Preskill, 1999; Jensen, 2004; Megivern, 2003), is a dissociative state in which estranged first-generation students may never feel confident, grounded, or socially connected to their academic experiences on campus. Learning center staff, tutors, and peer tutors can take extra measures to help first-generation students to feel like they belong on campus, that they are genuine members of campus life who can achieve academic success. For example, learning center staff who were first-generation students themselves should consider serving as mentors to first-generation students, relating their experiences and serving as an example of one who *made it*. In addition to providing assistance with mastering academic subjects, learning centers can assist first-generation students with building confidence and developing strategies to increase their confidence and self-efficacy. Fostering long-term relationships and communications (e.g., through a monthly newsletter or email to students), congratulating students on their successes in formal ways (e.g., end of the semester celebrations or official events such as Dean's list receptions), involving family members in acknowledgement ceremonies and rituals, and supporting students as they cross important milestones (e.g., from their first year to second year) are all ways in which learning centers can support first-generation students (Magolda, 2000).

Finally, learning assistance professionals are encouraged to be aware of challenges related to students' mental health concerns. Daddona (2011) noted that issues related to students' mental health are an ongoing concern; the prevalence and severity of mental health concerns is well documented (Kadison & DiGeronimo, 2004; Kitzrow, 2009). Furthermore, Daddona outlined several strategies for peer educators who interact with undergraduate students, including advice on how to make effective referrals to students who may need psychological services. It is important that learning assistance professionals (including peer educators) possess strong communication skills, and fully understand the campus counseling services and resources available to students; this suggestion can be especially relevant for first-generation students. Educators should be aware of multicultural issues related to counseling and that there may be resistance and/or stigma about seeking out help for mental health concerns. From this perspective, learning assistance professionals become invaluable "brokers" of the other resources on campus that can best serve first-generation students. In sum, learning assistance professionals and educators who work with first-generation students can play a meaningful role in helping first-generation students to be more successful and reach their academic and personal goals.

## Limitations and Suggestions for Future Research

The generalizability of this study is limited because it explores first-generation and non-first-generation students at a single institutional type—large, public research universities. As a result, we recommend further work on to include multiple institutional types. Additionally, while the purpose of this study was to examine differences between first-generation and non-first-generation students only, a future study could consider a control for additional variables to determine whether the differences observed covary with other factors that remain present while controlling for other variables (e.g., gender, immigration, and socioeconomic differences) among students that may influence first-generation students' self-perceived obstacles to success. An additional limitation includes self-reported data on large surveys that rely on student responses (Porter, 2009). Related to this limitation, it should be noted that the SERU was conducted during the spring semester; it was possible that some first-year, first-generation students may have stopped out after the first semester. The SERU was a census survey, so all student responses are combined (i.e., first-year to senior year). Future studies may pursue an analysis of responses by year in college. Finally, we encourage scholars interested in this area to pursue qualitative studies that explore the lived experiences of first-generation students to learn more about their journeys towards higher education success.

As Engstrom and Tinto (2008) wrote about first-generation learners: "Access without support is not opportunity" (p. 46). The number of first-generation students pursuing 4-year degrees likely will continue to increase. Learning assistance practitioners and those who engage students in developing academic success strategies are in an ideal position to help address the unique needs and challenges of first-generation students. Awareness of self-perceived obstacles to academic success is vital to students and the educators that serve them. In this study, we identified several key obstacles that first-generation students often face at large research universities and suggested several strategies to help promote academic engagement and success. First-generation students can learn to rely on the support from committed learning assistance professionals to help them be successful as they strive towards their academic and personal objectives.

## References

- Arendale, D. R. (2010). *Access at the crossroads: Learning assistance in higher education (Vol. 35)*. San Francisco, CA: Jossey-Bass.
- Brookfield, S., & Preskill, S. (1999). *Discussion as a way of teaching: Tools and techniques for democratic classrooms*. San Francisco, CA: Jossey-Bass.
- Bui, K. V. T. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education, and first-year experiences. *College Student Journal, 36*, 3-11.
- Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the literature between 1990 and 2007. *Research in Higher Education, 50*, 525-545.

- Daddona, M. F. (2011). Peer educators responding to students with mental health issues. *New Directions for Student Services*, 133, 29-39.
- Davison, A., & Hinkley, D. V. (1997). *Bootstrap methods and their application*. New York, NY: Cambridge University Press.
- Engle, J., & Tinto, V. (2008). *Moving beyond access: College for low-income, first-generation students*. Washington, DC: The Pell Institute. Retrieved May 11, 2011, from [http://www.pellinstitute.org/files/COE\\_MovingBeyondReport\\_Final.pdf](http://www.pellinstitute.org/files/COE_MovingBeyondReport_Final.pdf).
- Engstrom, C., & Tinto, V. (2008). Access without support is not opportunity. *Change*, 40(1), 46-50.
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). Los Angeles, CA: Sage.
- Gildersleeve, R. E. (2010). *Fracturing opportunity: Mexican migrant students and college-going literacy* (Vol. 362). New York, NY: Peter Lang.
- Hellman, C. M., & Harbeck, D. J. (1997). Academic self-efficacy: Highlighting the first-generation student. *Journal of Applied Research in the Community College*, 4, 165-169.
- Hertel, J. (1992). College student generational status: Similarities, differences, and factors in college adjustment. *The Psychological Record*, 52, 3-18.
- Jehangir, R. (2009). Cultivating voice: First-generation students seek full academic citizenship in multicultural learning communities. *Innovative Higher Education*, 34(1), 33-49.
- Jehangir, R. R. (2010). *Higher education and first-generation students: Cultivating community, voice, and place for the new majority*. New York, NY: Palgrave Macmillan.
- Jehangir, R., Williams, R. D., & Pete, J. (2011). Multicultural learning communities: Vehicles for developing self-authorship in first-generation college students. *Journal of the First-Year Experience & Students in Transition*, 23(1), 53-74.
- Jenkins, A.L., Miyazaki, Y., & Janosik, S.M. (2009). Predictorsthat distinguish first-generation college students from non-first generation college students. *Journal of Multicultural, Gender and Minority Studies*, 3(1), 1-9.
- Jensen, B. (2004). Across the great divide: Crossing classes and clashing cultures. In M. Zweig (Ed.), *What's class got to do with it?* (pp. 168-184). Ithaca, NY: Cornell University Press.
- Kadison, R., & DiGeronimo, T. F. (2004). *College of the overwhelmed: The campus mental health crisis and what to do about it*. San Francisco, CA: Jossey-Bass.

- Kim, E. (2009). Navigating college life: The role of student networks in first year adaptation college adaptation experience of minority immigrant students. *Journal of the First Year Experience and Students in Transition*, 21(2), 9-34.
- Kitzrow, M. A. (2009). The mental health needs of today's college students: Challenges and recommendations. *NASPA Journal*, 46, 646-660.
- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Washington, DC: Association of American Colleges and Universities.
- Lippincott, J. A., & German, N. (2007). From blue collar to ivory tower: Counseling first-generation, working-class students. In J. A. Lippincott & R. B. Lippincott (Eds.), *Special populations in college counseling: A handbook for mental health professionals* (pp. 89-98). Alexandria, VA: American Counseling Association.
- London, H. B. (1989). Breaking away: A study of first-generation college students and their families. *American Journal of Education*, 97, 144-170.
- Magolda, P. M. (2000). The campus tour: Ritual and community in higher education. *Anthropology and Education Quarterly*, 31, 24-46.
- Megivern, D. (2003). Not by myself alone: Upward bound with family and friends. In V. C. Adair, & S. L. Dahlberg (Eds.), *Reclaiming class*. Philadelphia, PA: Temple University Press.
- Oldfield, K. (2007). Humble and hopeful: Welcoming first-generation poor and working-class students to college. *About Campus*, 11(6), 2-12.
- Padron, E. J. (1992). The challenge of first-generation college students: A Miami-Dade perspective. *New Directions for Community Colleges*, 80, 71-80.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (Vol. 2). San Francisco, CA: Jossey-Bass.
- Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students. *Journal of Higher Education*, 75, 249-284.
- Porter, S. (2009, Nov.). *Do college student surveys have any validity?* Paper presented at the Association for the Study of Higher Education, Vancouver, BC.
- Rendón, L. I. (1992). From the barrio to the academy: Revelations of a Mexican American "scholarship" girl. In L. S. Zwerling & H. B. London (Eds.), *First-generation students: Confronting the cultural issues* (New Directions for Community Colleges Series, No. 80, pp. 55-64. San Francisco, CA: Jossey-Bass.

- Richardson, R.C., & Skinner, E.F. (1992). Helping first-generation minority students achieve degrees. In L.S. Zwerling & H.B. London (Eds.), *First-generation students: Confronting the cultural issues* (New Directions for Community Colleges Series, No. 80, pp. 29-43). San Francisco, CA: Jossey-Bass.
- Stebbleton, M. J., Huesman, R. L., Jr., & Kuzhabekova, A. (2010). *DO I BELONG HERE? Exploring immigrant college student responses on the SERU survey Sense of Belonging/Satisfaction factor*. CSHE Research and Occasional Paper Series 13.10. Berkeley, CA: University of California-Berkeley, Center for Studies in Higher Education. Retrieved October 13, 2010, from <http://cshe.berkeley.edu/publications/docs/ROPS.Stebbleton%20et%20al.ImmigrantStudents.9.14.10.pdf>
- Strayhorn, T. L., & DeVita, J. M. (2010). African American males' student engagement: A comparison of good practices by institutional type. *Journal of African American Studies, 14*, 87-105.
- Warburton, E. C., Bugarin, R., & Nunez, A. (2001). *Bridging the gap: Academic preparation and post-secondary success of first-generation students* (No. 2001-153). Washington, D.C.: National Center for Educational Statistics.
- Wilson, W. L., & Arendale, D. R. (2011). Peer educators in learning assistance programs: Best practices for new programs. *New Directions for Student Services, 133*, 41-53.



# Evaluating the Effectiveness of Tutoring: An Easier Way

---

TACY HOLLIDAY  
MONTGOMERY COLLEGE  
Abstract

**Many learning center administrators understand the need to evaluate the effectiveness of their tutoring programs, but they do not have much free time to design and conduct meaningful research. This article presents a method of evaluation that can be used to determine whether students were able to demonstrate understanding after a tutoring interaction. The method takes little time and is easily customized to the unique needs of different learning centers and tutoring programs. Learning center administrators can use data they collect to analyze whether effective tutoring is taking place for one or many tutors and academic subjects.**

Learning center administrators need to understand and demonstrate positive tutoring outcomes in order to successfully advocate for learning assistance in higher education. This is especially critical in times where resource allocation decisions are prompted by dwindling budgets. Tutoring has become an increasingly effective tool for academic support in the last 25 to 30 years (Falchikov, 2001). Many colleges and universities across the United States currently offer tutoring (Munley, Garvey, & McConnell, 2010); however, research about the effectiveness of tutoring has not kept pace with the widespread use of tutoring (Harootunian & Quinn, 2008; Munley et al.). Although the need to improve evaluation is clear, there are challenges to conducting such research.

Some of the challenges to conducting research are based on the complex nature of tutoring because many variables are involved in the tutoring interaction. Variables include the age and knowledge difference between tutor and student (Roscoe & Chi, 2007), approach used by the tutor (Harootunian & Quinn; King, 1998), amount and kind of tutor training (Fuchs, Fuchs, Bentz, Phillips, & Hamlett, 1994; Fuchs et al., 1997), gender of tutor and student (Munley, Garvey, & McConnel, 2010), and cultural differences (Okawa, Fox, Chang, Windsor, Chavez, & Hayes, 2010). Tutoring by its very nature involves asking questions, assessing the student, explaining material, offering positive reinforcement, and criticizing constructively (Roscoe & Chi, 2007; VanLehn, Siler, Murray, Yamuchi, & Baggett, 2003). Emphasizing one of the approaches over another can also change the tutoring dynamic.

For example, a tutor who primarily explains the material to a student creates a different interaction than a tutor who asks leading questions to guide the student to discover the answer.

Another critical challenge to conducting research has to do with competing demands on the resources of those on the front lines of tutoring services, such as college learning center administrators and tutors. Learning center staff members may not have the personnel or time to undertake a demanding study, or they may not have the training or interest in research methodologies and statistical analysis. The purposes of this article are to present an easy-to-implement measure of tutoring effectiveness and to share the results of a study conducted using this measure.

### **Context of the Study**

The positive outcomes of peer tutoring on student learning are supported by evidence from a study of a Lehigh University program (Munley, Garvey, & McConnel, 2010). The researchers at Lehigh University examined how the number of hours of participation in tutoring affected class grade. The results indicated about ten hours of tutoring during a semester was the amount of tutoring needed for students to have a positive grade change equivalent to a plus or minus from their GPA at the beginning of the semester (e.g., B to B+). Achieving an increase of one full letter grade required 20 hours of tutoring over the course of the semester (e.g., C to B).

Although studies like the one at Lehigh University provide data to support that learning center administrators can use in structuring their tutoring programs and advocating for their programs with administrators, carrying out such large scale research can be daunting. For example, the researchers working on the Lehigh University study used nearly 14,000 observations and collected data detailing the average GPA, class grade, and number of tutoring hours, gender, SAT score, and credit enrollment hours of student participants (Munley, Garvey, & McConnel, 2010). The researchers were all University professors, a job that is often structured to be more conducive to research and publishing compared with many learning center administrator job descriptions. Therefore, this type of data collection may be out of reach for an already busy learning center administrator.

Another study compared two groups (with and without tutoring) for the posttest scores and length of time to complete the assessment. The students who were not tutored took almost twice as long to solve the problems than students who did receive tutoring. However, the total scores were not significantly different between the two groups (Merrill, Reiser, Merrill, & Landes, 1995).

A third experiment incorporating the pretest-posttest design paired students with tutors and randomly assigned the pairs to one of three groups: (a) having questions and scripts to guide the tutoring session, (b) having questions but no scripts, and (c) having no questions or scripts (Ismail & Alexander, 2005). The 48 participants engaged in tutoring for seven 20-minute sessions. Students were assessed before any tutoring took place

(pretest score), and after each session (posttest score). A series of repeated measures analyses of variance (ANOVA) was used to analyze the data. The pairs in group (a) and group (b) scored higher than group (c) on a test of how well the learning was remembered.



Although most of the research on tutoring effectiveness has focused on outcomes, some studies have been done focused on the process of tutoring (Roscoe & Chi, 2007). Process-focused studies of tutors have focused on the communication between the tutor and the student (Graesser, Person, & Magliano, 1995; Roscoe & Chi, 2007). Graesser et al. described the general format of a tutoring interaction as comprised of five steps after initial contact has been made between the tutor and student: (1) tutor asks a question, (2) student answers, (3) tutor gives feedback, (4) tutor provides elaboration, and (5) tutor provides additional feedback as needed. The fourth step—providing elaboration is, primarily, where much of the variability within tutoring can be found. Tutors help students to bridge gaps in understanding by providing explanations to communicate concepts and relationships, to correct students' mistakes, and reinforce students' gains in understanding. The tutor can do most of the explaining, or the tutor and student can communicate in a back-and-forth pattern, building a shared understanding out of their dialogue (Roscoe & Chi, 2007). Studies showed students earned significantly higher test scores when they worked with tutors who used a back-and-forth pattern of knowledge-building, rather than when they were primarily on the receiving end of verbal interactions (Fuchs et al., 1997; Ismail & Alexander, 2005).

Research has also shown various approaches work better in distinctive settings and requiring too much structure can detract from the flexibility needed by the tutor to meet students' needs (Ismail & Alexander, 2005). Customized tutoring has been shown to significantly increase students' learning and motivational outcomes (Merrill, Reiser, Merrill, & Landes, 1995). Merrill et al. noted successful tutors focused on helping students reduce frustration and increase efficacy by guiding the students to correct their own mistakes. Tutors also aided students by offering words of encouragement to the students. The tutor's ability to productively modify feedback, based on the context of the interaction, such as familiarity with the student or type of problem-solving scenario, was also suggested as a key component of effective tutoring (Merrill et al. 1995).

## Method

The study was designed to assess whether tutoring was effective. To examine the effectiveness of tutoring, the purpose of the study was to determine whether a relationship existed between tutoring and student learning. The goals in the research design process were to minimize the amount of recordkeeping while still obtaining meaningful data. Because of the challenges posed by the complexity of tutoring and the resources needed to conduct studies similar to those previously presented, this study focused on the immediate result of tutoring, which was classified in one of two ways: (a) either learning had occurred, or (b) learning had not occurred. Student learning was operationally defined as being able to do something correctly

after working with a tutor the student could not do correctly before working with the tutor. The demonstration of learning was (a) correctly solving a problem, (b) correctly explaining a concept, or (c) correctly applying a previously unclear or incorrect concept.

## Research Question and Hypotheses

The study examined the following three research questions and hypotheses:

### Research question 1:

Is there a relationship between tutoring and student learning?

Hypothesis 1 (H1): A relationship exists between tutoring and student learning.

### Research question 2:

Is there a relationship between tutoring and student learning for each tutor?

Hypothesis 2 (H2): A relationship exists between tutoring and student learning for each tutor.

### Research question 3:

Is there a relationship between tutoring and student learning for each course that was tutored?

Hypothesis 3 (H3): A relationship exists between tutoring and student learning for each course tutored.

The null hypothesis for each of these questions was no relationship between the variables.

## Participants

The participants in the study were community college students who received tutoring and the five tutors working at the learning center serving students enrolled in science courses during the summer session when the study was conducted. Each tutor provided at least 20 hours per week of tutoring. Three tutors were full time staff members and two tutors were peer tutors. Experience levels varied between one year and ten years. All tutors were certified by the College Reading and Learning Center Association as Level 2 tutors.

A convenience sample of students was used. The students who sought tutoring were all freshmen or sophomore students ranging in age from 18 to 50 years of age. Students were enrolled in one or two natural science courses during the first summer session. All students utilizing the services of a tutor during the first summer session, running six weeks, were counted in the study. The number of distinct students participating in tutoring was not recorded due to the complications in record-keeping. For example, one student may work with a number of tutors on separate days during the timeframe of the study. The research was conducted during the busier of the two summer sessions offered at the community college. This timeframe was chosen so the evaluation measure utilized by this study could be tried initially at a time when the tutors would not be as inundated with students

as anticipated during the fall or spring semesters. This was done so that the learning center administrator would get the results of the study during the least busy time of the year and would then have time to write something for publication. The measure is being used in fall and spring semesters.

## Measures

To determine whether learning had occurred, a simplified version of a pretest, posttest modality was utilized. Rather than calculating a pretest and posttest score, as some of the previous research mentioned earlier, the pretest and posttest conditions were treated as categorical variables of (a) cannot demonstrate understanding, or (b) can demonstrate understanding. The pretest condition happened when the student was unable to solve a specific problem or did not understand a specific concept. The student sought tutoring because the student could not demonstrate understanding. The posttest condition was measured as either the student could still not demonstrate understanding (learning had not occurred), or the student could demonstrate understanding (learning occurred). Learning occurred if the student could correctly solve the problem, explain a concept, or apply a concept, depending on the type of question that the student had. For example, a chemistry student who needed help learning how to rearrange the variables in an equation to solve a thermochemistry problem would demonstrate understanding by successfully rearranging the variables in the equation to get the right answer. A biology student who was unclear about the phases of mitosis could demonstrate understanding by correctly identifying the phase of mitosis corresponding to a picture of a cell.

Once an operational definition of student learning, and therefore effective tutoring, was established, an operational definition was needed for the tutoring interaction. The feedback and dialogue between student and tutor was one of the factors that distinguish tutoring from lecturing (Graesser, Person, & Magliano, 1995). However, the research would be impractical if a tutor spent many hours with a student engaged in dialogue to ensure the student was well versed on all the nuances of a particular question before testing to see if the student could demonstrate understanding. To counteract this tendency to ensure the student could demonstrate understanding by tutoring in a way that was not normal procedure for the tutor, a tutoring interaction was defined as the following process: (a) the student asked a question or indicated help was needed; (b) the tutor clarified the question or need; (c) the tutor explained what was needed to fill in the gap in the student's understanding; (d) the tutor gave the student the opportunity to demonstrate understanding. The tutor was allowed to use the feedback from the student to repeat (c) and (d) one more time if needed to better customize the tutoring to the student's needs. If the student demonstrated correct understanding before or at this point, the tutor placed a check mark on the evaluation sheet under the column indicating the student had demonstrated learning (See Appendix). If the student approached the tutor at a later time to ask the same or a very similar question, or if the student still made a mistake in demonstrating understanding, the tutor marked learning had not occurred and tutoring was not effective. The checkmark was placed in the row corresponding to the course pertaining to the question (e.g., organic chemistry).

## Procedure

Tutors were instructed in the operational definitions of student learning and tutoring interactions as mentioned above. Tutors were told to classify each time they worked with a student as effective or not effective based on that criteria. The process was initiated by a student self-identifying as not understanding something or needing help from a tutor. Students either approached the tutor for help, or the tutors circulated around the learning center offering help. Using the operational definition of the tutoring interaction, tutors worked with students and kept track of the outcome on the tutor evaluation form as mentioned in the previous section.

One concern was students might be anxious about the record-keeping, so tutors were told to explain, if needed, that they were examining how effective the tutoring was and they were keeping track of how many questions were asked for each course. They were told to reassure the students all information would be kept anonymous. Only three students asked because the record-keeping was unobtrusive. Also, most students were already used to some record-keeping required by the learning center such as checking in to use the center and noting the purpose of the visit.

## Data Analysis

The variables assessed in the study were tutoring interaction and student learning. These variables were used to assess tutoring effectiveness. The data was analyzed using the Chi-square goodness of fit test, a nonparametric measure commonly reported in journal articles for determining a relationship between nominal variables (Key, 1997). This test determined whether a statistically significant difference in outcomes of a sample existed rather than it being due to chance. If the change in outcomes in this study was due to chance the number of times students were able to demonstrate understanding would be equal to the number of times students were unable to demonstrate understanding after interacting with the tutor. If the outcomes were not statistically equal, then a relationship between the variables could be posited. The data was analyzed using a free online calculator (Preacher, 2001). Another online Chi-square goodness of fit calculator could be used.

## Results

The data was examined from the following perspectives: (a) totals for all tutoring interactions. (b) totals by tutor, and (c) totals by course.

### Results for Research Question 1

To determine whether more students could demonstrate understanding after tutoring than predicted by chance, the frequency of observations where students could demonstrate understanding after tutoring and the frequency of observations where students could not demonstrate understanding after tutoring were analyzed with a Chi Square goodness of fit test. The results were significant,  $\chi^2(1, N = 1756) = 1195.68, p < .0001$ . Students demonstrated understanding significantly more often than not after they received tutoring.

## Results for Research Question 2

To determine whether more students could demonstrate understanding after tutoring for each tutor than predicted by chance, a Chi Square goodness of fit was conducted for each tutor in the same way as described for Research Question 1. The results were significant for each tutor (See Table 1)

Table 1

*Effective Tutoring Outcomes by Tutor*

Tutor	Yes	No	$\chi^2$	$p$
Tutor 1	279	105	77.94	<.0001
Tutor 2	844	33	748.12	<.0001
Tutor 3	343	1	338.02	<.0001
Tutor 4	55	5	40.2	<.0001
Tutor 5	248	28	173.78	<.0001

Each tutor's students demonstrated understanding significantly more often than not after tutoring.

## Results for Research Question 3

To determine whether more students could demonstrate understanding after tutoring for each course than predicted by chance, a Chi Square goodness of fit was conducted for each course. Two courses were omitted from consideration, Physics 1 and Microbiology, because they had only two tutoring instances. The results were significant for all courses (See Table 2).

Students in each science course demonstrated understanding significantly more frequently than not after they received tutoring.

### Discussion

The statistical analyses supported the alternate hypotheses for the research questions: a relationship exists between tutoring and student learning for (a) total tutoring observations, (b) for each tutor, and (c) for all courses tutored. The data provided support for the claim that tutoring is effective. Students who receive tutoring can demonstrate learning after tutoring in a statistically significant way.

Table 2

*Effective Tutoring Outcomes by Course*

Tutor	Yes	No	$\chi^2$	<i>p</i>
General Biology				
Non-Majors	16	8	14.06	.0002
Science Majors	59	0	57.02	<.0001
Anatomy & Physiology	24	0	22.04	<.0001
Computer Skills	19	0	17.06	<.0001
Chemistry				
Introductory	18	3	9.34	.0022
Allied Health	40	0	38.01	<.0001
General Chemistry 1	311	48	191.2	<.0001
General Chemistry 2	634	78	432.62	<.0001
Organic Chemistry 1	400	13	360.76	<.0001
Organic Chemistry 2	23	0	21.04	<.0001
Nutrition	45	9	22.68	<.0001
Physical Science	13	0	11.08	.0009

### *Limitations and Strengths of the Study*

The main limitation of the study was it was not designed to address any factors other than the immediate result of tutoring. The design of the study did not account for different degrees in understanding, in much the same way that a pass-fail grading system is not sensitive to the differences in mastery determined using standard letter grades. Variations in the complexity of questions students asked, method of tutoring used by the tutor, amount of time spent in tutoring, or other factors were also beyond the scope of this study. Future research may be able to turn this limitation into an opportunity by examining these factors. Furthermore, tutors were asked to mark whether the student could demonstrate understanding after tutoring, so there was some room for error introduced by the tutor in making this determination. To minimize this, tutors were instructed in what constituted a tutoring interaction and what behavior by the student counted as meeting the definition of learning. Another limitation of the study was that the researcher is an advocate for tutoring and learning assistance, rather than a neutral researcher.

The main strengths of this study are that it provides an operational definition of student learning that can be used by learning center professionals in a variety of evaluations, and that the study is relatively simple to replicate. Learning center administrators can reproduce the study with slight modifications to tailor the design to their unique needs and situations. The data from these replicated studies can be used to provide justification to administrators regarding the effectiveness of the tutoring program, or, depending on the results, the learning center administrator can use it for justification for making changes to a tutoring program. The changes can then be tested in a similar manner. For example, administrators could examine the results by tutor to assess whether there was a difference in student learning between tutors who had received training and those who had not received training. Learning center administrators can examine the effectiveness of individual tutors to identify needs for additional training, coaching, or support. Examining the effectiveness of individual tutors should be done with some caution, however, due to the limitations of the study. From a planning and programming standpoint, determining what courses are or are not being effectively tutored can be helpful in deciding if resources need to be reallocated to better support those areas. For example, if students receiving tutoring in anatomy and physiology are not showing that learning is occurring in a statistically significant way, then the learning center administrator may need to use different tutors or change how the students are receiving help. Furthermore, the results of this study combined with replications of this study in other learning centers can be used to address the need for outcomes assessment many institutions of higher learning are demanding.

## Conclusion

The study utilized a relatively simple research design replicated or customized to the unique needs of learning center administrators to assess the effectiveness of their tutoring programs. The results of the study showed a statistically significant relationship between tutoring and student learning. The students did not understand what they were trying to learn before receiving tutoring and they did understand, more often than not, after receiving tutoring. The subcategories of individual tutors and courses tutored indicated similar results.

## References

- Falchikov, N. (2001). *Learning together: Peer tutoring in higher education*. New York: Routledge Falmer.
- Fuchs, L., Fuchs, D., Bentz, J., Phillips, N., & Hamlett, C. (1994). The nature of students' interactions during peer tutoring with and without prior training and experience. *American Educational Research Journal, 21*, 75-103.
- Fuchs, L., Fuchs, D., Hamlett, C., Phillips, N., Karns, K., & Dutka, S. (1997). Enhancing students' helping behavior during peer-mediate instruction with conceptual mathematical explanations. *Elementary School Journal, 97*(3), 223-249.
- Graesser, A., Person, B., & Magliano, J. (1995). Collaborative dialogue patterns in naturalistic one-to-one tutoring. *Applied Cognitive Psychology, 9*, 495-522.
- Harootounian, J. A. & Quinn, R. J. (2008). Identifying and describing tutor archetypes: The pragmatist, the architect, and the surveyor. *Clearing House, 82*(1), 15-20.
- Ismail, H., & Alexander, J. (2005). Learning within scripted and non-scripted peer-tutoring session: The Malaysian context. *Journal of Educational Research, 99*(2), 67-77.
- Key, J. (1997). Research design in occupational education. Oklahoma State University <http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage28.htm>
- King, A. (1998). Transactive peer tutoring: Distributing cognition and metacognition. *Educational Psychology Review, 10*(1), 57-74.
- Merrill, D., Reiser, B., Merrill, S., & Landes, S. (1995). Tutoring: Guided learning by doing. *Cognition and Instruction, 13*(3), 315-372.
- Munley, V.G., Garvey, E., & McConnell, M. (2010). The effectiveness of peer tutoring on student achievement at the university level. *American Economic Review, 100*(2), 277-290.



- Okawa, G. Y., Fox, T., Chang, L. Y., Windsor, S. R., Chavez, F., & Hayes, L. (2010). Multi cultural voices: Peer tutoring and critical reflection in the writing center. *Writing Center Journal*, 30(1), 40-65.
- Preacher, K. J. (2001, April). Calculation for the chi-square test: An interactive calculation tool for chi-square tests of goodness of fit and independence [Computer software]. Available from <http://quantpsy.org>
- Roscoe, R.D., & Chi, M. T. (2007). Understanding tutor learning: Knowledge-building and knowledge-telling in peer tutors' explanations and questions. *Review of Educational Research*, 77(4), 534-574. DOI: 10.3102/0034654307309920.
- VanLehn, K., Siler, S., Murray, C., Yamauchi, T., & Baggett, W. (2003). Why do only some events cause learning during human tutoring? *Cognition and Instruction*, 21(3), 209-249.

## Appendix

Course	Effective Tutoring Occurred: Student Demonstrated Correct Understanding	Effective Tutoring Did Not Occur: Student Did Not Demonstrate Correct Understanding
General biology (Non-Majors)		
General biology (Science Majors)		
Microbiology		
Anatomy and Physiology		
Computer Skills		
Introductory Chemistry		
General Chemistry 1		
General Chemistry 2		
Organic Chemistry 1		
Organic Chemistry 2		
Chemistry for Health Sciences		
Physics 1		
Nutrition		
Physical Science		

Tutor Name: \_\_\_\_\_ Dates : \_\_\_\_\_

# Social and Academic Correlates of Reading a Common Book

TIMOTHY K. DAUGHERTY , MISSOURI STATE UNIVERSITY  
MATHEW W. HAYES, WINTHROP UNIVERSITY  
Abstract

Many universities have Common Book programs, but few of them are driven by clear goals and little research about the effectiveness of programs exists. The current study examined social and academic correlates of self-reported common book readership. As expected, upper-level students who read their entire common book as freshmen reported a stronger connection to the community and had higher college achievement. Engaged Readers did not differ from Non-Engaged Readers on high school grade point average (HSGPA) or SAT-verbal score (SATV), so reading a common book does not reduce to preexisting academic skill. Engaged Readers may have been helped by employing stronger learning approaches (Achieving and Deep) than were apparent in Non-Engaged Readers.

**Keywords:** academic achievement, learning strategies, engagement, common book

Common Book Programs, now featured in the first year experience at many colleges, seek to create shared intellectual experiences for new students (Laufgraben, 2006). The chosen book is intended to be a socialization tool; through it, students form personal connections and are introduced to the kind of intellectual engagement that defines collegiate learning (Ferguson, 2006). An additional benefit is that some students develop study approaches that facilitate college success.

Several resources provide guidance for establishing and evaluating common book programs (e.g., Anderson, 2006; Boff, Schroeder, Letson, & Gam-bill, 2005; Straus & Daley, 2002), but few refereed studies examine whether common book programs produce sought outcomes. Stone, Higginson, and Liljequist (2004) examined student perceptions during the first year of a common book program. They focused primarily on student perceptions of the book (e.g., the reading level, length, and enjoyment of the book) and satisfaction with it as part of the first year experience (e.g., how much the book was used in classes, understanding college expectations). Stone et al. found four factors for student satisfaction with the book: a program experience factor that measured satisfaction with the book as a larger part of the first year program, a book factor that measured satisfaction with the book itself, an author factor measuring satisfaction with seeing the author (who spoke on campus as part of the first year program), and a discussion factor

For more information contact: Timothy K. Daugherty, Ph.D. ABPP | Psychology Department | Missouri State University | Springfield, MO 65897 | Telephone: 417.836.8730 | e-mail: tdaugherty@missouristate.edu

that measured satisfaction with the book as a basis for discussions. The program/experience factor and the discussion factor could assess the common book as a socialization tool, but neither the means for these subscales nor their relationships to other variables was reported. Their data certainly provide information about the types of factors which affect student satisfaction, but they do not measure the extent to which a common book meets a primary goal of improved campus community engagement nor its relationship to college success.

Though the original program was first implemented without an a priori set of goals, faculty at the site for this research came to believe through experience that the common book program provides the means for the institution to help students develop a stronger connection with the university and to increase success by improving both the frequency and quality of student-faculty and peer interactions. The latter observation, in particular, is consistent with research that suggests that students who become involved in campus life are more likely to succeed in college and graduate (Astin, 1977; Pascarella & Terenzini, 1991; Pascarella & Terenzini, 2005; Terenzini, Springer, Pascarella, 1993).

Pascarella and Terenzini (1979) found that more interactions with faculty and the quality of interactions with faculty and peers outside the classroom significantly improved persistence in students with low commitment to graduation. Astin (1993) found that involvement with faculty was a significant predictor of completing a degree and enrolling in a professional or graduate program. Astin further explained that involvement with faculty and involvement with student peers were both factors affecting college Grade Point Average and graduating with honors.

In addition to facilitating campus engagement, common book programs may also help students develop effective study skills and self-regulation skills that are also critical for success in college. Most incoming college students do not have adequate study skills (Higher Education Research Institute, 2008; Nacaise & Gettinger, 1995). Weak students rely almost exclusively on shallow learning strategies based on rote memorization of facts such as verbatim note-taking and memorizing textbook definitions. Stronger students not only know more strategies (Taraban, Rynearson, & Kerr, 2000), but they are more likely to use strategies that result in deeper learning of the underlying concepts, such as identifying main points, self-questioning, and relating what they are studying to themselves and other information that they know (Cano, 2007). The learning environment can affect the types of strategies, shallow or deep, that students employ (Campbell et al., 2001; Dart et al., 1999). Environments that emphasize comprehension of and engagement with the material at a deep level are more likely to spur students to adopt deep learning strategies than those that emphasize memorizing details (Campbell et al., 2001). This is important because students who employ deep learning strategies achieve greater academic success (Taraban et al., 2000). First year programs (e.g., University 101 courses, Freshmen Seminar, etc.) help students make the adjustment from what is typically a passive, teacher-directed learning experience in high school to the self-directed learning typically required in college, effecting changes in knowledge, attitudes, and beliefs (Schrader & Brown, 2008). A common

book program that emphasizes deep learning could help students cultivate deep learning strategies that increase chances for success in college, even if high school success may have been predicated on surface memorization strategies. The common book is not simply the first college assignment, and benefits should be more than a function of native intellectual ability. The purpose of the present study was to investigate whether common book programs are, in fact, associated with enhanced student outcomes.

The present study investigated whether reading a common book was associated with greater social engagement and academic achievement. It was predicted for this study that engaged readers of the common book would not differ from non-engaged readers of the common book in terms of pre-college scholastic aptitude and academic achievement. Rather, it was predicted that engaged readers of the common book would report a stronger connection to the university community and, ultimately, would demonstrate stronger academic skills and higher achievement in college.

### Method

The sample included 97 college students (78 female, 19 male) who volunteered in response to campus announcements (mean age = 20.1 years,  $SD = 1.25$ ). Participants provided informed consent to complete an internet-based protocol and to allow limited access to academic and demographic records including SAT verbal (SATV) and high school grade point average (HSGPA). The site of the research is a public university in the southeast with, at the time of the study, five years of experience with its common book program.

Common Book Reading was assessed through a combination of two items. The first item asked, "What was the title of the 'Common Book' when you arrived at [this university] as a first-year student?" Possible responses listed titles from the prior five years along with two additional alternatives: "I don't know the title of the common book for my year" and "I transferred to [this university]." Students responding with one of the later two alternatives were not included in the study. The second item listed the same books and prompted, "Please indicate the extent to which you've read these books." Participants responded on a scale from 0 ("Not at All") to 3 ("All"). Based on matched responses to the first and second items, two groups were created. Engaged Readers ( $n = 64$ ) responded with "All" regarding their common book on the second item, while Non-Engaged Readers ( $n = 33$ ) either reported not reading or not reading their entire common book.

Attitudes toward Learning and Study Strategies were assessed using a modified version of Pintrich and DeGroot's (1990) Motivated Strategies for Learning Questionnaire (MSLQ). The original MSLQ included 44 items related to a single academic course. The scale was shortened to 24 items, shifted from a 7-point to 5-point Likert scale, and changed the context to college academics in general. When necessary, selected items were minimally reworded (e.g., "I like what I am learning in this class" became "I like what I am learning in college"). The revised scale included 13 items from the Motivational Beliefs subscale (four items from the original Self-Efficacy subscale, five items from the original Intrinsic Value subscale, and all four items from

the Test Anxiety subscale) and 11 items from the Self-Regulated Learning Strategies subscale (six items from the original Cognitive Strategy Use subscale, five items from the original Self-Regulation subscale). Internal consistency estimates for the shortened subscales ( $\alpha = .79 - .83$ ) were strong and consistent with the factor structure of the original MSLQ.

These five subscales are related to the type of approach to learning—surface, achieving, or deep—that students employ (Sachs, Law, & Chan, 2002). The Test Anxiety subscale measures a surface approach to studying wherein students focus on memorizing facts at the expense of comprehending meaning. The Intrinsic Value and Cognitive Strategy Use subscale measure a deep approach to learning. Whereas the surface approach is characterized by simple memorization strategies, the deep approach is characterized by understanding the material to be learned at the conceptual level. The Self-Efficacy and Self-Regulation scales measure an achieving orientation wherein students maximize grades by managing their study efficiency and environment.

The Community Connection Scale was developed as a self-report measure with five items (e.g., “I have a special connection with my classmates”). Participants respond to each item using a Likert scale to indicate level of agreement, scored from 0 (“Not at All True of Me”) to 4 (“Very True of Me”). The Community Connection score is obtained by calculating a mean for the five items of the scale. Internal consistency, calculated using the current sample, was strong and consistent with unifactorial structure ( $\alpha = .84$ ).

## Results

In order to establish that effects associated with common book reading were not based solely on differences in precollege scholastic aptitude and academic achievement, SATV scores and HSGPA for the two reading groups were compared (see Table 1 for means and standard deviations for all variables). As expected, the two reading groups did not differ significantly in terms of SATV scores ( $t(86) = 1.02, p = .31$ ) or HSGPA ( $t(95) = .64, p = .53$ ). The report of reading the common book, thus, appears to be independent of pre-college academic aptitude and achievement.

Academic achievement subsequent to the Common Book did, however, differ significantly between the two groups. Engaged readers achieved significantly higher College Grade Point Averages than Non-Engaged Readers ( $t(95) = 2.16, p < .02$ ).

The two groups also differed in terms of reported Community Connection, Attitudes toward Learning, and Study Strategies. The Engaged Readers reported significantly stronger Community Connection than Non-Engaged Readers ( $t(95) = 2.33, p < .02$ ).

The Engaged and Non-Engaged readers had significantly different Motivational Beliefs ( $t(95) = 3.30, p < .001$ ) and Self-Regulated Study Strategies ( $t(95) = 3.06, p < .005$ ). The Engaged readers employed significantly greater Deep Learning approaches as evidenced by high mean Intrinsic Value ( $t(95) = 3.09, p < .005$ ) and Cognitive Strategy Use ( $t(95) = 2.90, p < .005$ ) scores. They also had significantly greater Achievement approaches to

learning as indicated by higher Self-Efficacy ( $t(95) = 2.92, p < .005$ ) and Self-Regulation ( $t(95) = 2.7, p < .008$ ) scores. The Engaged Readers had similar surface approaches to learning as the Non-Engaged Readers; the Test Anxiety scores of the Engaged Readers didn't differ from the Non-Engaged Readers ( $t(95) = -0.75, p > .05$ ).

Table 1

*Descriptive statistics for dependent variables by Common Book Reading group*

<b>Dependent Variable</b>	<b>Engaged Readers (<i>n</i> = 64)</b>	<b>Non-Engaged Readers (<i>n</i> = 33)</b>
High School Grade Point Average	3.85 (.21)	3.82 (.25)
SAT Verbal Score <sup>1</sup>	566 (79)	548 (85)
Community Connection	2.85 (.88)	2.43 (.80)
Motivational Beliefs	3.10 (.52)	2.73 (.52)
Intrinsic Value	3.12 (.51)	2.75 (.63)
Self-Efficacy	3.08 (.64)	2.70 (.51)
Test Anxiety	1.40 (.95)	1.56 (.99)
Self-Regulated Learning Strategies	2.55 (.56)	2.16 (.64)
Cognitive Strategy Use	2.69 (.56)	2.32 (.67)
Self-Regulation	2.40 (.66)	2.00 (.71)
College Grade Point Average	3.30 (.53)	3.04 (.58)

<sup>1</sup> SAT scores were available for 88 of the participants (56 Engaged and 32 Non-Engaged).

## Discussion

As predicted, the present study found that Engaged Readers who read their entire common book reported a stronger connection to the university community and had higher academic achievement in college. Furthermore, the Engaged Readers did not differ from the Non-Engaged Readers on either high school HSGPA nor on SATVS score, meaning that it is unlikely that the common book's effects reflected preexisting individual differences in academic skill or intellectual ability. The higher academic achievement of Engaged Readers was also accompanied by better study strategies and motivational beliefs than Non-Engaged Readers. A closer examination of the data revealed that the two groups used less effective surface study approaches to the same degree, but the Engaged Readers employed greater achieving and deep approaches to learning. These latter approaches result in higher academic achievement (Biggs, 1987). Achievement approaches to learning produce higher academic achievement because students organize their study behaviors to maximize their grade. Deep approaches to learning produce higher academic achievement because students have a better conceptual understanding that they can flexibly deploy in many new situations. Since deep approaches to learning are associated with greater academic success in college (Cano, 2007), facilitating deep approaches to learning is a common goal of a university education. Taken together, these results support Astin's (1984) assertion that programs that increase student involvement, the physical and psychological energy invested in their educational experience, will result in greater learning and personal development.

The gains demonstrated by the Engaged Readers were in addition to any benefits derived from a first year experience course. Since all incoming students were required to complete a one-credit course designed to assist them with the transition to college and the development of critical thinking skills, the differences related to common book readership observed in the present study cannot be attributed to simply enrolling in this course. Furthermore, the common book was integrated into the curriculum for this course, providing equal exposure to the common book for both Engaged and Non-engaged Readers, prompting all students to become more engaged in the classroom and providing them with a basis for meaningful interactions with faculty and peers. Both of these factors are associated with student persistence and academic achievement (Pascarella & Terenzini, 1979; Svanum & Bigatti, 2009; Terenzini et al., 1994). The enhanced social connection found in this study may be providing the extra boost students might need to implement deep learning strategies (Beyeler, 1998). All of the students in this study—Engaged and Nonengaged Readers—were exposed to study strategy instruction and tips to help ease the transition to college; however, those who reported reading the entire common book, the Engaged Readers, reported significantly higher campus engagement and more effective study strategies.

The present study is among the first empirical examinations of the impact of a common book on campus community engagement and academic achievement. The encouraging results are tempered by methodological limitations. The small sample ( $N = 97$ ), for example, was drawn from a single university. However, the present study surveyed students who read several different books, making it unlikely that any particular book resulted in



the observed effects. Motivation, study strategies, common book reading, and community engagement were assessed through self-report. The validity of the MSLQ-R has not been thoroughly established, and shared method variance might have contributed to some of the findings. Furthermore, the retrospective self-report data coupled with the correlational design makes it difficult to establish clear paths of causation. Still, the academic outcome measure (GPA) was obtained independently through university records; its significant relationship with reported reading could not have been accounted for by method variance.

Common book programs have become popular, and the present study provides some of the first empirical evidence regarding these programs. The results strongly support a connection between common book programs and academic engagement and achievement—a connection that appears to be independent of high school achievement and academic aptitude. Future studies employing longitudinal designs will eliminate the limitations posed by retrospective self-report measures in this study and will also permit examination of the relationship between common book reading and retention. As the empirical foundation develops regarding the efficacy of these programs, common books can move from being popular to being purposeful.

## References

- Astin, A. W. (1977). *Four critical years: Effects of college on beliefs, attitudes, and knowledge*. San Francisco, CA: Jossey-Bass Inc.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 297-308.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey-Bass Higher and Adult Education Series.
- Andersen, C. F. (2006). Assessing common reading programs. In J. L. Laufgraben (Ed.) *Common Reading Programs Going beyond the Book* (Monograph No. 44, pp. 75-91). Columbia, SC: University of South Carolina National Resource Center for The First-Year Experience and Students in Transition.
- Biggs, J. B. (1987). *Learning process questionnaire: Manual*. Hawthorn, Vic.: Australian Council for Education Research.
- Beyeler, J. (1998). Reluctant readers: Case studies of reading and study strategies in introduction to psychology. *Learning Assistance Review*, 3, 5-19.
- Boff, C., Schroeder, R., Letson, C., & Gambill, J. (2005). Building uncommon community with a common book: The Role of librarians as collaborators and contributors to campus reading programs. *Research Strategies*, 20, 271-283.

- Campbell, J., Smith, D., Boulton-Lewis, G., Brownlee, J., Burnett, P. C., Carrington, S., et al. (2001). Students' Perceptions of Teaching and Learning: The Influence of Students' Approaches To Learning and Teachers' Approaches To Teaching. *Teachers and Teaching: Theory and Practice*, 7, 173-187.
- Cano, F. (2007). Approaches to learning and study orchestrations in high school students. *European Journal of Psychology of Education*, 22, 131-151.
- Dart, B., Burnett, P., Boulton-Lewis, G., Campbell, J., Smith, D., & McCrindle, A. (1999). Classroom learning environments and students' approaches to learning. *Learning Environments Research*, 2, 137-156.
- Ferguson, M. (2006). Creating common ground: Common reading and the first year of college. *Peer Review*, 8, 8-10. Higher Education Research Institute. (n.d.). Retrieved May 9, 2008, from <http://www.gseis.ucla.edu/heri/yfycyoverview.php>
- Laufgraben, J. L. (2006). *Common Reading Programs Going beyond the Book* (Monograph No. 44). Columbia, SC: University of South Carolina National Resource Center for The First-Year Experience and Students in Transition.
- Nicaise, M., & Gettinger, M. (1995). Fostering reading comprehension in college students. *Reading Psychology*, 16, 283-337.
- Pascarella, E. T., & Terenzini, P. T. (1979). Student-faculty informal contact and college persistence: A further investigation. *Journal of Educational Research*, 72, 214-218.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students : A third decade of research*. San Francisco: Jossey-Bass.
- Pintrich, P. R., & de Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-40.
- Sachs, J., Law, Y., & Chan, C. K. (2002). An analysis of the relationship between the motivated strategies for learning questionnaire and the learning process questionnaire. *Psychologia*, 45, 193-203.
- Schrader, P. G., & Brown, S. W. (2008). Evaluating the first year experience: Students' knowledge, attitudes, and behaviors. *Journal of Advanced Academics*, 19, 310-343.

- Stone, S., Higginson, B., & Liljequist, L. (2004). Summer reading programs: perceptions of a university freshman reading experience. In J. A. R. Dugan, P. E. Linder, M. B. Sampson, B. A. Brancato & L. Elish-Piper (Eds.), *Celebrating the power of literacy*. (pp. 423-437). Pittsburgh, KS US: College Reading Association.
- Straus, M., & Daley, J. (2002). *Learning college initiative: Implementing a common book at your college*. Houston, TX: Houston Community College System.
- Svanum, S., & Bigatti, S. M. (2009). Academic course engagement during one semester forecasts college success: Engaged students are more likely to earn a degree, do it faster, and do it better. *Journal of College Student Development*, *50*, 120-132.
- Taraban, R., Ryneanson, K., & Kerr, M. (2000). College students' academic performance and self-reports of comprehension strategy use. *Reading Psychology*, *21*, 283-308.
- Terenzini, P. T., Rendon, L. I., Upcraft, M. L., Millar, S. B., Allison, K. W., Gregg, P. L., Jalomo, R. (1994). The transition to college: Diverse students, diverse stories. *Research in Higher Education*, *35*, 57-73.
- Terenzini, P. T., Springer, L., & Pascarella, E. T. (1993, November). In- and out-of-class influences affecting the development of students' intellectual orientations. ASHE Annual Meeting Paper. Paper presented at the Association for the Study of Higher Education, Pittsburgh, PA.



# Discovering Focus: Helping Students with ADD (Attention Deficit Disorder)

---

JIM VALKENBURG  
DELTA COLLEGE

## ABSTRACT

**Attention Deficit Disorder (ADD) is a neurological disorder which affects learning and that has a confusing set of diagnostic symptoms and an even more confusing set of remedies ranging from medication to meditation to nothing at all. Current neurological research suggests, however, that there are strategies that the individual with ADD can use to focus and to learn. Recent findings about brain plasticity and how the brain processes information can offer students with ADD a variety of strategies that will help them to learn how to learn better. It is the goal of this narrative to demystify ADD and offer some possible solutions that do not cost anything but the time it takes to adapt to a more effective style of learning.**

## The Nature of ADD

**I**t may seem strange, but most of the students with ADD (for the purposes of this narrative, ADD and ADHD will be used interchangeably) who come to the tutorial center have not been told about the nature of their disability. Oh, they've been told the name of it, but the how and why of the specific disability is usually left blank—quite possibly because there is no one specific definition for ADD nor one specific set of symptoms.

Jacobs and Wendel (2011), in their online monograph, "Three Types of Adult ADD," state: "Although scientists haven't yet pinpointed the exact mechanism that causes ADHD, they have discounted many older theories and are conducting promising research that suggests the disorder is caused by an imbalance of neurotransmitters in the brain" (p. 15). There are several neurotransmitters that seem to play a role here. Two of them that seem to play a key role, according to Jacobs and Wendel are epinephrine, and norepinephrine which help to transmit physical impulses. A third, dopamine, plays a key role in how attentive or passive one might be in a given situation. Another, serotonin, plays a role in affective behavior. An imbalance of the neurotransmitters can lead to an agitated state of consciousness or one where the individual is not motivated to engage.

Ritalin is one of the drugs used to regulate the level of neurotransmitters in the brain. In his review of an article published in the Journal of Neu-

rosience, Osterweil (2007) reported that research conducted on rats to ascertain the effect of Ritalin on the brain, suggested that “alterations [in the brain] included neurochemical and cellular changes—but not structural changes—in ADHD-related regions, including the medial prefrontal cortex, striatum, hippocampus, and hypothalamus” (p. 1-2). He also reported that the researchers thought the changes could be reversible after the animal was taken off the drug, but they indicated more research was necessary to determine if there were any long-term effects.

In their comparison of treatments for ADHD between Ritalin and Neurofeedback techniques (EEG), Nazari, Querne, De Broca, and Berquin (2011) found that, on the average, Ritalin was more effective in helping the student to focus. However, the small size of the experimental sample suggests that the difference in the findings may not be significant and that a much larger sample is needed to obtain clear differentiation. Furthermore, Nazari states that:

Overall, our findings might provide further support to the view that neurofeedback can be considered an effective treatment for children with ADHD, at least an appropriate adjunctive treatment for non-responders or incomplete responders to medication as well as for those their parents favor a non-pharmacological treatment (p. 83).

Regardless of the cause of ADD, the system-wide dysfunction is essentially characterized by a variety of symptoms including forgetfulness, reluctance to take on tedious tasks, distraction and inattention, carelessness, and disorganization. One might see how these symptoms are interrelated. If one is disorganized and has difficulty focusing on one topic, s/he may become more easily distracted and choose to stay away from those tasks that require attentiveness and strong organizational skills. Lack of focus and easy distraction may also be a reflection of some executive function disorder, as well. Information is stored in many different areas of the brain, and access to and integration of that information is controlled as an associative process that constructs a consistent, coherent picture. Executive function sorts it all out to construct a unified picture that, in general, the person with ADD seems to have difficulty constructing. Inattention, or lack of focus, means the materials the student wishes to study and remember are not effectively processed into long-term memory. Jacobs and Wendell (2011) said that “[s]ome scientists believe the root cause of ADHD lies with response inhibition, or the ability to control . . . impulses, stay focused, and delay immediate gratification” (p. 11). But these disabilities have an impact on how the brain processes and stores information into long-term memory. It is important to note that working memory can usually deal with two or three items at a time and then essentially stops processing information. The brain of the student with ADD tries to do too much—taking on more input than is possible to process at one time—and this overloads short-term memory, causing it to shut down (Dzubak, 2008).

Since there is no central location for storing specific bits of information (although there are specific locations for processing certain types of stimuli and information), it is important to understand the complexity of integrating pieces of information that can be scattered across various parts of the brain.

Kandel (2006) offers data from a series of experimental research projects that have shown the diversity of integrating processes required to access even the smallest bit of information. Crick and Koch (2005) also addressed the complexity of memory and the integration of bits of information into a cohesive whole. They tell us that, "A key feature of almost all neuronal theories of consciousness is the need for continuous interactions among groups of widely dispersed pyramidal neurons that express themselves in the ongoing stream of conscious percepts, images and thoughts" (p. 1271). That the individual with ADD has difficulty integrating information can be seen in his or her frequent inability to organize or actively engage in specific projects. That students cannot focus means they do not get enough information into or out of their memory to be able to integrate (synthesize) as necessary. Jacobs and Wendel (2011) said that students with ADD "don't necessarily have a bad memory so much as a defect in one or more links of the highly complex chain that makes up memory" (p. 11).

When one adds the distractions inherent in modern computer technology and the demand that people multitask (an impossible chore for many) to the already befogged brain of the student with ADD, then one can begin to understand the difficulty that individual will have when learning. The lack of focus and attention poses a significant challenge. The experience might be likened to trying to put a jigsaw puzzle together without a picture as a reference to know which side of each piece was up. Whether the individual has a problem with acquiring and processing information into memory because of distractions—environmental or technological—or storing memory because of some executive function disorder, or accessing, transferring and synthesizing information to understand a problem in a new light, motivation and active engagement in the learning process is difficult for the student with ADD (Jacobs & Wendel). The students "fog out" and have difficulty linking information, so it will be harder to locate and process.

### **Rewiring the ADD Brain**

Memory is—and should be—more than storing isolated bits of information. Our brains constantly make connections between ideas. Each individual, however, can begin to train his or her brain to link information in a more meaningful way—can deepen the neural pathways between neurons and strengthen the neural communities that are formed. (Valkenburg, 2010) The work of Merzenich (2011), a pioneer in modern neuro-research, Kandel (2006), a key experimental neuroscientist, Doidge (2007), who described the positive experiences of people overcoming brain dysfunction, Zull (2002), an advocate for developing active teaching techniques that will stimulate neuronal growth, and Schwartz (2003), whose clinical work with patients with OCD is an important step towards using the concept of plasticity to help patients find mental stability, focuses on the brain's ability to change every day. That is, the brain rewires itself as the individual experiences, learns and relates various experiences and ideas together. This concept of brain plasticity is important to note when working with any student, but with students with ADD, in particular. Their work is summarized as follows.

## The Theory

Normal brain activity is an electro-chemical process whereby an electrical impulse causes a neurotransmitter to waft from the synapse of an axon across what is called the synaptic cleft to a receptor synapse on a dendrite. As the individual returns to the same idea or experience, the neurons form a pathway that is easier to use in order to access that bit of information. Using what has been called "Hebb's Law" (Goldstein, 2012), neuroscientists have come to understand that "neurons that fire together, wire together"—neural communities (neural networks) are formed when a series of neurons all fire around a specific set of ideas or stimuli. They function as a unit, so actively, mindfully, purposefully linking and reinforcing ideas together establishes a broader and more cohesive series of neural communities. Although the brain does this naturally, albeit unconsciously, doing so consciously gives the individual more control over the knowledge and its subsequent access and use. Indeed, frequent and strong stimuli along a given neural pathway cause the neuron to "grow" new synaptic terminals to accommodate additional signal transmission among the neurons. A fascinating description of the process of synaptic growth can be found in Kandel's *In Search of Memory* (Kandel, 2006, p. 247-60 & 261-278).

Brain plasticity, then, means that the topography of the brain changes with each new experience and that repeated access to certain types of information or the use of certain methods to acquire and store information has an impact on how the brain functions and the ease with which information can be accessed and used.

Every thirty years or so, there seems to be renewed interest in Eastern philosophy. This investigation often brings with it a new synthesis of ideas that merges Eastern meditative ideas with Western science—C. G. Jung and G. I. Gurdjieff in the 1930's, Alan Ginsberg, Jack Kerouac and the Beats in the 1950's, Joseph Campbell and Alan Watts in the 1960's and '70's, and, now, Jeffery Schwartz in the early 2000's, for instance. This merger can be understood by two examples. Biofeedback techniques that are used in Lamaze training for expectant mothers were developed around the Hindu principle that mind and body are a constant feedback loop and control of both is possible through meditation and breathing techniques. The idea is that by focusing on something other than the pain experienced during labor, and using meditation and deep breathing in some cases and rapid breathing in others, the patient will transcend the pain of natural childbirth. The second example of the merger of East and West is the idea of Cognitive Feedback now being used to focus patients on particular occurrences within the brain. While Western technology appears to be the driving force behind this technique, cognitive feedback is based on the Buddhist concept of "mindfulness"—becoming aware of where and when you are—to focus on the now. It is this concept of cognitive feedback that most relates to students with ADD.

Cognitive feedback requires that the individual be in contact with the impact of his or her emotions, attitudes and motivations in terms of understanding environmental stimuli. Cognition depends upon the quality of the reception and the attention the individual uses to learn information and consciously make connections and associations between ideas. Cognitive



feedback includes a metacognitive approach that answers questions about just what conscious and unconscious connections had to be made in order to reach a given idea or decision—to ascertain what associations were made to access and use information. Metacognition requires self-awareness and the ability to recognize and regulate the learning processes through which conscious and unconscious associations between new and known information are formed. Cognitive feedback asks that students be aware of their own responsibility for learning and reaching goals. The techniques students with ADD can use to develop learning skills are examples of cognitive feedback and metacognition at work.

### **The Model**

Since students with ADD have difficulty focusing and organizing materials, it is essential that part of the process of learning how to learn include techniques to recognize and reprioritize the time one spends studying. Sometimes students try to learn all the material at the same time rather than taking the assignment one step at a time. As a result, they make the task of learning too complex because they do not prioritize the importance of one activity or one idea over another. Learning is a gradual process of constructing information into holistic schemas organized around various themes. If the student can learn how to reframe his or her perspective of learning and develop positive traits that actually work, s/he can learn how to succeed.

In their book, *The Mind and the Brain*, Schwartz and Begley (2002) offer four “Rs” as a solution for patients with Obsessive Compulsive Disorder (OCD). To overcome their disability, patients are asked to: 1. Relabel or recognize that certain thoughts and behaviors are not productive, even if they do come to mind over and over; 2. Reattribute negative thoughts and behaviors to some type of malfunction in the brain that triggers an habitual response; 3. Refocus or identify and implement a directed alternative behavior (a “good habit”); and 4. Revalue or use “wise attention” to recognize the negative attributes of certain thoughts and behaviors as compared with the positive attributes of replacement behaviors. The authors claimed great success from many of his patients with OCD.

Schwartz’s methodological approach to rewiring and restructuring the brain can be integrated with other academic support when working with students with ADD. The process also works for them, too. They find they can change their behavior and their outlook about who they are and how they can learn.

### **The Interview**

Many of the students with ADD who come for consultations with academic support personnel do not understand their disability. This frustrates students and makes their task of learning even more difficult. The first step, therefore, in the initial interview is to have the tutor ask the student to tell his or her story about the difficulties with learning—what “fogging out” (losing concentration) is like, and how s/he has tried to compensate for the disability. As both student and tutor come to terms with the limitations caused by the student’s disability, the process of mutual understanding and trust begins.

If the student believes the tutor understands what it is like to struggle with learning because of ADD, then the foundation is laid for the next step. Remember, there is no set script—each person is different, and the tutor has to find a way to both engage the student and foster mutual respect.

### **Relabel/Reattribute**

Once the problems one specific student has and how it makes her or him feel is discussed, the process can begin. According to Bloom's Taxonomy of Educational Objectives (Bloom, 1956), there are at least three domains of learning: cognitive, affective and physical. The disability is the physical realm, and it is there that the rewiring of the brain will occur. But one also has to remember that the student has usually faced repeated failure and has quite a bit of baggage in the affective realm. It is important to remove that baggage before the student can finally succeed at the cognitive level.

Following Schwartz and Begley's lead, make sure that the student understands not only the nature of the disability but also what the brain is doing and why. Some basic brain physiology is required so the student understands how neurons communicate, how ADD interrupts the usual electrical-chemical process, and the impact that has on learning. When discussing neural pathways and neural communities, it becomes easier for the student to understand what is physically happening in his or her brain is causing the learning problem. The student can then relabel and reattribute the learning difficulty to the physical realm rather than a personal, affective, shortcoming. Knowing about the disability is somehow refreshing because the student can begin to use a systematic approach to finding the best way to learn.

### **The Process**

Once a student is comfortable with the idea that learning is not impossible, s/he is ready to discover ways to rewire her brain and find ways to focus and learn. The first step is to discover how long a student can focus before "fogging out." That is, finding a way to determine his or her attention span. This step entails having a stop watch or timer. When the student starts to study, the watch should be started. Once the student is aware that s/he is not focusing or is not aware of what s/he has just read, the watch should be stopped. After trying this a number of times to establish the norm for the student's attention span, the student can then more accurately set a time limit for effective periods of study.

Finding the length of the attention span is important because when students with ADD find they don't remember what they have just read, they usually start all over from the beginning. But they have probably been able to retain some of the earlier information, so starting over from the beginning is counterproductive—and boring. They know the earlier information and reinforce it often, but the information later in the reading is minimally considered. The idea is to get them to start from where they left off so they can come in contact with all of the content.

In order to get the most out of the time the student with ADD spends studying, s/he should work within a time limit. That is, s/he can set a timer for two or three minutes less than the time s/he has established as her attention span. That will allow her to get up and refocus before losing contact with the assignment. For instance, if the attention span of a student is nine minutes, when s/he sits down to study, s/he should set her timer for seven or eight minutes. When the alarm goes off, s/he can stand up, take a brief walk, take a drink, whatever s/he is comfortable with in order to refocus on the assignment and then to start from where s/he left off. When s/he starts again, s/he should restart her timer. As time goes on, and the student is better able to refocus by using a procedure that will allow for better study and learning, s/he can begin to think about stretching the attention span. Stretching the attention span can be accomplished in small increments of time. From the original nine minutes, the student can make eleven minutes his or her short-term goal, then thirteen, then whatever limit s/he thinks can establish a new norm. The process is self-referential, metacognitive, and requires that the student be mindful about what s/he is experiencing and how much progress s/he is making. The rewards are internal and will be reflected in the quality of learning of the student.

### **Refocus/Reformat**

Focus is a key factor for learning. Being able to center one's attention on a given task allows the smooth transition from short-term to long-term memory. Without focus, the memory of a given event or piece of information will last only as long as it stays in short-term memory—a matter of minutes. For the student with ADD, focus is extremely difficult to maintain for extended periods of time. It is, therefore, necessary to offer the student a range of possible techniques and strategies s/he can use to establish focus at the beginning of a study session and to later refocus after a period of time.

For a student with ADD, non-focus occurs as a result of an overload of stimuli. Usually, the student discovers s/he has lost focus many minutes after the event. All of that time is lost. Establishing the attention span is good early training that will eventually habituate the student with ADD to the idea of starting where s/he left off.

#### *Refocus*

Focus can be maintained and continued in a variety of ways. With the timer set, the student can move from location to location during the study session. While studying, the student can highlight and write in the margins to make meaningful links between what is being learned and what is already known. These mindful links become a key to maintaining focus and later accessing information. Mindfulness, remember, is a purposeful application of the understanding of the here and now.

Students should be reminded that there is no time limit (long or short) for studying. As long as a student is mindful of when and where s/he is and has some control over his or her ability to focus, even five minutes of study will

serve a purpose. During longer periods of studying, frequent refocusing exercises (moving, resetting the timer, drinking or eating, snapping the rubber band, etc.) will help the student to focus. It might also be beneficial to chunk smaller bits of information together (to find a common phrase or function that will link ideas) to make memorization easier. One can see that mindful refocused attention will help the student to later access information because synthesis (the chunking) has already begun during study.

Since students with ADD frequently have difficulty finishing an assignment, a tutor might offer suggestions about how to better manage time. Some suggestions could include having students make a check list of their assignments and other chores, so they can cross them off once completed. Another suggestion could be to prioritize assignments by determining which are due first, which are the hardest, which are necessary for an upcoming test, etc. Once a student gets the hang of using a plan for completing his or her work, it becomes easier and more natural to use a planner; as a result, assignments have a better chance of being completed on time. Those “to do” lists ensure that everything gets done. However, a student also has to be patient and understand that this change in behavior is not going to happen overnight; it will take time to accomplish.

Two of the most popular techniques for refocusing are using a rubber band as a stimulus and coming up for air or getting away from the table. The rubber band is just a conditioning prop that a person can wear on his or her wrist. Whenever the individual becomes aware that s/he has lost focus or is on the verge of losing focus, all s/he has to do is snap the rubber band against his or her wrist. Initially, the student will have to make a conscious effort to remember to snap the rubber band. Later, as refocusing becomes a more common behavior, the individual will be able to refocus without snapping the rubber band, although wearing it during stressful situations such as tests may continue to be helpful. A second refocusing technique—getting away from the table—is just a method the student can use to move, to change perspective, to get some fresh air and to use the surrounding environment to help the brain settle and refocus on the studies. It offers a relaxing physical interlude.

### *Reformat*

Reformatting is merely changing the way one looks at the material. Many students with ADD have a hard time reading a textbook because it is difficult to pull relevant information out of a paragraph. Information (bolded words and their definitions, for example) can be pulled out and put on flash cards, flow charts, diagrams (with labels) or tables. Many students with ADD struggle with this concept at first, but later find one or two graphic organizers they are comfortable using. The change in perception requires that the brain refocus—or, in some cases, focus fully for the first time. Manipulating ideas into relevant graphic representations is an excellent way to learn and retain information. One might also suggest they read the information aloud to hear it.

## Testing Techniques for Successful Focus

Testing and other assessments are the hallmark of the educational system and are also the place where many students with ADD do not succeed because there is simply too much pressure at one time to focus. For tests, tutors can recommend that students with ADD make sure to bring their rubber band. Remember, this is a prop for them to use to help them refocus. Tutors can suggest snapping the rubber band before each question and during any question that seems more difficult than others. The actual snap does nothing but prompt the brain to focus.

Students might also benefit from writing down any information they think might be difficult to remember during the test—a brain dump of information. This technique will allow students to focus on other specific details with less stress because they know some of the more difficult stuff is already on the test paper waiting to be used.

Finally, tutors can suggest that to help focus on more difficult questions, the student can cover the rest of the page to isolate the one question from the others. This technique serves two functions: it eliminates distractions that might be confusing, and it brings into clear focus precisely that one question, making it easier to answer.

### One Example

Student D first came for assistance during his first semester of college; he was failing all five of his courses. He was in his early thirties and was worried he could not function academically. He was easily distracted and frequently interrupted the flow of our conversation. Throughout the interview, the student was offered a number of suggestions about changing behaviors in order to learn better and about the primary importance of losing the baggage of past failures. The student tried a number of techniques. Some worked. Some didn't. He started wearing a rubber band, actively engaged in his learning, and continued to come back for more consultations, still wearing his rubber band. He made check lists, used a planner and adopted tables and flow charts to reorganize his work. At the end of the semester, he made the President's list (earning four A's and one A- ); since that time, he has made the President's list every semester. His attitude about learning and education had changed to the point where his measure of academic success was no longer the grade he earned but the knowledge and understanding he gained from the learning.

### Conclusion

Cognitive feedback techniques are valuable tools for all students who seek to improve their ability to learn. For the student with ADD, learning how to learn means coming to terms with his or her disability, finding new ways to study, and establishing new learning habits. Cognitive feedback techniques can help the student become more aware of the nature of his or her disability and bring motivation to approach learning in a different, more effective way. With more productive learning habits, the student's attitude about studying may become more positive and allow him to enjoy the experience of academic success.

## References

- Bloom, B., S. (1956). *Taxonomy of educational objectives, handbook: The cognitive domain*. New York: David McKay Co. Inc.
- Crick, F. C. and Koch, C. (2005). What is the function of the claustrum? *Philosophical Transactions of the Royal Society B*. 360, 1271-1279, doi: 10.1098/rstb.2005.1661. Published online 29 June 2005.
- Doidge, N. (2007). *The brain that changes itself: Stories of personal triumph from the frontiers of brain science*. New York: Penguin Books.
- Dzubak, C. (2008). "Multitasking: The good, the bad, and the unknown." *Synergy: The Journal of the Association for the Tutoring Profession*. [http://www.myatp.org/ejournal.htm#Multitasking:%C2%A0\\_The\\_good,\\_the\\_bad,\\_and\\_the\\_unknown\\_](http://www.myatp.org/ejournal.htm#Multitasking:%C2%A0_The_good,_the_bad,_and_the_unknown_) Accessed October, 2011.
- Goldstein, E. (2010). Why much of recent neuroscience research is a waste of money. *Mindfulness & Psychotherapy*. <http://blogs.psychcentral.com/mindfulness/2010/07/why-recent-neuroscience-research-is-a-waste-of-money/> Accessed January, 2012.
- Jacobs, C. and Wendel, I. Ph.D., MSCP. (2011). Adult ADD/ADHD. <http://www.netplaces.com/adult-add-adhd/searching-for-causes/five-current-theories.htm> Accessed August, 2011.
- Kandel, E. (2006). *In search of memory: The emergence of a new science of mind*. New York: W.W. Norton.
- Merzenich, M. (2011). *On the brain*. <http://merzenich.positscience.com/>
- Nazari, M. A., Querne, L., De Broca, A. and Berquin, P. (2011). Effectiveness of EEG biofeedback as compared with methylphenidate in the treatment of attention-deficit/hyperactivity disorder: A clinical outcome study. *Neuroscience & Medicine*, 2011, 2, 78-86 doi:10.4236/nm.2011.22012 Published Online June 2011(<http://www.SciRP.org/journal/nm>) Accessed August 2011.
- Osterweil, N. (2007). Ritalin may alter chemistry of young brains." *MedPage Today* Published: July 20, 2007. Accessed: September 2011. [http://www.medpagetoday.com/psychiatry/adhd-add/6213?xid=ob\\_cc\\_ADHD](http://www.medpagetoday.com/psychiatry/adhd-add/6213?xid=ob_cc_ADHD)
- Schwartz, Jeffery and Sharon Begley. (2002). *The mind and the brain: Neuroplasticity and the power of mental force*. New York: HarperCollins.
- Valkenburg, J. (2010). Against the grain: An argument for using less technology in education. *Synergy: The Journal of the Association for the Tutoring Profession*. [http://www.myatp.org/Synergy\\_1/Syn\\_13.pdf](http://www.myatp.org/Synergy_1/Syn_13.pdf)
- Zull, J. E. (2002). *The art of changing the brain: Enriching the practice of teaching by exploring the biology of learning*. Sterling, VA: Stylus Publishing.

# BOOK REVIEW:

## *College Study: The Essential Ingredients*

---

Lipsky, S. A. (2013) *College study: The essential ingredients*. Boston: Pearson Education, Inc. 164 pages.

**REVIEWED BY MICHAEL FRIZELL  
MISSOURI STATE UNIVERSITY**

In the preface to the third edition of *College Study: The Essential Ingredients*, Sally A. Lipsky, of Indiana University of Pennsylvania writes, "In this text readers are exposed to how to make informed choices about learning content that is often new, complex, and changing rapidly" (Lipsky xv). Indeed, the confluence of new technologies and subsequent pedagogy demand that students pursue new, innovative strategies that enable them to modify study habits or empower them to change perceptions and behaviors in electronic environments. Thus, it is imperative that a book of this type define the impact of electronic mediums on traditional study habits while offering faculty and students immediately applicable tools. The strength of Lipsky's text is the accessibility of those tools found in an easily-accessed, visually dynamic text.

Like Lipsky's *A Training Guide for College Tutors and Peer Educators*, information is presented in a myriad of visual formats, sacrificing the narrative approach. Charts, graphs, lists, and personal anecdotes are sprinkled liberally throughout the chapters and create a narrative of their own, playing to the strengths of visual learners or those that prefer a non-linear approach to learning, a key ingredient for success in learning via electronic environments. Though the visual information would benefit from being printed in color, it is presumed that color would dramatically increase the cost of the text. Any perceived shortcomings regarding the grayscale pictures are dispelled by their quality. Like the earlier editions, Lipsky is adept at parsing concepts and articulating their meaning in a way that is both compelling and easily understood by the reader.

Clearly, Lipsky is writing for the student who, for the first time, must navigate the study process. Like most texts of its type, the book is organized along a perceived continuum, playing to the needs of the modern college student and written with a conversational, though never pandering, tone. In the preface, Lipsky offers clear directions to the reader regarding how to best approach the text and thus encouraging activation of prior knowledge and the reflective practices of successful readers. The book begins in the same place as Walter Pauk's *How to Study in College* with a discussion of motivation and the creation of a definition for academic success, a definition

---

For more information contact: Michael Frizell | Director of Student Learning Services | Bear Claw Center for Learning and Writing | Missouri State University | Meyer Library 112, 901 S. National Ave, Springfield MO 65897 | Telephone: 417.836.5006 | e-mail: MichaelFrizell@MissouriState.edu

that varies from learner to learner. Lipsky uses her cooking theme to clearly describe motivation factors, time management, productivity, active learning, and more while following Pauk's roadmap. Where Pauk divides his text with frequent level-headings, Lipsky's text contains many numbered or bulleted lists, most containing questions for further thought, thus driving the idea that the text is merely a starting point for the student. This Socratic approach coincides with the pedagogical theory behind instruction and tutoring in the modern learning commons.

This book, however, is not for the casual reader as it is clearly intended to be used as a supplemental text in a first-year experience or a foundational reading and study skills course. As stated above, the book follows a conceptual continuum, starting with a foundation for academic success, then time management, reading, memory enhancement, test preparation and taking, and tips for continued success, mirroring the accepted progression of the first-year student. The fourth chapter, "Active Listening and Note Taking," and the fifth chapter, "Reading and Studying Text Material" are among the strongest in the book. Though the concepts in these chapters are not new, Lipsky manages to make them palatable and fresh by offering advice that enhances the metacognitive approach of other texts without burdening the lay reader with a theoretical approach. Lipsky starts each chapter with a problem, a concept, or a case study, and then dissects the process for overcoming perceived shortfalls or problems. She ends each chapter by briefly defining key concepts, a useful comprehension check, and a section titled "Your Personal Action Statement" that encourages students to reflect on what they read. Though the book could stand alone, as stated above, if used in tandem with the textbook for another course, it would greatly enhance the self-reflective exercises.

Christopher Lackey, in his review of Lipsky's *A Training Guide for College Tutors and Peer Educators*, noted that, "A clear theme emerges [in Lipsky's work]: it is simply the beginning of the journey to becoming an experienced practitioner" (Lackey 46). Though Lackey is referring to a guide designed for a tutor, the same can be said for Lipsky's student learner in *College Study*. The book is designed to set the reader on a successful path for student success. The impetus, and consequent success of the reader, is dependent upon his successful understanding of what motivates him to learn. Much like Stephen Covey's *Seven Habits of Successful People*, along each step in the continuum, Lipsky encourages the student to articulate and set realistic, achievable goals and to establish and define a reasonable timeline in which those goals can be realized. It is in the realization of these goals where the book falters, offering an anemic chapter nine, "Continuing Your Academic Success: A Review." The two-page chapter follows a lengthy and detailed chapter on test taking and suffers in comparison. Serving as a coda to the text, Lipsky suggests students create a personal action plan by analyzing fairly standard strengths and weaknesses in areas such as time management, understanding reading, and test preparation, but does not summarize the best practices of each she described so well earlier in the book.



Another weakness in the book is the articulation of the impact electronic communication has on college learning. Discussions of online mediums, for example, are regulated to a small box titled "Online Course Work." The placement makes them feel like an afterthought, and the advice offered is hardly groundbreaking, such as the advice Lipsky offers in chapter eight regarding highlighting, where she writes that students, "can create a highlighting-plus-marking study guide with digital text...computers come with a growing number of tools" (Lipsky 84). As stated earlier, this text would work best as a supplemental text for a developmental reading and study skills course and a text like this should navigate the impact technology has on study skills. Specifically, the text should enable a student with limited study and computer skill to find success in a digital world. However, Lipsky makes the assumption the reader is the "typical" college freshman, one that has grown to adulthood always familiar with computers or digital mediums. Lipsky's book might confound the adult learner entering college for the first time as it offers only remedial or partial solutions to studying digital material. Future editions should offer a more in-depth look at online and blended courses as well as working with e-texts and offer pedagogically sound solutions for tackling the material. Though it is easy to recognize that a discussion on the use of certain software programs such as Microsoft's Word or the dissemination of note taking when an instructor uses PowerPoint to deliver material would not be wise to include in a textbook as these products constantly change, a more focused discussion regarding the problems and their subsequent solutions in navigating electronic materials might prove beneficial.

Despite some weaknesses, there is a much for instructors to like about *College Study*. The strategies for study techniques, discussion of attitude and levels of interest and commitment by students for transferring learning techniques, and the focus on learning modalities allow faculty room for modification and enhancement of the exercises contained in the text, encouraging modeling and making the text malleable for most learning situations. Like many Pearson Education Inc. products, an e-text version of the book is available. As stated in the preface, "students can search the text, make notes online, print out reading assignments that incorporate lecture notes, and bookmark passages" (Lipsky xix). Thus, the book overcomes some of the weaknesses noted above by allowing the student to practice online learning modalities with this text. It should be noted that an Instructor's Resource Manual is available and contains problem-solving scenarios, suggestions on how to implement the text, quizzes, and more (xix). However, the Instructor Resource Manual was not available for review.

Overall, it is clear that Lipsky's book is superior to many of its type, striking a clear balance between accessibility and readability, between pedagogy and actual learning, and between theory and practice. Never forced, Lipsky gently guides the reader through the many facets of learning, encouraging reflection and evaluation, and suggesting a course of action without advocating slavish adherence to an "ideal" approach. Where the book lacks in innovation, it makes up for with thoughtful brevity and researched-based practice and clarity, ensuring a thorough read by students and teachers alike. This book is recommended in tandem with class materials designed to offer students entering the university seeking a foundation for educational success and a commitment to lifelong best practices in learning.

## References

Lackey, C. (2012) Book review: A training guide for college tutors and peer educators. *The Learning Assistance Review*, 17(1), 45-47.

# BOOK REVIEW:

## *From Brain to Mind: Using Neuroscience to Guide Change in Education*

---

Zull, J. E. (2011). *From brain to mind: Using neuroscience to guide change in education*. Sterling, VA: Stylus Publishing.

**REVIEWED BY MARCY MARINELLI  
UNIVERSITY OF MARYLAND COLLEGE PARK**

The past ten years have produced rapid changes in the field of neuroscience regarding how the brain works. For effective student support, learning center professionals need to know about brain-based learning. Because learning assistance professionals may not have a sufficient science background to understand the biological basis of learning, James Zull, in the follow-up to his popular book, *The Art of Changing the Brain* (2002), continues to make the biology of the brain understandable to those without extensive training in biology or neuroscience. Zull, a biology and neuroscience professor and Founding Director Emeritus of the University Center for Innovation in Teaching and Education at Case Western Reserve University, is eminently qualified to help us develop this knowledge. Through the use of teaching examples and analogies, Zull makes brain-based learning concepts come alive for those of us who teach or work with students.

Zull takes the reader on a journey from understanding the brain as a biological organ (a collection of cells, neurons, and chemicals) to understanding the brain as a complex, thinking, human mind that experiences emotions, makes decisions, and learns. Zull describes the neuronal theory of learning which posits that all learning is the result of branching of brain synapses which create memories. Hence, learning is a biological process that results in changes in the structure of the brain.

Zull organizes the book around themes of transformation, integration, images, symbols, making and using memories, as well as metacognition. He proposes a sequence of the development of the mind that suggests that all learning moves from random action to the following steps: discovery, joy, intentional action, integration, images, symbols, forming memories, predicting, and finally, experiential change. Each of these steps in the sequence depends on a particular biological structure of the brain. Zull describes brain structures that develop from birth that transform information into action. He also describes how people sense what is in environment around them and how they, in turn, act on it. Zull further discusses the brain as an organ of emotion that expresses itself visually and symbolically. Essentially, all learning is experiential. Learning consists of the learner interpreting their

---

For more information contact: Marcy Marinelli | Director, Learning Assistance Service | University of Maryland College Park | 2202A Shoemaker Building | Telephone: 301.314.7680 | e-mail: [marcym@umd.edu](mailto:marcym@umd.edu)

experiences and manipulating those experiences to create new ideas or plans. People use images and symbols to express our thoughts and create memories which we use to implement our plans and actions. Zull concludes with a discussion of the role of metacognition and its importance in the development of mind. Learners must possess self-awareness and insight into the development of their minds. "In many ways, a learner's awareness and insight about development of his or her own mind is the ultimate and most powerful objective of education; not just thinking, but thinking about our own thinking" (p. 259).

The educational implications of *From Brain to Mind* are consistent with much of the learner-centered focus that has shaped the higher education environment in the past 15-20 years. In fact, Zull advocates focusing on the learner and what he or she experiences as the foundation of the mind. Learning assistance professionals know that the most important skills to help students develop are independent learning skills because those skills lead to life-long learning once college is over. Zull suggests that learning professionals should all be concerned about putting "learners on the path from brain to mind" (2011, p. 231). In order to do this, learning professionals must help learners focus on understanding not only content, but themselves as learners. It is important to help learners understand the "what" and the "where" of information, as well as the big picture and details. Zull promotes helping students identify the big picture as well as the details, and identify, manipulate, categorize and explore relationships between concepts. He emphasizes the importance of reflection as a tool for preparing the mind to learn. Many of these concepts are familiar to those of who work with students.

By implementing many of the ideas suggested by Zull in *From Brain to Mind*, learning center professionals can effectively help students learn. On a personal note, when I share some of the concepts from both of Zull's books and discuss brain-based learning strategies with the students who meet with me, I often see a sense of relief come over them as they realize that they can do things to build more synapses and learn more effectively. The knowledge I have gained has significantly changed the way that I work with students in teaching them learning strategies. I now tie everything to the idea that "this is how your brain learns best" and have found that students respond to this. I highly recommend Zull's book to learning center staff, it could also make a great professional development activity for staff.

# BOOK REVIEW:

## *Your Creative Brain: Seven Steps to Maximize Imagination, Productivity, and Innovation in Your Life*

---

Carson, S. (2010). *Your creative brain: Seven steps to maximize imagination, productivity, and innovation in your life*. San Francisco, CA: Jossey-Bass.

**REVIEWED BY DEBRA MCLELLAN FETNER  
RETIRED, COLLEGE OF CHARLESTON**

"The differences between the brains of highly effective creative achievers and the brains of the rest of us are far less important than the commonalities . . . . *all of us have creative brains*" (Carson, 2010, p. ix).

While many people may consider creativity a natural gift—such that only few lucky people possess the supposed extraordinary minds of accomplished scientists, artists, and inventors—modern neuroscience may suggest otherwise. For decades scientists have studied what occurs in the human brain structure when its components are activated by creative thinking, the same brain structure possessed by all humans with healthy brains. One of these researchers goes beyond the study of the brain to the application of creative activities that stimulate brain energy, suggesting that one can practice artfully designed exercises that manipulate and affect brain activation patterns in order to produce, alter, or improve creative mental capabilities. In her book *Your Creative Brain*, Harvard psychologist, researcher, teacher, and writer, Shelley Carson, PhD, outlines seven brain activation patterns as her CREATES brainsets model, the biological influence of how people think, approach problems, and perceive the world (p. 14). Practical by design, the book addresses cognitive issues people face in a fast-changing world and illustrates strategies, devised from Dr. Carson's research of students enrolled in her creativity classes, clients in various creative professions, and others with whom she's consulted, to maximize the use of creative mental functions. The objective of these activities is to enhance human creativity for enrichment, ability, and adaptability, ultimately leading the user to the awareness of when and how to access the most appropriate brainset(s) for the optimal creative experience.

Further, her work deals with alternative ways to approach learning and presents the process of learning as something one can manipulate and control. Although particular parts of the brain are designed to control functions and abilities, they are not inflexible. For example, the brain's executive center, primarily the prefrontal cortex, controls many aspects of learning, yet it is nonetheless responsive to human social and cultural occurrences. The brain reacts to a variety of experiences.

While Carson admits her brainset(s) ideology is not scientifically proven through laboratory trials, the model is based on findings from a variety of sources—neurology imaging, studies of brain injury patients, neurological and psychological research, interviews and tests with creative subjects, and analyses of the lives of creative people. Using these case studies, Carson classifies the characteristics of various ways of creative thinking and outlines her seven brain states. These conceptions of creativity are presented as transient states rather than more stable traits.

The bulk of the book devotes a chapter to each of the seven creative brainsets—Absorb, the receptive, nonjudgmental, open brainset; Envision, the imagination brainset; Connect, the use of divergent thinking to connect seemingly unrelated ideas; Reason, the convergent, logical, executive function brainset; Evaluate, the focus and judge brainset; Transform, the attention to emotion brainset; and Stream, the flow, peak performance, in-the-zone brainset. Each chapter is outlined in three parts, consisting of the definition/description of the brainset, its neuroscientific basis and evidence, and brain activation techniques and activities for the reader to practice.

According to Carson, many people reside in their “mental comfort zone” (p. 19), the brainset or brainsets in which one may be realizing and utilizing only of portion of one’s capacity to think creatively. Practicing the activation of other brainsets that enable a variety of thinking processes can lead to more productive and creative outcomes. One interesting portion of the book is the description of the exercises that alternate between using somewhat opposing brainsets to stimulate different neuron networks. This feature emphasizes the purpose of the book—being able to move into each of the brainsets and moving flexibly among them is the way to enhance creativity (p. 269).

Carson’s writing on a topic that is often complicated by scientific terminology is made understandable with her lightly humored prose, layman’s descriptions, and embedded examples. It is a fun TRY THIS! type of book, leading the reader to peek ahead to the end-of-chapter “homework.” Her discussion of brain activation is skillfully accompanied by simple black and white drawings, allowing the reader to follow her research methods. The author shares her findings in other sources from her blog in Psychology Today to her website [www.ShelleyCarson.com](http://www.ShelleyCarson.com) to her appearances on national radio and television programs.

In an age of global interaction, information growth, and electronic communication, the power to adapt thinking is vital to enhance productivity, to contribute meaningfully, and to experience fully. Of special interest to educators is learning not only how to personally enhance creative thinking by recognizing when to access the appropriate brainset but also how to make sure students are aware of and employ methods that lead them to develop creative thinking processes. The exercises demonstrated in the book are useful for tutor training programs as a way of helping professional or peer tutors discover creative capacities. Many learning center leaders, perhaps, will find this work useful as a way of getting to know how one’s staff approaches problems. The exercises can be part of staff training or retreats. The exercises could make for fun, stimulating exploration—a shake up—of one’s established thinking.

With neuroscience becoming the “it” science of today, colleges are adding major and minor courses of study and incorporating more discussion not only in cognitive psychology classes but also in education classes. Books that are readable and provide practical applications concerning an otherwise complicated science are certainly great additions to the educator’s bookshelf. After reading Dr. Carson’s book, one can more easily understand the brain’s flexibility and its powerful potential.





# Pertinent Publishing Parameters

---

---

The Learning Assistance Review (*TLAR*), the national peer reviewed official publication of the National College Learning Center Association (NCLCA), publishes scholarly articles and reviews that address issues of interest to learning center professionals (including administrators, teaching staff, faculty, and tutors) who are interested in improving the learning skills of postsecondary students. Primary consideration will be given to articles about program design and evaluation, classroom-based research, the application of theory and research to practice, innovative teaching and tutoring strategies, student assessment, and other topics that bridge gaps within our diverse profession.

## Categories for Submission

### Articles

- ◆ Topics: *TLAR* will accept manuscripts that address our purpose: to publish scholarly articles and reviews that address issues on program design and evaluation, classroom-based research, the application of theory and research to practice, innovative teaching and tutoring strategies, student assessment, etc.
- ◆ Types: *TLAR* will accept manuscripts for the following four of the article types outlined in the American Psychological Association Manual: empirical study and articles on review, theory, and methodology. Follow 6th edition APA manual (sections 1.01-1.04) for specific requirements and structure for each type; regardless, all manuscripts need a clear focus that draws a correlation between the study, review, theory, or methodology and learning assistance practices.

### Joining the Conversation

- ◆ Idea Exchange: Discussion directly related to articles published in *TLAR*. Submissions are limited to fewer than 4 paragraphs and are to be constructive idea exchanges. In addition to the name, title, college, and contact information from the submitter, Idea Exchange submissions are to include the details of the referenced article (Title, author, and volume/number, and academic semester/year). A submission form may be found online on the *TLAR* website.
- ◆ Further Research: Article submissions that have a stated direct link to prior published *TLAR* articles. These articles will be considered following the manuscript submission guidelines.

## **Book Review**

Book review requests should be accompanied with two copies of the book to facilitate the reviewing process. Potential book reviewers are urged to contact the editorial team for details.

## **Manuscript Guidelines**

Manuscripts and reference style must be in accordance with the Publication Manual of the American Psychological Association (6th ed.). Submissions that do not comply with APA style will be returned to the author(s). Manuscripts must be original work and not duplicate previously published works or articles under consideration for publication elsewhere. The body of the manuscript may range in length from 10 to 20 pages, including all references, tables, and figures. Longer articles will be considered if the content warrants it. The authors are responsible for the accuracy of all citations and references and obtaining copyright permissions as needed. The only acknowledgments that will be published will be those required by external funding sources.

## **Submission Guidelines**

Submission packets must include:

- ◆ A cover page
- ◆ The original manuscript
- ◆ A masked manuscript for review
- ◆ One hard copy of these materials must be mailed to the address listed below.
- ◆ An electronic copy must be submitted to the e-mail address listed below.
- ◆ The title page must include the title of the manuscript (not to exceed 12 words); the name(s) and institutional affiliation(s) of all authors.
- ◆ The lead author should also provide work and home addresses, telephone numbers, fax, and e-mail information.
- ◆ All correspondence will be with the lead author, who is responsible for all communication with any additional author(s).
- ◆ The second page should be an abstract of the manuscript, maximum 100 words.
- ◆ To start the reviewing process, the lead author will be required to sign certificate of authorship and transfer of copyright agreement. If the manuscript is accepted for publication, all author(s) must sign an authorization agreement.
- ◆ Figures and tables must be black and white and according to APA style.

**Please send your comments and/or article submissions to:  
TLAR@missouristate.edu with a hard copy to  
Michael Frizell, Editor, *The Learning Assistance Review (TLAR)***

**Michael Frizell  
Director, Student Learning Services  
Bear CLAW (Center for Learning and Writing)  
Missouri State University  
Meyer Library, Room 112  
901 South National Avenue  
Springfield, MO 65897**

**phone: 417-836-5006  
e-mail: TLAR@missouristate.edu**

### **Review Process**

Author(s) will receive an e-mail notification of the manuscript receipt. The review process may include a peer-review component, in which up to three members of the *TLAR* editorial board will review the manuscript. Authors may expect the review process to take about three months. Authors may receive one of the following reviewing outcomes:

- (a) accept with minor revisions,
- (b) revise and resubmit with only editor(s) review,
- (c) revise and resubmit for second full editorial board review, and
- (d) reject.

As part of the reviewing correspondence, authors will be electronically sent the reviewers' rankings and general comments on one document and all the reviewers' contextual markings on one manuscript. Manuscript author(s) must agree to be responsible for making required revisions and resubmitting the revised manuscript electronically by set deadlines. Manuscript author(s) must abide by editorial revision decisions.

Accepted manuscripts become the property of the National College Learning Center Association and may not be reprinted without the permission of the NCLCA. Authors relinquish ownership and copyright of the manuscript and may only distribute or transmit the published paper if copyright credit is given to NCLCA, the journal is cited, and all such use is for the personal noncommercial benefit of the author(s).

# NCLCA Membership Information

---

---

## What is NCLCA?

The National College Learning Center Association (NCLCA) is an organization of professionals dedicated to promoting excellence among learning center personnel. The organization began in 1985 as the Midwest College Learning Center Association (MCLCA) and went "national" in 1999, changing the name to the National College Learning Center Association (NCLCA) to better represent its nationwide and Canadian membership. NCLCA welcomes any individual interested in assisting college and university students along the road to academic success.

NCLCA defines a learning center as a place where students can be taught to become more efficient and effective learners. Learning Center services may include tutoring, mentoring, Supplemental Instruction, academic and skill-building labs, computer-aided instruction, success seminars and programs, advising, and more.

## Join NCLCA

NCLCA seeks to involve as many learning center professionals as possible in achieving its objectives and meeting our mutual needs. Therefore the NCLCA Executive Board invites you to become a member of the Association.

The membership year extends from October 1 through September 30. The annual dues are \$50. We look forward to having you as an active member of our growing organization.

## Membership Benefits

- A. A subscription to NCLCA's journal, *The Learning Assistance Review*
- B. Discounted registration for the Fall Conference and for the Summer Institute
- C. Regular issues of the *NCLCA Newsletter*
- D. Voting Privileges
- E. Opportunities to serve on the Executive Board
- F. Special publications such as the Resource Directory and the Learning Center Bibliography
- G. Opportunities to apply for professional development grants
- H. Access to Members Only portion of the website
- I. Announcements of other workshops, in-services, events, and NCLCA activities

# Membership Application

On-line membership application or renewal available with PayPal payment option at: <http://www.nclca.org/membership.htm>. Contact Membership Secretary to request an invoice if needed.

OR

Complete the information below and send with your \$50 dues payment to the NCLCA Membership Secretary. Be sure to check whether you are a new member or are renewing your membership. If you are renewing your membership, please provide updated information.

**Please check one:**  New member  Membership renewal

Name \_\_\_\_\_

Title \_\_\_\_\_

Institution \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State/Province \_\_\_\_\_

Zip/Postal code \_\_\_\_\_

Phone number \_\_\_\_\_

Fax number \_\_\_\_\_

Make check payable to NCLCA.

Send completed application form and dues of \$50.00 (U.S. funds) to:

**NCLCA Membership Secretary**  
**Peggy P. Mitchell, Director**  
**Academic Advising & Student Success Center**  
**Wilmington University**  
**320 N. Dupont Hwy**  
**New Castle, DE 19720**  
**Office phone: 302.356.6810**  
**E-mail: [peg.p.mitchell@wilmu.edu](mailto:peg.p.mitchell@wilmu.edu)**  
**<http://www.nclca.org>**

# Notes

---

---



# Notes

---

---

# Notes

---

---







Christine Reichert  
TLAR Journal Editor  
The University of Toledo HSC  
MS 1046  
3025 Library Circle  
Toledo, OH 43614

Nonprofit Org  
US Postage Paid  
Permit No. 179  
Toledo Ohio