THE LEARNING ASSISTANCE REVIEW

Journal of the National College Learning Center Association

National College Learning Center Association

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.

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NCLCA's Definition of a Learning Center
The National College Learning Center Association defines a learning center at institutions of higher education as interactive academic spaces which exist to reinforce and extend student learning in physical and/or virtual environments. A variety of comprehensive support services and programs are offered in these environments to enhance student academic success, retention, and completion rates by applying best practices, student learning theory, and addressing student-learning needs from multiple pedagogical perspectives. Staffed by professionals, paraprofessionals, faculty, and/or trained student educators, learning centers are designed to reinforce the holistic academic growth of students by fostering critical thinking, metacognitive development, and academic and personal success.

Editorial Board

Contents

Letter from the Editor

For almost fifteen years, I've been arriving at my office around 6 a.m. where I write for almost two hours. Before I was publishing or completing coursework, I was writing plays for a local theatre company, book reviews for the local newspaper, or simply fleshing out ideas in the hope that I'd get back to them later. Writing was a form of therapy for me, conducted by an untrained therapist with a dreamer for a client. If doctors who treat themselves have fools for patients, what do authors who have no publisher call themselves?

Oh, yeah…they call themselves writers, and there's millions of us.

When I told people I was in school again, they get this look. It's not shock exactly, it's akin to the look one might deign to grant a homeless person, a furtive, steely, glassy-eyed look where their eyes cut my way but don't meet mine, instead staring through me, full of pious pity, mouths slack. Colleagues are in disbelief. With my track record of publishing, conference presentations, and editing their research articles or professional journals, many believed I already possessed a terminal degree and willingly chose to work as an undervalued staff member. Those outside of academia see my current comic book work, stage plays, and creative nonfiction publications and assume I'm living the vagabond life of the novelist. After publishing my first comic book on spec, a retrospective about the life of Christopher Reeve that was publicized on the Reeve Foundation's website, an actress in one of my plays, a technical writer who dreams of being a trashy romance novelist, bounced up to me and said, "You're doing it, Michael! You're living the dream!" If only.

When I enrolled in the Master of Fine Arts Program at the University of Arkansas – Monticello last year, my motives were career-based as I hoped to move from the position of Director of Student Learning Services to a faculty tenure track position in either the English or Theatre departments. In my current position, I oversee

the learning commons at Missouri State University, directly supervising and training Supplemental Instruction Leaders, Writing Center writing consultants, and study skills specialists. To keep my skills as a teacher sharp, I teach per course in the English, Theatre, First Year Program, and Public Affairs departments. I run this peer reviewed journal. I conduct research. I work as a freelance writer. During the development of this issue, I was also enrolled full-time in my MFA program. I have this pathological need to prove myself worthy to hold a faculty chair, and this seemed to be the route I needed to take as my BA and two MA's aren't enough to sustain me at the university level. I have to possess that piece of paper that claims I am good enough to hold a terminal degree.

In my current situation, the only option I had was an online program. After carefully researching options, I quickly dismissed the notion of obtaining a PhD in English or Theatre, a philosophy degree proving I have the credentials to theorize and question my chosen field and whose major perk is getting to be called "doctor" by nervous freshman who equate that word with emergency surgery. Low-residency MFA programs infect the web, and I realize that the MFA degree isn't recognized as a terminal one in some academic circles. Some programs are outrageously expensive, promising sit-downs with mid-level writers and artsy, starving poets. Others dangled the whispered promise of publication. Stringent residency requirements meant I would have to use valuable, sanity-restoring vacation time to travel to some exotic locale and hemorrhage money. My only hope was to find a newly established MFA program with no residency requirements from a school reputable enough to cultivate proud alumni and cheap enough to prevent me from donating plasma for book money. A new program would simultaneously allow me to make my mark while it found its footing. I've always enjoyed small, energetic programs. That's when I discovered UAMONT.

Obtaining a degree, in this case my fourth, was not without personal and professional risks. I'm constantly working, sometimes to meet deadlines, formerly to satisfy class requirements, and always to complete the business necessary to remain gainfully employed. My wife thinks I'm having an illicit affair with my laptop. My publisher sings my praises as his "best writer and top producer" while constant-

ly prompting me to write more. My boss, the Associate Provost for Student Development and Public Affairs, worries I'll burn out. My brothers think I'm crazy. My cousin, an editor for a small publishing firm in New York, is jealous. My students hesitate to tell me they're busy when they hear all I do in a week. And me?

I type. I edit. I retype. I submit. Repeat ad nauseam.

Hard work never scared me, and taking risks are as natural as breathing for anyone involved in the arts. Five years from now, I predict my life will be different. Perhaps I'll be writing a novel, or working full-time for a publisher while a regular paycheck from my writing graces my bank account. Or maybe, just maybe, I'll make the jump from staff member to faculty member. I'm not dreaming big. I'm not pinning my hopes on selling a screenplay to Stephen Spielberg, making the New York Times bestseller list, or landing a gig writing comic books for Marvel or DC. Would I turn any of that down? No. But I'm not looking at my career in that way. I'm old enough to realize that the promise of fame and fortune as a writer is a fleeting one reserved for those adept at navigating the labyrinth of publishing and tenacious enough to live on the fringes of poverty. I like stuff, and my days of living like a college student were over two decades ago.

The point is, I understand the struggle and the balance it takes to write an article such as those found in these pages, and I'm proud to share their work with you. So please, take the time to read the work of T. Gayle Yamazaki, Gary Packard, Douglas Lindsay, Edie Edmondson, Randall Gibb, Joseph Sanders, Heidi Schwenn, Scott Walchli, Steven Jones, Lorne Gibson, Kathleen O'Donnell, and Andrew D. Katayama, Greta Winograd and Jonathan P. Rust, Cassie Bichy and Eileen O'Brien, Alex Poole, and Stephanie Hopkins. They'll be thrilled you did.

Best,

Michael Frizell, Editor

Debunking the Myths Commonly Believed to Affect Test Performance among College Students

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Abstract

Although the perception of taking a quiz via paper-and-pencil vs. taking a quiz via a Classroom Response System (CRS) may vary substantially, performance on such quizzes may be less substantiated than originally perceived. In this experiment, we set out to gather data to investigate if such perceptions are true regarding quiz-taking methods. We also were interested in seeing if the time of day (morning vs. afternoon quizzes) had any effect on performance. To evaluate the differences between quiz taking methods and time of day factors, randomly assigned students to sections were created by the registrar's office. A total of 404 college freshman enrolled in an introductory psychology class took part in this study. Data were analyzed to see if the myths commonly believed to affect college student test performance really exists and the results are discussed.

In recent years, Classroom Response Systems (CRS) have become increasingly popular in educational settings (Bjorn et al., 2011; Hoekstra, 2008; MacArthur & Jones, 2008; Zhu, 2007) as well as in medical training settings (Thomas, Monturo, & Conroy, 2011). Not only are CRS being used for demonstrating concepts (Shaffer & Collura, 2009), they are also being used for student assessment of course content (Mezeske & Mezeske, 2007; Yourstone, Kraye, & Albaum,

2008) and facilitating critical thinking in class (Mollborn & Hoekstra, 2010). The use of the CRS as an assessment device has prompted some faculty and students to be concerned that there may be advantages to taking a multiple-choice quiz using paper-and-pencil administration as compared to using a CRS (Epstein, Klinkenberg & Wiley, 2001). One of the perceived advantages to using paper-and-pencil administration is that students would be able to refer back to previously answered questions and be able to change their answers to improve their overall score. While there have been some studies to support this notion on basic knowledge and comprehension items on multiple-choice tests (Geiger, 1997), the same was not found on more conceptually based or higher-order items. Further, other studies have found that two mediating factors that correspond to improved performance may be attributed to 1) metacognitive factors (e.g., signal detection and discrimination) and 2) timed-responses (the method used in the present study) more than changing answers with respect to the proportion of correct responses (Hanna, 2010; Higham & Gerrard, 2005). On the other hand, some researchers contend that this perception can be mediated by allowing students to change their responses on the clicker device within the prescribed time limit set by the instructor (Caldwell, 2007; Croupch et al., 2004). From a historical perspective, Mueller and Wasser (1977) report that changing responses on objective tests generally lowered students' scores. The purpose of our study was to examine whether or not there is a difference in average student quiz scores when comparing paper-and-pencil administration with CRS administration of course quizzes. It was expected that there would not be a significant differences between the administration methods, time of day, and that there would not be an interaction between the two variables studied.

Method

This was a quasi-experimental study in which all students were assigned by the registrar's office to each of the 25 course sections of Introductory Psychology. Based on student extracurricular activities, validation of courses, and placement examinations the registrar's office placed students into sections on a random basis. In other words, students were not allowed to choose instructors or sections. All participants (N=404) were freshman in college (age range: 17 to 23

years; female=61 and male=343; Ethnic heritage–European-American=301, Hispanic/Latino(a)=25 African-American=17, Asian/Pacific Islander=37, Native American, not specified=20).

Each of the 25 sections of Introductory Psychology were divided into the two administration groups using the following criteria: a) morning versus afternoon course offerings, b) instructor preference for quiz administration method, and c) balance between the types of quiz administration.

Table 1
Number of sections assigned to each condition

	Paper and Pencil	CRS
Morning	9	6
Afternoon	4	5

Number of sections per condition

Eleven Quizzes were administered throughout the semester. Each quiz consisted of ten multiple-choice questions with four answer choices and each question was worth two points for a total of 20 points per quiz. All students were given the same quiz questions, only the administration method varied between the two conditions. The first four quizzes were accomplished using the CRS to help tease out any priming factor related to instructor bias (Thomas, Monturo, & Conroy, 2011). To help ensure that all faculty and students were comfortable using the CRS, the experimental phase of the study was only conducted on the remaining seven quiz administrations. If a student was absent from class during the administration of the quiz, his/her score was not used in the data analysis.

Paper-and-Pencil quiz administration. Each student was given a single sheet of paper with ten multiple-choice questions printed out in standard 12-point font. Students were given approximately ten minutes to accomplish the quiz. Students for whom English was a second language were given 20 minutes to complete the quiz if necessary.

Classroom Response System quiz administration. Using PowerPoint© slides and IClicker© software, each multiple-choice question was presented separately. The students were given approx-

imately one minute to respond to each question, for a total of ten minutes per quiz (same time as the paper-and-pencil condition). Classrooms in which there was a student for whom English was a second language, two minutes was used for a total of 20 minutes. If all students responded to a question before the allotted time, the instructor would query the students to ensure all students had sufficient time to respond to the question and then the next question would be presented.

Results

Upon completion of the semester, quiz scores were acquired from the iClicker© software program and from the institutional database system for paper-and-pencil administered quizzes. An independent sample t-test was used to compare the means for the first four quizzes for the CRS and the paper-and-pencil administration groups to assess whether or not there were any preexisting differences between the groups (baseline measures). As a result, no statistically significant differences were found on the first four quizzes, $t(259)=-1.64$, $p=0.102$. Levene's test for equality of variance met criteria for equal variances. Table 2 presents the means and standard deviations for the groups.

Table 2

Quiz means and standard deviations for each condition

	Administration Method	N	M	SD
Quiz Total: 1-4	paper	128	61.460	8.302
	I Clicker	133	63.060	7.439
Quiz Total: 5-11	paper	227	119.551	11.021
	I Clicker	89	119.494	10.181

	Time of Day	N	M	SD
Quiz Total: 1-4	Morning	168	61.381	7.942
	Afternoon	93	63.892	7.602
Quiz Total: 5-11	Morning	247	118.939	11.101
	Afternoon	69	121.681	9.277

Additionally, we found no statistically significant difference between quiz time of day (morning means vs. afternoon means) on the first four quizzes, $t(314)=-1.87$, $p=.065$. These tests of differences were conducted to ease out any initial differences between administration type and instructor bias that Thomas, Monturo, and Conroy (2011) reported. These results also gave us confidence that there were not any time of day effect that may have randomly occurred.

An Independent samples t-test was also used to compare the means for quizzes 5-11 between the quiz administration types (CRS vs. paper-and-pencil). Again, we found no statistically significant difference between administration methods $t(332)=1.05$, $p=0.292$. Table 3 presents the t-table results for group comparisons including Levene's test for equal variances.

Table 3
Independent Samples t-test results
Quiz Administration Method

	Levene's Test for Equal Variances	F	Sig	t	df	Sig (2-tailed)
Quizzes 1-4	Equal Variances Assumed	1.710	.192	-1.640	259	.102
Quizzes 5-11	Equal Variances Assumed	.047	.828	1.055	332	.292

This assumption was satisfied in each of the analyses. An Independent sample t-test was used to compare the means for quizzes 5-11 between the times of day (morning vs. afternoon). Again, we found no statistically significant difference between time of day the quiz was administered $t(332)=-1.19$, $p=0.231$. Table 4 presents the t-test results.

Table 4
Independent Samples *t*-test results
Time of Day

		F	Sig	t	df	Sig (2-tailed)
	Levene's Test for Equal Variances					
Quizzes 1-4	Equal Variances Assumed	3.424	.065	-1.876	314	.062
Quizzes 5-11	Equal Variances Assumed	1.930	.166	-1.199	332	.231

A one way analysis of variance (ANOVA) was conducted to investigate if there was an interaction between quiz administration group (CRS vs. paper-and-pencil) and quiz time of day (morning vs. afternoon). Results of the ANOVA found no statistically significant interaction, $MSE=94.869$, $F(1, 330)=.116$, $p=.733$. Further, a partial eta squared$=.002$ suggests that the administration type and time of day had a small interactive effect on the outcome. Table 5 presents the interaction results from the analysis of variance.

Table 5
ANOVA Table
Quiz Administration Method x Time of Day Interaction
Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Corrected Model	267.964[a]	3	89.321	.942	.421	.008
Intercept	2406478.679	1	2406478.679	25366.424	.000	.987
AMPM	162.238	1	162.238	1.710	.192	.005
Group	70.509	1	70.509	.743	.389	.002
AMPM * Group	11.022	1	11.022	.116	.733	.002
Error	31306.658	330	94.869			
Corrected Total	31574.623	333				

Conclusion
Although some of our faculty and students believed there was a substantial advantage to taking quizzes using the paper-and-pencil

administration method, the findings of this study suggest that students score equally well using either method of quiz administration.

In an ever-changing technological environment, it is essential that instructors have some understanding of the role/impact the introduction of technology may have on student performance. The findings of this study suggest that the administration method used to deliver a quiz (paper-and-pencil or CRS) did not impact the overall student average quiz scores across a semester. What this suggests is that in cases in which course-wide consistency is an important factor in course delivery, presentation and administration, the method by which quizzes are administered can be left to instructor discretion. Instructors who choose to more fully incorporate the advantages of using a CRS throughout their course will not adversely impact student performance on quizzes across an academic term. Instructors who prefer to use the more traditional method of paper-and-pencil can do so as well.

Since there were no differences detected between average scores of student who were able to change answers (paper-and-pencil) and students who were not allowed to change answers (CRS), it may be that students are changing just as many answers from incorrect to correct as they are correct to incorrect. Therefore, it appears that there may be a misperception among faculty and students that the ability to change answers during a quiz leads to improved scores. This should be examined further in future studies.

Since we allowed instructors to use their own preferred method of quiz delivery, it is unclear what impact, if any, instructor preference might have on student performance. Although not a focus of this study, student attitudes toward the CRS closely aligned with known instructor feelings toward the system. Instructors were explicitly asked to not discuss or indicate to students their own attitudes about the CRS and they felt they had appropriately withheld their attitudes and opinions from their students. This observation might suggest that further study should be done to investigate whether or not instructor attitudes, particularly negative views, might adversely impact student performance. This line of research would provide needed insight to those departments and institutions who are examining the additional use of technology throughout their course offer-

ings.

There were several lessons learned during the administration of this study. First, Students stated that they would use a later question to help answer earlier questions on the quiz. If quiz questions are carefully developed to avoid having the answer to one quiz question embedded within another question this objection to the CRS is negated. Secondly, to the surprise of some of our faculty, we found that students were very adept at determining the attitude of the instructor with respect to use of the CRS for quiz administration. Students of faculty who had unfavorable opinions with regard to the CRS had more negative student opinions related to CRS use for quizzing. In response, we allowed instructors to select which administration method they preferred. And finally, having a non-graded practice quiz using the CRS, as well as various concept demonstrations using the CRS increased student comfort and confidence in the CRS.

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Stigma, Awareness of Support Services, and Academic Help-Seeking Among Historically Underrepresented First-Year College Students

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Abstract

The goal of this study was to better understand factors that facilitate and hinder academic help-seeking among first generation college students and students from other backgrounds underrepresented in higher education. Ninety-five students, the majority of whom participate in an opportunity or mentorship program on the campus of a public comprehensive college, were surveyed during their first semester in college. Results from a series of multiple regression analyses suggest that stereotype threat and self-stigma present challenges to adaptive academic help-seeking beliefs and behaviors, whereas a greater sense of belonging on campus, participation in the Educational Opportunity Program (EOP), and awareness of campus support services minimize these barriers. Recommendations are provided based on these findings for helping students from underrepresented backgrounds who are early on in their college careers to feel more comfortable seeking and benefitting from academic support services.

Keywords: academic help-seeking, belonging, Educational Opportunity Program (EOP), stereotype threat, stigma

"As the demographics of higher education in this country continue to change, so too will the challenges faced by academic support programs that strive to help students overcome obstacles to seeking help with their studies." (Collins & Sims, 2006, p. 219)

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In the United States, a higher education achievement gap continues to exist whereby college students from backgrounds that have been historically underrepresented in higher education (e.g., lower socio-economic status, first in their families to pursue post-secondary studies, possessing a racial or ethnic background not shared by the majority of students who attend college), on average, have lower persistence rates or take longer to complete their degrees (United States Department of Education, National Center for Education Statistics, Institute of Education Sciences, 2011). While different avenues of academic support, both formal and informal, are available on college campuses to help students succeed academically and graduate in a more timely manner (Coladarci, Willet, & Allen, 2013; Rheinheimer, Grace-Odeleye, Francois, & Kusorgbor, 2010), many students from underrepresented backgrounds do not make full use of such assistance. The goal of the current study was to examine academic help-seeking attitudes, knowledge, and behaviors among students from underrepresented backgrounds with the hope of better understanding conditions that make academic help-seeking when warranted more likely.

Literature Review

Academic Underpreparedness

Students who are the first in their families to attend college, from low-income backgrounds, or African-American or Latino/a are less likely to have taken college preparatory courses in high school (Chen, 2005; Rivas-Drake & Mooney, 2008), and first generation students in particular are more likely to report weak academic skills in areas such as reading and mathematics (Stebleton & Soria, 2012). A lack of college-preparatory coursework predicts challenges in academic adjustment once students enroll in major fields of study (Chen, 2005). Along these lines, first generation college students and students who received public assistance in the past were found to feel less academically prepared and to have lower grade point averages (GPA) during their freshmen and sophomore years than students who did not possess these characteristics (Rivas-Drake & Mooney, 2008). Insufficient study skills have also been reported among first generation college students (Stebleton & Soria, 2012). Furthermore, first generation students have been found to earn fewer credits during

their first semesters in college, due to more withdrawal and failure grades, a phenomenon that poses challenges to timely graduation (Chen, 2005).

Benefits of & Barriers to Academic Help-seeking

If students do not do well in a course, they may have difficulty believing they can succeed in future courses, and lack of academic self-efficacy in turn can predict dropout (see Gloria & Robinson Kurpius, 1996). On the other hand, students who are less academically prepared when they enter college benefit in terms of both GPA and college persistence when they receive formal academic support (Coladarci et al., 2013; Laskey & Hetzel, 2011), particularly when such help is received early in their college careers (Tinto, 2004).

Nevertheless, we know that many students from backgrounds that are well-represented on campuses and who are at risk for or already in academic trouble do not seek support in a timely manner (Collins & Sims, 2006). In fact, when students are at risk of the worst academic outcomes, including failing a class, help-seeking becomes least likely (Karabenick & Knapp, 1988). Lack of awareness of services available and how to access them are important potential barriers to consider with regard to academic help-seeking. Other reasons for not seeking help include the necessary step of acknowledging personal challenges during the help-seeking process and the fear that not succeeding after getting help would be a true indication of lack of ability (see Karabenick & Knapp, 1988). These reasons reflect negative self-judgments that may be prompted during the academic help-seeking process. We (the authors) refer to the thinking process in which negative self-judgments or fears of negative judgments from others are triggered when academic help-seeking is considered as *self-stigma for academic help-seeking*. This conceptualization is based upon Vogel, Wade, and Haake's (2006) work relative to self-stigma for mental health service use. Furthermore, we view stigma for academic help-seeking as a potential barrier to (a) seeking help and/or (b) becoming productively engaged with an academic support service provider even when help is sought.

Students from underrepresented backgrounds face additional barriers to academic help-seeking that may be more difficult to detect but no less powerful. Based on their comparative analysis of inter-

views with first generation college students and college students for whom at least one parent had a college degree, Collier and Morgan (2008) found that first generation college students struggle more in navigating how to meet professor expectations, a vital skill for college success and one that may be gained via strategic help-seeking (Collins & Sims, 2006). However, belonging uncertainty—which students from underrepresented backgrounds are more likely to experience than other students—is associated with student doubts about their skills and abilities, which in turn are associated with taking less advantage of learning opportunities and poorer academic achievement overall (Gritsch de Cordova & Herzon, 2007; Walton & Cohen, 2007). In particular, a weaker sense of belonging among students has been associated with less frequent discussions of course material with other students and faculty outside of the classroom milieu (Hurtado & Carter, 1997). Collier and Morgan (2008) found that first generation students, in addition to reporting feeling too intimidated to seek help from their professors, sometimes did not understand that professors were available to assist them during office hours.

Stereotype threat may also have implications for academic help-seeking (Collins & Sims, 2006). Students who experience stereotype threat feel burdened by nature of belonging to a group for whom others may have expectations of academic failure (Steele & Aronson, 1995). Students from underrepresented backgrounds have been found to express greater apprehension than other students that poor performance would be seen as linked inextricably to their ethnic background (Cohen & Garcia, 2005). According to Massey and Fischer (2005), even students who themselves do not regard stereotypes about their academic ability as true may be reluctant to seek needed help with course material, because to do so would risk confirming such stereotypes. Thus, the potential for being perceived as less capable could cause some students to disengage from the very resources that are designed to be helpful to them.

Academic Support Services and Other Campus Support Programs

Many college campuses house programs that are designed to promote the academic success of historically underserved students. In addition to referring students to academic support services, these

programs may themselves offer study groups, access to tutors, and study skills or remedial courses.

More than half of the students in the current study were drawn from the Educational Opportunity Program (EOP) at the college where the study took place. EOP's mission is to improve access and retention of historically underserved students. Students accepted into the college through EOP are "admit by exception" (Gritsch de Cordova & Herzon, 2007, p. 12). They are financially and academically disadvantaged and tend to be first-generation college students. The program provides students with a range of support services, including: an extended orientation program the summer before students' first year; EOP counselors with whom students meet regularly throughout their time in college about their personal and educational adjustment as well as professional goals; peer mentors; and an evaluation system whereby students and EOP counselors are informed mid-semester about students' academic progress in courses. To maintain status in EOP, students are required to adhere to a contract that requires them to attend EOP study groups and seek tutoring from the Learning Center when recommended by their counselors. The EOP program on the college campus where this study took place has been recognized for promoting retention and graduation rates that exceed those of the college campus at large as well as EOP programs on other campuses that are part of the same state system.

About 1/4 of our sample was drawn from two other programs: the campus-based Scholar's Mentorship Program (SMP) and the College Science, Technology, Engineering Program (C-STEP) program. As part of its mission to enhance academic success and leadership potential while instilling a sense of belonging, SMP pairs underrepresented and economically disadvantaged students with college faculty and staff mentors and peer mentors. C-STEP is part of a New York State initiative designed to increase the number of underrepresented groups in mathematics, science, technology, and health-related fields. Students in C-STEP are assigned special advisors with whom they can discuss their personal, academic, and professional development. C-STEP also provides peer and professional tutoring for coursework relevant to its mission as well as research and internship opportunities.

Programs like EOP, SMP, and C-STEP appear promising in terms of their potential to counteract some of the barriers to academic help-seeking discussed above. However, there is a gap in the empirical research literature with regard to how program participation and specific program characteristics may contribute to attitudes and behaviors around the actual seeking of academic support.

Research Questions

Investigation into factors that facilitate and hinder academic help-seeking among college students from underrepresented backgrounds is a markedly underresearched area overall (Volet & Karabenick, 2006). The literature reviewed above suggests that particular background characteristics and experiences (e.g., academic underpreparedness; belonging uncertainty; stereotype threat) of students from underrepresented backgrounds on college campuses are tenable predictors of self-stigma for academic help-seeking and lack of awareness of academic support services -- barriers to actual academic support service use; on the other hand, participation in other support programs on campus (i.e., opportunity, mentorship) appears to have the potential to minimize such barriers.

Based upon the theories and findings reviewed above, we developed two sets of hypotheses. First, we hypothesized that self-stigma for academic help-seeking would be predicted by: (a) greater academic need; (b) a poorer sense of belonging; and (c) more intense experiences of stereotype threat. In the statistical analysis testing this hypothesis, we also examined the extent to which type of program participation (EOP, SMP or C-STEP, none) contributed to less self-stigmatizing attitudes.

Next, we hypothesized that greater awareness of academic support-services on campus would be predicted by: (a) a greater sense of belonging; (b) less intense experiences of stereotype threat; and (c) higher levels of self-stigma for academic help-seeking. In the statistical analysis testing this hypothesis, we also examined the extent to which program participation (EOP, SMP or C-STEP, none) contributed to greater awareness of academic support services, knowledge that we envisioned as conducive to help-seeking. Finally, we investigated the extent to which the variables under investigation predicted actual academic help-seeking behaviors.

Our hope was that findings from this investigation would have the potential to inform efforts by Learning Center and other support program personnel—as well as others who work with students from underrepresented backgrounds to promote their academic success—to facilitate academic help-seeking among students who would likely benefit from such support services yet are reluctant to seek them. Students early on in their college careers were chosen as the focus of this investigation because issues of belonging are particularly salient during major transitions (Dasgupta, 2011), because students are at the greatest risk of dropout during their first few semesters of college (Thayer, 2000), and because this is a time during which adaptive decisions and behaviors can influence later success (Hurtado & Carter, 1997).

Method

Participants

The setting for this study was a mid-size public 4-year comprehensive college in a small town in the Northeast. The sample consisted of 95 first-year students from underrepresented backgrounds: 66 females (69.5%) and 29 males (30.5%). The mean age of the sample was 18.70 years (SD=.53). In the current study, 18 students (18.9%) self-identified as African-American, 29 (30.5%) identified as Latino/a, 16 (16.8%) self-identified as Asian, 6 (6.3%) self-identified as White, and 26 (27.4%) self-identified as belonging to two or more of these cultural identities. The majority of the students (58; 61.1%) who participated in the study were first generation college students, whereas 37 (38.9%) were not.

Of the participants, 64 (67.4%) participated in the Educational Opportunity Program (EOP) on campus, 23 (24.2%) participated in the Scholar's Mentorship Program (SMP) on campus, and 1 student (1.1%) participated in the Collegiate Science and Technology Entry Program (C-STEP). Seven students (7.4%) did not self-identify as participating in any of these programs.

Measures

Academic need. Academic need was measured via a 7-item self-report scale informed by the work of Collins and Sims (2006) and created for the current study. This scale contained six items (e.g., "I understand my professors' expectations and standards in most

of my courses") with responses on a Likert-scale ranging from 0 (strongly disagree) to 9 (strongly agree) and one item asking students if a professor, counselor, or advisor had recommended seeking help from the writing or tutoring center with possible responses of (a) yes, more than once, (b) yes, once, or (3) no. This scale yielded an alpha of .72 in the current study. Higher scores indicated greater academic need.

Stereotype threat. Stereotype threat was assessed with Massey and Fischer's (2005) 9-item Performance Burden self-report scale with Likert responses ranging from 0 (total disagreement) to 10 (total agreement). Items on this scale include: "If instructors know my difficulty in class, they will think less of me" and "If I excel academically, it reflects positively on my group." Internal consistency reliability of this scale was found to be .714 among a large sample of students from African-American, Latino/a, Asian and White backgrounds who participated in the National Longitudinal Survey of Freshmen (NLSF; Massey & Fischer, 2005). Higher scores indicated the experience of more performance burden.

Belonging. Sense of belonging was assessed with two measures, the Cultural Congruity Scale (CCS; Gloria & Robinson Kurpius, 1996) and the University Environment Scale (UES; Gloria & Robinson Kurpius, 1996). Gloria et al. (1996) have written that both measures, when administered together, provide a more comprehensive picture of perspectives students have of their learning environment as well as their sense that they have a place there. The CCS is a 13-item instrument that was designed to measure sense of cultural congruence within the college environment among students from minority backgrounds and asks students to indicate the extent to which they have experienced a certain feeling or situation at school (e.g., "I feel I am leaving my family values behind by going to college") on a 7-point scale ranging from 1 ("not at all") to 7 ("a great deal"). The CCS has been found to yield alphas between the low .70s and the low .80s among students from Latino/a and African American backgrounds (Gloria et al., 1996; Gloria, Robinson Kurpius, Hamilton, & Willson 1999; Winograd & Tryon, 2009).

The UES is a 14-item self-report instrument designed to measure student perceptions of perceived warmth and support provided

by the college environment and student comfort level and sense of feeling valued (e.g., "I feel as though no one cares about me personally on this campus") and was developed specifically to measure these components among students from racial and ethnic backgrounds underrepresented on college campuses. Students indicate the extent to which each statement applies to them on a 7-point scale ranging from 1 ("not at all") to 7 ("very true"). The UES has been found to yield alphas in the low to mid .80s for students from African American and Latino/a backgrounds (Gloria & Robinson Kurpius, 1996; Gloria et al., 1999). Higher scores on these measures indicated a greater sense of belonging.

Stigma for academic help-seeking. This self-report scale was adapted from Vogel, Wade, and Haake's (2006) Self-Stigma of Seeking Help (SSOSH) scale, which assesses self-stigma for seeking psychological help (e.g., "Seeking help would make me feel less intelligent"). Like the scale upon which it is based, the scale for the current study also contains 10 items measured on a 5-point scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The original scale showed strong internal consistency reliability (alphas between high .80s and low .90s) among a diverse sample of college students. The adapted scale yielded an alpha of .82 in the current study. Higher scores on this measure indicated higher levels of self-stigma.

Awareness of academic support services on campus. This 9-item self-report scale was created for the current study and assesses student knowledge of where academic support services are located and how to access services when needed (e.g., "I know where the .... center is on campus"; "I know how to get extra help from ... when/ if I need it"). This scale encompasses services available from professors, the Learning Center, academic advisors, the Writing Center, and the Career Center. Response options are on a 4-point Likert scale: 1 ("no"), 2 ("not really"), 3 ("sort of"), and 4 ("yes"). This scale yielded an alpha of .83 in the current study. Higher scores on this measure indicated greater levels of awareness of academic support services on campus and how to access them.

Academic support service use. This seven item self-report scale was created for the current study and assessed students' use of formal and informal academic support services, including those

included in our awareness measure ("I have visited a professor's office hours for help or because I had a question"; "I have gone to the Tutoring Center"; "I have gone to the Writing Center") as well as attending study groups and requesting assistance from classmates. Response options were either "yes, this semester" or "no." This scale yielded an alpha of .56 in the current study, indicating that the use of certain support avenues correlates only moderately with the use of others.

Procedures

Study participation was limited to students who were freshmen in the fall of 2010 and who met at least one of the following three criteria: (a) participant in one of the programs described above (SMP, EOP, C-STEP; see "Participants" section above), (b) member of a cultural group that contributes to a diverse society (e.g., African-American, Latino/a, Middle Eastern, Asian, bicultural background), or (c) first generation college student. These participants are part of an ongoing longitudinal study investigating predictors of academic achievement and retention among underrepresented college students. Participants completed a packet of questionnaires in paper-and-pencil form that included the measures described above towards the end of their first semester in college.

Data Analyses

Program, academic need, cultural congruity, university environment, and stereotype threat scores were entered as predictors, along with covariates (sex, ethnicity, generational status), in two sets of multiple regression analyses, first with stigma for academic help-seeking as the dependent variable and next with awareness of academic support services on campus as the dependent variable. In the model predicting awareness of academic support services, stigma for academic help-seeking was also included as a predictor. Finally, both barriers were entered along with the other predictors into a multiple regression model predicting academic actual service use during the students' first semester in college. For all multiple regression analyses: students in SMP and C-STEP were combined into one group, EOP program participation served as the reference group for the program variable, and students from African-American backgrounds served as a reference group for the ethnicity variable. Standardized beta weights

(β's) are reported to simplify interpretation of effect sizes.

Missing data were rare (≤3% per variable included in the regression analyses reported below). If a participant was missing one or more items on a predictor or outcome variable, this score was not included. A multiple imputation missing data analysis was performed in SPSS across five imputed data sets and a pooled data set yielding comparable effect sizes and statistical significance levels to those reported below. According to Cohen (1992), a sample of this size (N=95) is sufficient to detect medium effect sizes in multiple regression analyses with five predictor variables at the p<.05 level.

Results

Background Variables

Male students (M=75.86, SD=12.79) reported higher levels of cultural congruity than female students (M=69.34, SD=12.51), t(91)=-2.311, p<.05. Students in EOP reported higher levels of academic need (M=20.00, SD=8.47) than students in SMP and C-STEP (M=16.54, SD=9.16), t(85)=1.67; this difference approached statistical significance, p=.10. The overall ANOVA model for ethnicity predicting academic service use yielded an F(4, 87)=2.585, p<.05. In post-hoc tests, students identifying as Asian (M=3.69, SD=1.35), p<.01, and Latino/a (M=4.31, SD=1.42), p=.08, reported lower levels of overall academic service use than students from African-American backgrounds (M=5.00, SD=1.24), with the second difference approaching statistical significance. Students did not differ in a statistically significant manner on any other predictor or outcome variable based on gender, ethnicity, program participation, or first generation college student status. During their first semester in college: 70 (73.7%) of the sample reported having participated in a study group; 72 (75.8%) reported having visited a professor's office hours for help or because of a question; 64 (67.4%) reported using the Tutoring Center; and 28 (29.5%) reported using the Writing Center.

Correlations among Predictor and Outcome Variables

As can be seen in Table 1, greater levels of belongingness as measured by cultural congruity and comfort within the university environment were related to lower levels of self-stigma for academic help-seeking. On the other hand, stereotype threat was positively

Table 1
Correlations among predictor and outcome variables (*N*=94)

	1	2	3	4	5	6	7
	Predictor Variables						
1. Academic need	---	-.29**	-.19	.07	.08	-.04	.29*
2. Cultural congruity		---	.41**	-.49**	-.34**	0.09	.06
3. University environment			---	-.39*	-.44**	.27**	.05
4. Stereotype threat				---	.46**	-0.14	-.12
	Outcome Variables						
5. Stigma (SSOSH)					---	-.36**	-.13
6. Awareness of services						---	.47**
7. Use of services							---
M	18.64	71.38	81.28	42.59	14.35	30.55	4.39
SD	8.99	12.89	10.23	14.32	5.56	5.61	1.36

*p<.05. **p<.01.

related to self-stigma. Comfort within the university environment was also positively related to awareness of support services on campus, whereas stigma surrounding academic service use was negatively correlated with awareness of academic support services. Finally, both academic need and awareness of academic support services were positively associated with actual academic service use.

Regression Analyses

Our first hypothesis proposed that self-stigma for academic help-seeking would be predicted by: (a) greater academic need; (b) a poorer sense of belonging; and (c) more intense experiences of stereotype threat. In the statistical analysis testing this hypothesis, we also examined the extent to which program participation (EOP, SMP or C-STEP, none) contributed to less self-stigmatizing atti-

tudes. This multiple regression model yielded an R^2 value of .377; $F(12,77)=3.879$, $p<.001$. Males reported higher levels of stigma for academic help-seeking than females, $\beta=.210$, $p<.05$, representing a 1/5 of a *SD* difference. Both university environment ($\beta=-.230$), one of our measures of belonging, and performance burden, our measure of stereotype threat ($\beta=.298$), were statistically significant predictors (see Table 2). As perception of the university environment as a place

Table 2
Regression analyses results for self-stigma

Predictor	Self-Stigma for Academic Support Service Use ($N=90$)[a]		
	B	SE(B)	β
No program	-.939	2.409	-.042
SMP or C-STEP	1.859	1.346	.148
Academic Need	.025	.063	.041
Cultural Congruity	-.057	.051	-.132
University Environment	-.125*	.059	-.230*
Stereotype Threat	.117**	.043	.298**

Note. Sex, ethnicity, and first generation status were included as covariates. EOP was the reference group.
*$p<.05$. **$p<.01$.

where students are valued and experience comfort and warmth increased by 1 *SD*, self-stigma for academic support service use decreased by between 1/4 and 1/3 of an SD. On the other hand, with a 1 *SD* increase in the experience of stereotype threat, self-stigma for academic support service use increased by almost 1/4 of a *SD*. Thus, our hypotheses that a sense of belonging would decrease stigma for academic help-seeking and stereotype threat would increase such stigma were supported. All of these effect sizes were small. Neither academic need nor cultural congruity emerged as statistically significant predictors of self-stigma surrounding academic support service above and beyond the other predictors in the model, nor did we find that program participation (EOP, SMP or C-STEP, no program participation) predicted statistically significant differences in self-stigma.

Our second hypothesis proposed that greater awareness of

academic support-services on campus would be predicted by: (a) a greater sense of belonging, (b) less intense experiences of stereotype threat, and (c) lower levels of self-stigma for academic help-seeking. In the statistical analysis testing this hypothesis, we also examined the extent to which program participation (EOP, SMP or C-STEP, none) contributed to greater awareness of academic support services on campus and how to access them. The overall model yielded an R^2 value of .430 and was statistically significant, $F(13,75)=4.347$, $p<.001$. Neither measure of belonging (cultural congruity, university environment) nor stereotype threat emerged as a statistically significant predictor (see Table 3). These findings did not support corresponding

Table 3

Regression analyses results for awareness of services

Predictor	Awareness of Academic Support Services on Campus ($N=89$)[a]		
	B	SE(B)	β
No program	-9.518**	2.356	-.435**
SMP or C-STEP	-6.262**	1.385	-.476**
Academic Need	-.058	.062	-.093
Cultural Congruity	.028	.051	.063
University Environment	.063	.059	.114
Stereotype Threat	-.010	.043	-.024
Self-Stigma	-.244*	.111	-.239

Note. Sex, ethnicity, and first generation status were included as covariates. EOP was the reference group.
*$p<.05$. **$p<.01$.

hypotheses. Self-stigma, however, predicted awareness of academic support services in the expected direction, β=-.239, $p<.05$. Furthermore, compared to students in EOP, students who did not participate in a program, β=-.435, $p<.001$, and students in C-STEP or SMP, β=-.476, $p<.001$, were much less aware of academic support services on campus. These standardized beta weights represent between 1/3 and 1/2 of a *SD* difference, small to medium effect sizes.

Our final research question examined the extent to which actu-

al academic service use would be predicted by the variables under investigation. This model yielded an R^2 value of .465; $F(14,74)=4.588$, $p<.001$. Students from Latino/a backgrounds reported nearly statistically significantly lower rates of academic support service use than students from African-American backgrounds, $\beta=-.234$, $p=.06$, a 1/5 of an SD difference. Students in SMP and C-STEP reported much lower levels of academic service use than students in EOP, $\beta=-.403$, $p<.01$, a 1/3 to a 1/2 SD or small to medium effect size difference. Students higher in academic need reported greater use of academic support services, $\beta=.206$, $p<.05$, a 1/5 SD increase in academic service use with each 1 SD increase in reported academic need. Finally, awareness of academic support services on campus was a statistically significant predictor of overall academic service use, $\beta=.311$, $p<.01$, a 1/3 SD increase in actual service use with each 1 SD increase in awareness of services.

Table 4

Regression analyses results for use of academic support services

| Predictor | Academic Support Service Use on Campus ($N=89$)[a] | | |
	B	SE(B)	β
No program	-.351	.624	-.064
SMP or C-STEP	-1.274**	.360	-.403**
Academic Need	.031*	.015	.206*
Cultural Congruity	-.007	.011	-.075
University Environment	.007	.012	.062
Stereotype Threat	-.008	.014	-.061
Self-Stigma	.019	.028	.075
Awareness of Services	.076**	.027	.311**

Note. Sex, ethnicity, and first generation status were included as covariates. EOP was the reference group.
*$p<.05$. ** $p<.01$.

Discussion

Our goal in this examination was to identify avenues that may facilitate academic support service use when warranted while contributing to student engagement once service use is initiated. As

hypothesized, we found that students who felt less comfortable in and supported by the university environment also associated academic help-seeking with personal feelings of inadequacy and inferiority. This result extends upon findings that students from underrepresented backgrounds who experience higher levels of belonging uncertainty may incorporate fewer additional opportunities to learn into their academic experience (Walton & Cohen, 2007). We also found, as hypothesized, that self-stigma for academic help-seeking was predicted by the performance burden dimension of stereotype threat, according to which students believe that poor academic performance contributes to professors and other students looking down on members of the group to which they belong (Massey & Fischer, 2005). This was the strongest effect we observed in the hypothesis-testing portion of our analysis, lending support to Massey and Fischer's (2005) view that the risk of confirming stereotypes contributes to reluctance for academic help-seeking. It is also worth noting that when all variables in the model were considered together, the male students in the study appeared to associate academic help-seeking with personal feelings of inadequacy and inferiority to a greater extent than female students in the study. This difference may be explained by Wimer and Levant's (2011) finding that conformity to masculine gender norms including self-reliance was associated with academic help-seeking reluctance. Neither participation in a program on campus nor level of academic need appeared to be associated with the experience of more or less self-stigma pertaining to help-seeking.

Our second investigation focused on predictors of awareness about academic support services on campus and how to access such services. We found that students who participated in EOP reported greater awareness of support services on campus than other students in the study. This finding suggests that EOP personnel are effective in communicating this information to students in their program—an important step given the academic disadvantages students in EOP bring with them to college. We also found that the less students associated academic help-seeking with feelings of inadequacy and inferiority, the more aware they were of academic support services and how to access them. This finding suggests that self-stigmatizing attitudes may interfere with seeking out or retaining logistical infor-

mation concerning academic support services on campus.

The nature of our third analysis allowed us to examine which student characteristics and experiences predicted actual use of academic support services, including those provided by professors, tutors, and academic advisors. EOP program participation was the strongest predictor of service use. Students identifying as Latino/a reported lower levels of service use than students from African-American backgrounds. Finally, students reporting more need for academic assistance and more awareness of academic support services on campus also reported greater use of these services.

Implications

Awareness of barriers faced by students from underrepresented backgrounds in accessing academic support services can inform outreach efforts by and between Learning Center staff and other personnel who work with students from underrepresented backgrounds to promote their academic success (Stebleton & Soria, 2012). The recommendations below are provided as potential tools with which to engage students from underrepresented backgrounds who are struggling with their coursework in the academic help-seeking process.

Reducing self-stigma. When introducing the availability and nature of academic support services, as well as when providing such services, individuals who support students academically can take steps towards minimizing the potential for self-stigma among underrepresented students in need of assistance, including: reframing academic help-seeking as educational and professional development and as an intellectual enterprise—experiences from which every student can benefit; and creating opportunities for academically successful peer mentors to disclose their own academic help-seeking experiences, given evidence that disclosure of a stigmatized status during contact among individuals of equal status reduces stigma (see Hinshaw, 2007).

Also during referrals as well as actual help-seeking sessions, students can be engaged in conversations about their attitudes and expectations about academic help-seeking and about their adjustment to college (see Stebleton & Soria, 2012). For self-stigma related to stereotype threat in particular, emphasis during referrals and service

provision should be placed on academic challenges and opportunities to achieve one's potential (e.g., getting more out of one's education through one-on-one and small group discussions; improving one's ability to express important ideas in writing) rather than remediation (see Fischer, 2010). For self-stigma related to a diminished sense of belonging, students should be assisted to internalize the message that concerns about acceptance are common among students from all ethnic backgrounds, and that such concerns do not mean that students actually do not belong in college (Walton & Cohen, 2007). Additional attention should be directed towards communication with male students from underrepresented backgrounds—a demographic that is less likely to persist in higher education than female students from similar backgrounds (Aud, Fox, & KewelRamani, 2010)—as our findings suggest that they are inclined to experience somewhat higher levels of self-stigma for academic help-seeking.

Improving awareness of academic support services on campus. The finding that students who participated in EOP reported significantly higher levels of awareness of support services on campus than other students in the study suggests to us that communication of this information to students via EOP orientation programs and individual mentoring meetings is effective in increasing such knowledge. Moreover, tutoring and study groups are built into the program itself. Recommendations based on this finding can be generalized to other personnel who work with students from underrepresented backgrounds. For example, professors and advisors should be encouraged to share information about how to access academic support services on campus, including office hours, in written and oral communication early in the semester and whenever a referral is made. They should highlight the availability of such services at times of the semester when exams and papers are announced as well as when deadlines are approaching.

As a regular part of practice, Learning Center and other academic support personnel could communicate to professors, advisors, mentors, and other support program personnel their willingness to visit classes and participate in outreach and orientation programs in a manner that: speaks about services offered and their benefits; puts a human face on the services provided; addresses self-stigma; and

normalizes concerns students may have about "not belonging in college" when academic challenges are experienced. By the same token, professors, advisors, and mentors should consider inviting Learning Center and other academic support staff to the classroom and to meetings with students. Academic support service centers could be included as friendly destinations on informal and formal tours of the campus for students who are well-represented and underrepresented alike.

   Facilitating service use. Messages about the value of academic support services, such as those communicated by EOP counselors—as well as the offering of such services within the context of a program—appear to be effective in influencing adaptive academic help-seeking behavior. Students from Latino/a backgrounds may need additional encouragement to seek out assistance when needed, given the lower rates of service use reported among this subsample in our study and Zurita's (2007) findings that students from Latino/a backgrounds who did not persist in college reported "not taking the initiative and using university services" (Zurita, 2007, p. 137) as a reason. Finally, students from underrepresented backgrounds who appear to be less cognizant of their specific academic challenges should be encouraged to seek out services at the same time that these challenges are pointed out—supportively and as early as possible—as barriers to meeting their academic potential.

Strengths and Limitations

   The predictors we chose to focus on—belonging and stereotype threat—have been found in past research to be salient predictors of other adaptive academic behaviors and academic outcomes (e.g., Massey & Fischer, 2005; Steele & Aronson, 1995; Walton & Cohen, 2011). Furthermore, we focused on students early on in their transition to college, a time when belonging uncertainty and self-doubt are likely to be highest (Dasgupta, 2011) and applied the concept of self-stigma—increasingly recognized as an important factor in mental health service use (see Vogel et al., 2006)—to the academic help-seeking context, where it has been rarely examined.

   Larger subgroups of students from different ethnic backgrounds would likely have allowed us to detect additional statistically significant differences in academic help-seeking knowledge, attitudes,

and behaviors. The inclusion of a larger comparison group of students who share background characteristics with the study sample yet do not participate in programs on campus already designed to instill a sense of belonging is also warranted, as such students are likely at even greater risk of academic underachievement and dropout. This research was also completed at a single institution; therefore, the findings are limited in generalizability. Furthermore, the college where the study took place has been recognized for the relatively effective support programs already in place for underrepresented students. Such sampling and study characteristics may have contributed to more conservative effect size estimates than if they had not been in place.

Future Directions

Longitudinal research is needed that investigates attitudes towards, experiences in, and patterns of academic help-seeking relative to GPA, credits earned, persistence, and time to graduation among students from underrepresented backgrounds. Help-seeking behaviors specific to courses in which a student is struggling are important to consider in such investigations. Comparisons of associations between academic help-seeking behavior and the variables examined in this study across disciplines (e.g., Science Technology Engineering and Mathematics (STEM) vs. non-STEM fields) and conditions under which stereotype threat may be more and less prevalent (e.g., instructor or tutor from underrepresented vs. majority background, a "critical mass" of students from underrepresented backgrounds in courses vs. solo status) also have the potential to shed further light on academic achievement disparities.

Conclusion

Academic support service provision to students from underrepresented backgrounds is an important avenue for reducing higher educational disparities. We believe that the suggestions outlined above have the potential to contribute to a social context in which students from underrepresented backgrounds who are in need of assistance become more comfortable both initiating and continuing to make use of academic support services. Such service use—particularly during the transition to college—in turn has the potential to contribute to improved academic achievement, retention in postsecondary institutions of learning, and timely graduation.

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Course Redesign: Developing Peer Mentors to Facilitate Student Learning

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Abstract

UMBC faculty in the Psychology Department and staff in the Learning Resources Center (LRC) collaborated to integrate and train undergraduate Peer Mentors to facilitate small groups during Introductory Psychology classes and provide study sessions. This article reviews the selection process, training, and implementation of peer mentors in a course redesign. Students working with Peer Mentors demonstrated higher course grades than students seeking no assistance or working with Graduate Teaching Assistants. The cost savings using Peer Mentors was realized and reinvested. The attendance in class and in review sessions increased over time, and satisfaction with the course improved.

Higher education is striving to improve student success rates and respond to the varying levels of students' preparation for college coursework. Gateway courses have become the focus of these success efforts as "research demonstrates that meeting key academic milestones during the first year of college provides students with early momentum toward degree completion" (Education Trust, 2010). This empirical data have led to academic transformation in higher education, whereby faculty are challenged to alter classroom pedagogy to engage students and add technology to courses that will facilitate individual student learning and success, while at the same time respond to a challenging fiscal environment. This effort to achieve these outcomes in the Psychology Department at the University of Maryland, Baltimore County (UMBC) began with the redesign

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of Introductory Psychology.

The Introductory Psychology course had a DFW rate as high as 33%, log jamming students at the very onset of their undergraduate experience. These data signaled a need to review how the course was designed, delivered and evaluated. Large lectures with one professor and a graduate student responding to 210 students clearly was not contributing to success in the course. The redesign split the traditional 4-credit large lecture gateway course into 3 credit hours of classroom time and 1 credit hour of online labs placed on the learning management platform at the university. These online labs required students to individually interact with course concepts, respond to questions regarding their individual understanding, and provided faculty with an ongoing assessment of student interaction. Along with the change in the amount of class time and the addition of online learning, the lecture hall pedagogy was altered to change from "lecturing" to allow for weekly small groups (four students in a group within a large class of 210 students) to work on questions requiring critical thinking around course content. This strategy of moving from lectures to interactive sessions required a change in personnel to assist student learning in larger classes. This small group class activity is one of the important roles and responsibilities for Peer Mentors.

This pedagogical change required preparing undergraduate Peer Mentors, upperclassmen who have demonstrated academic success in the Introductory Psychology course, to share personal study strategies and facilitate learning in a peer to peer situation on a weekly basis. This strategy, although not new to academia, provided the course redesign initiative for Introductory Psychology the opportunity to explore a support system for learning that is economically efficient, academically effective, and a quality experience for students and faculty.

For years, Science, Technology, Engineering and Mathematics (STEM) programs have used undergraduate learning assistants to increase the number of future K-12 teachers, foster interactive engagement and student-centered learning, emphasize discipline based educational research, and increase the number of majors in a specific discipline (Otero, 2010). Applying this model of undergrad-

uate learning assistants to a large Introductory Psychology course added unique opportunities for encouraging adult learning principles by fostering out of classroom learning, providing a certificate upon graduation to upperclassmen who became Peer Mentors verifying their experience in training and technical assistance, and encouraging undergraduate students to consider majoring in Psychology or seek graduate study in Psychology.

As a component of the course redesign, this strategy also alleviated the drain on Graduate Teaching Assistants required to work with a large enrollment course and leveraged existing resources on campus. In 2007, The Learning Resources Center (LRC) and Student Support Services (SSS) developed university credit courses to prepare student tutors. By requiring Peer Mentors to enroll in these courses, this collaborative effort combined existing university resources and provided Peer Mentors foundational learning in facilitative mentoring.

Training Peer Mentors

Using theory-based techniques (McKeachie & Svinicki, 2006) (Baiocco & DeWaters, 1998), the professional staff of the LRC and SSS developed two core courses for training prospective tutors and other academic peer educators. Areas of emphasis in the courses include collaborative/interactive learning, communication skills for tutoring, developing successful tutoring sessions, learning and teaching styles, and content/skill-specific tutoring techniques. A variety of teaching methods including discussion, group work, and experiential exercises are utilized because active learning/participation is essential to course mastery and to achieve the course objectives. Students model, practice, evaluate, and develop tutoring techniques alone and in groups, and apply the principles and strategies they learn in actual tutoring sessions. The curriculum enables undergraduate learning assistants to develop confident, flexible tutoring styles that empower students (tutees or mentees) to become confident, self-reliant learners.

To meet the international tutor training standard, staff from the LRC and SSS completed a re-certification packet for International Tutor Training Program Certification (ITTPC) from the College Reading and Learning Association (CRLA) in 2013 (http:www.crla.org). After the appropriate level of training and experience, tutors

are awarded CRLA "Certified Tutor," "Advanced Certified Tutor," or "Master Certified Tutor" certification. LRC/SSS tutors are paid according to the amount of training and experience (Table 1).

Table 1

Levels and Payment for Peer Mentors

CRLA Certified Training	Experience <25 hours	Experience>25 hours
LRC Alternate Level 1 Tutor Training (online/no credit)	$8.25	$8.75
EDUCATION 313 or ENGLISH 395 (Writing Tutors) Level 1 Tutor Training	$8.25	$8.75
EDUCATION 314 Level 2 Tutor Training	$8.75	$9.25
Master Tutor Level 3	$9.25	$10.25

Currently, Peer Mentors are required to complete Level 1 training by taking EDUCATION 313, ENGLISH 395 (a credited training course for writing tutors), or the non-credit online version, and completing 25 hours of tutoring. Level 2 certification is obtained by completing EDUCATION 314 and by tutoring an additional 25 hours. The academic content of these courses are multidisciplinary, with an emphasis on metacognition and self-regulation (Fox, 2008). The course allows students more time and opportunities to integrate training with actual tutoring experiences and receive instructor feedback, conduct self-reflection, and have ongoing interaction with fellow tutor trainees and experienced tutors (Table 2).

Table 2
Peer Mentor Training Topics

Peer Mentor Training Thematic Topic Areas	
"Leadership and learning are indispensable to each other." John F. Kennedy	
Group Dynamics	Learning Styles
Think-Pair-Share	Tutoring Styles
Tutoring in the Content Area	Students with Disabilities
Challenges	Multi-Cultural Environment

Level 3 training (Master Tutor level) is optional and requires an additional 25 hours tutoring, completion of curriculum for students to use their analytical abilities, a research project, and a practicum. While many students complete additional training to increase their pay, students consistently state on their evaluations that they see the value in additional training (2007-2012) to improve their tutoring.

The way that students acquire subject matter understanding and develop skills is increasingly promoted within the context of their personal and social experiences. Chickering's universal model (1993) is used as a "framework explaining college students' evolving behaviors and attitudes" (Fox, 2008, p. 4), thus recognizing the individual, social, and multicultural nature of background knowledge and learning styles. Higher education studies of college student retention (Tinto, 1993) emphasize students' early and sustained involvement and engagement with the institution if they are to persist to graduation. The courses serve the LRC/SSS Peer Tutors and 10-12 Peer Mentors trained each year and also provides academic peer training and support for other campus units that offer peer tutoring, undergraduate TAs, peer discussion leaders, peer advisors, or orientation leaders.

UMBC has supported peer tutoring for 45 years. Its offerings of small group academic and success seminars, learning communities for first year students, and the adoption of learning competencies that promotes active learning in the revised general education curriculum implies a shift towards creating more opportunities for students to receive active forms of instruction. The Concepts and Practice of Peer Assisted Learning I and II courses directly impact the academic,

social, and personal development of students who elect to become involved with tutoring, and complement UMBC's ability to engage students more actively in their learning process. This is important for Peer Mentors in our introductory psychology course as they need to have clarity around their roles and responsibilities, gain insight into the learning process, and reflect on their work with incoming freshmen in the course.

Comparing Graduate Teaching Assistants

Careful preparation for Peer Mentor's structured work can add to cost savings as undergraduate assistants are less expensive than Graduate Teaching Assistants (GTAs) in research universities. The UMBC cost data for GTAs indicates an average salary of $17/hr, whereas undergraduate peer mentors earn $8-9 dollars an hour. Typically one to one-and- one- half GTAs are assigned to 600 students for 20-30 hours/week for the semester, whereas the optimal ratio for peer mentors is one to 60 with a projected semester investment of three hours/week for each Peer Mentor. The cost difference using 6 undergraduate Peer Mentors for a maximum of 18 hours a week over 15 weeks would cost about $1200 versus payment for one-and-one-half GTAs for the semester at approximately $11,114. As we have progressed to double the number of Peer Mentors, the cost has remained less than the GTA costs.

The Graduate Teaching Assistant was not totally removed from this redesigned course, as managing the online database for grades and activities was considered a role not appropriate for undergraduate students and was a time burden for faculty who should be focusing on assisting students. Therefore, the course maintained one Graduate Teaching Assistant to manage the large database and eliminated the half time position, saving $2,500 in student support costs for the course in one semester.

More importantly, students enrolled in Introductory Psychology had easier access to Peer Mentors, as Graduate Teaching Assistants often have class schedules that conflict with student requests for assistance. Peer Mentors' availability and consistent presence on campus during weekdays and weekends allowed for more opportunities for utilization. Since many students requested assistance on weekends, it was important to emphasize with the Peer Mentors that their

role is professional and no mentoring is allowed in dorm rooms. The Peer Mentor role is professional in nature and the requirement to use study lounges, common areas, and classrooms is enforced.

Additional benefits of Peer Mentors are their ability to afford assistance to students of similar diversity and to address common concerns that may not be shared with faculty. Peer Mentors are not viewed as an extension of faculty, but rather as a resource that has "been there and done that", as well as an "older sibling" who can guide students in the transition to college time management. These Peer Mentors are similar to student assistants who "provide feedback: as observers, as consultants on teaching projects, and as consultants about student life outside of the classroom"(Cox, 2001, p. 168).

Training for Graduate Teaching Assistants varies across programs and departments at the University, but Peer Mentors receive a standard curriculum and have weekly supervision with Psychology faculty teaching the course. Peer Mentors keep a log of their sessions with students in the course and provide a monthly time sheet to the LRC. This experience in pre-professional employment allows Peer Mentors "hands-on" exposure to training and technical assistance issues, and gives faculty solid evidence of Peer Mentors' strengths and weaknesses that are typically highlighted in their future job recommendations and applications to graduate study. Additionally, Peer Mentors applying to graduate school have the added advantage of gaining experience that is valued in teaching assistantships for any graduate program.

Although this strategy of having undergraduates support learning of peers is not new, the evolution of the role is gaining support. Programs have identified that this peer program empowers student learners, contributes to student success and retention, encourages faculty productivity, and broadens the learning experiences for Peer Mentors (Warner and Farris, 2001). It was the goal of this redesign to provide assistance to all entering freshman college students enrolled in Introductory Psychology, so that they could transition to a more disciplined yet independent method for handling course assignments. Fingerson and Culley (2001) found that visibility of undergraduate teaching assistants in a Sociology course, who had similar roles as Peer Mentors, shifted the learning paradigm in class by encouraging

undergraduates to take on the role of active learners. This certainly has occurred with Peer Mentors n the large lecture hall, where anonymity can easily remove a student from interaction.

Many supplemental programs for learning target only deficient learners, but this Peer Mentoring model applies to all students and sets the goal for empowering long-term learning strategies. As such, our experience demonstrates that most students who do very well or do very poorly tend to request more time with Peer Mentors, than those with average performance in the course.

Outcomes

Over the last four semesters 42 undergraduates used Peer Mentors by scheduling at least two study sessions prior to unit exams. The exam grade average of students who utilized peer mentors was higher than the overall class mean (Table 3 and Table 4).

Table 3

Course Grades Across Four Semesters

	Class Mean	SD	Students Studying with Peer Mentors—Group Mean	SD
Fall 2009	79.6% (n=208)	17.7	84% (n=15)	3.67 (Range 58%–90%)
Spring 2010	79.3% (n=191)	16.2	83% (n=10)	3.5 (Range 78%–92%)
Fall 2010	79.5% (n=201)	18.6	84% (n=9)	3.2 (Range 77%–86%)
Spring 2011	77.2% (n=195)	17.7	80% (n=8)	15.8 (Range 44%–94%)

Table 4
Course Grades Fall 2011/Spring 2012 semester

	Final Exam Average with Peer Mentors	Final Exam Average without Peer Mentors	Final Exam Average with Grad TA	Final Exam Average with no support
Final Exam Average	76.24%	71.05%	71.75%	71.74%
Final Course Grade	84.57%	75.84%	81.20%	76.76%

Although this finding does not control for student GPA, re-peat students, or student motivation to learn, the students reported deferring to Peer Mentors over Graduate Teaching Assistants and preferring the flexibility of the Peer Mentors schedule. This can be seen in the pattern of poor attendance data for weekly Graduate Teaching Assistants review sessions, where the average attendance before exams was up to only 10 students. Peer mentors assisted four or five students each week, during class small groups and/or individually, suggesting that peer mentors efforts were more consistent and continuous. It is difficult to claim significant difference based on the Peer Mentor program, because of the numerous variables that impact learning, but the students' requests for and use of the Peer Mentors have increased.

Peer Mentors are not only helpful with exam study sessions, but they facilitate student online interactivities and discussion board participation which is part of the overall course grade. Peer Mentors monitor and respond to questions on discussion boards in Intro-ductory Psychology. Questions regarding clarification of content or discussion about online quiz questions allows for a "student run" forum on course content. This virtual mentoring allows students to post questions and receive direction from Peer Mentors 24/7. Be-cause the discussion board did not receive many hits by midterm of this most recent semester, faculty administered a classroom survey to determine what steps would encourage participation. Students want-ed extra credit and/or actual questions posted that would be similar to the unit exam. Faculty did not agree to this type of posting, as class attendance was dwindling and efforts to increase student partic-

ipation in class would have been compromised if this type of activity was solely online. However, the top 10% of participating students on the discussion board received a bonus point at the end of the semester to reward this. During the most recent summer session, the discussion board was identified as five percent of the final grade. Total participation was strikingly increased and the quality of the postings was much improved. The Peer Mentors monitored the site, but this student-run discussion board with clear parameters established for topics was an area where Peer Mentors could apply "virtual tutoring" and garner student participation.

Capturing student evaluation of peer mentors

Over the last four semesters it has become apparent that a separate student evaluation of Peer Mentors is essential to garner the information for program design and effectiveness reporting. Inclusion in established Student Course Evaluation Questionnaires or online feedback forms have not been successful in getting the targeted information about the utilization or satisfaction of Peer Mentors in the course. Focus group data have demonstrated a positive effect of Peer Mentors, with comments such as, "small group activities in class are helpful especially with Peer Mentors" and "Peer Mentors' help in studying" compared to "TAs (Graduate Teaching Assistants) are never available and don't answer emails." There have been no negative comments in these focus groups regarding Peer Mentors. Focus groups in this course also found students reporting that Peer Mentors are less intimidating to the undergraduate student, as Graduate Teaching Assistants (GTAs) are often viewed as extensions of faculty, particularly since GTAs manage the grade center.

The following Peer Mentor evaluation form was piloted in one section of the course in order to develop a meaningful tool. However, students were less willing to evaluate Peer Mentors. Some students reported that they "did not need anyone's assistance," "Peer Mentors were more available in one section than in another due to Peer Mentor's class schedules," and "I prefer my own study group." However among the students who did use Peer Mentors over the last two semesters, students reported "exceptional assistance and non-threatening help with course content and exam preparation." The response rate for evaluation of Peer Mentors was low, but students who

requested Peer Mentor assistance for studying scored Peer Mentors positively with an overall rating of 3.5 (on a scale of 1 to 5) and a range of 3 to 5 among their responses. However, in subsequent semesters students provided substantial feedback on peer mentors (See following pages for Peer Mentor Evaluation).

Providing this evaluation online, as well as providing students with an incentive to participate will be an important aspect to encourage compliance with Peer Mentor evaluations. The lack of evaluation response is not unlike the response rate for faculty evaluations in courses each semester, but extra credit and separating this Peer Mentor evaluation process from the standard course evaluation procedure will be planned well ahead of semester's end. See Table 5 for results.

Table 5
Student Feedback on Peer Mentors

Category	Average Response Scale 1–5
Shows active interest in my study group, study session	4.47
Honest and helpful in group settings	4.57
Creates a relaxed learning or discussion environment	4.51
Good listener	4.33
Responds to my questions	4.55
Admits when he/she does not know	4.20
Identifies key concepts	4.43
Keeps study group on track	4.15
Guides us to use other resources on campus or online	3.73
Assists me with study strategies	4.11
Helps me find answers to questions	4.22
Asks good questions that make me think more about course content	4.20
Includes all members of study group in discussion	4.13

Peer Mentor Evaluation

1. How many times did you work with a Peer Mentor in this course? _____
2. What was the nature of your interaction? (circle all that apply)
    a. Small group in class
    b. Exam prep/study session
    c. Online discussion board

Peer Mentor Behavior	0 Does not apply	1 Strongly Disagree	2 Disagree	3 Somewhat Agree	4 Agree	5 Strongly Agree
Shows active interest in my study group, study session						
Honest and helpful in group settings						
Easy to schedule time with them						
4Creates a relaxed learning or discussion environment						
Good listener						
Responds to my questions						

Admits when he/she does not know								
Identifies key concepts								
Keeps study group on track								
Guides us to other resources on campus or online								
Assists me with study strategies								
Helps me find the answers to questions								
Asks good questions that make me think more about course content								
Includes all members of the study group in discussion								
I prefer working with the Peer Mentor for studying								
I prefer to study with the Grad TA								

Summary

Student-assistant teaching is not a new concept, but this model has been helpful to enhance student participation and meet the needs of contemporary higher education students. In this experience a community of learners begins in a gateway introductory course in Psychology, with Peer Mentors establishing a connection among students around the goal of learning content in a specific course. The collaboration with the Learning Resources Center for peer mentor training eliminated the need for psychology faculty to develop a separate training program, while maintaining supervision by the psychology faculty. Further assessments are needed to determine if this experience translates into continued use of a learning community throughout undergraduate experiences once this model is introduced into a foundational gateway course. Further this program has proven to be cost effective by decreasing the drain on GTAs and promoting the retention of first year students.

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Successful and Struggling Students' Use of Reading Strategies: The Case of Upperclassmen

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Abstract

Research demonstrates that successful and struggling first-year college students use appreciably different strategies when navigating academic texts. Limited research, however, has specifically addresses how upperclassmen use such strategies. This study aimed to fill this gap by investigating the reading strategies used by successful and struggling juniors and seniors. Participants filled out a quantitative strategy inventory called the Metacognitive Assessment of Reading Strategies Inventory (MARSI). The results showed that successful and struggling students differed in the frequency with which they used one-third of the MARSI's items. The possible reasons for these results are discussed and pedagogical recommendations are given.

Keywords: upperclassmen, reading strategies, MARSI, struggling students, successful students

Respected volumes such as *College Reading Research and Practice* (Paulson, Biggs, Laine, & Bullock, 2003) and *Teaching Developmental Reading: Historical, Theoretical, and Practical Background Readings* (Stahl & Boylan, 2003) and articles in well-known journals such as the *Journal of Developmental Education, Journal of College Reading and Learning, The Learning Assistance Review* have both described the comprehension problems college students face and proposed procedures and techniques to overcome them. Most of these texts have focused on first-year students in developmental reading programs; however, it is not only unfair to hold these programs responsible for remedying every

unprepared student's comprehension difficulties, but it is also unlikely that they could do so in one to two semesters.

A handful of studies have demonstrated that comprehension remains elusive for many upperclassmen (i.e., male and female juniors and seniors). Byrd and Macdonald (2005) studied the college readiness of eight first-generation non-traditional students (aged 25 and older) at a small North American university. All participants were juniors or seniors and had already completed an associate's degree, yet half of them reported being unequipped to comprehend assigned texts. Difficulties included understanding vocabulary and completing the large volume of compulsory weekly reading. These findings caused the authors to lament that "reading courses are usually only offered at the developmental level" (p. 32) and call for "the development of and support for college-level reading skills throughout the college experience" (p. 35). Schnee (2008) also studied the academic skills of non-traditional students. Fourteen students, most of whom were African American females, were finishing degrees at a large public university in New York City when they were interviewed about their self-perceived academic progress. In spite of having finished at least six semesters of college, some still reported problems critically evaluating academic texts. Their instructors also noted the same problems.

Other studies have found that college upperclassmen struggle with text comprehension. In their description of a research writing course at the University of Houston that was team-taught by a librarian, an English instructor, and a learning strategies counselor, Mazella, Heidel, and Ke (2011) state that many junior-level participants had trouble detecting discourse structures and main ideas in academic prose, leading them to speculate that these students "may never have had significant practice in independently identifying these features or extracting this information for themselves" (p. 45). They note that the English instructor was unable to remedy such problems.. Rachal, Daigle, and Rachal (2007) analyzed the study skills of 485 students at a small North American university. Among other things, they found that many participants had difficulties with reading comprehension, irrespective of whether they were freshmen or seniors. Specific difficulties included comprehending main ideas, supporting ideas, and

vocabulary. Participants also felt distracted when studying and found taking notes difficult. Notably, half of participants reported reading slowly.

The Importance of Reading Strategies

Even though the above studies demonstrate reading comprehension challenges for both traditional and non-traditional students, it would be facile to generalize about the reading comprehension abilities of upperclassmen based on a handful of studies. However, these studies do suggest that instructors and tutors need to help many students at this level to better understand what they read. One way to do this is by teaching them to appropriately use *reading strategies,* which are the "deliberate, goal-directed attempts to control and modify the reader's efforts to decode text, understand words, and construct meanings out of text" (Afflerbach, Pearson, & Paris, 2008, p. 15). Previous research has demonstrated that students with high standardized test scores, grade point averages (GPAs), and self-assessments of their own literacy skills (i.e., *successful students*) better comprehend academic texts than those with relatively lower standardized test scores, GPAs, and assessments of their own literacy skills (i.e., *struggling students*) (Poole, 2013a). Paris and Jacobs (1984) specified that successful students are measured in their selection of strategies and willingness to modify their use of them as text difficulty and format require. They are aware that they need to adjust their strategy use because they regularly monitor their comprehension. They also utilize their background knowledge and establish reading goals (Poole, 2013b; Taraban, Rynearson, & Kerr, 2000a). Moreover, they tend to reread (Sheorey & Mokhtari, 2008) and focus on global comprehension more than their struggling counterparts (Saumell, Hughes, & Lopate, 1999).

The situation is markedly different for struggling students. They less often highlight meaningful passages, reread, and connect different parts of a text than successful students (Taraban, Rynearson, & Kerr, 2000b). In addition, their inability to overcome vocabulary comprehension problems makes overall comprehension difficult (Saumell, Hughes, & Lopate, 1999). Struggling students also frequently neglect to monitor their comprehension (Sheorey & Mokhtari, 2002), and they take notes less often than successful stu-

dents (Poole, 2013b).

Examining successful students' strategy use gives instructors and tutors insight into the knowledge and abilities they possess, which can then be used to develop pedagogical materials to help their struggling peers (Sheorey & Mokhtari, 2008). Problematically, previous research has largely neglected upperclassmen, and thus little is known about how students from this population use reading strategies. The following study aimed to fill this gap by comparing the reading strategies that successful and struggling college upperclassmen use. Such knowledge can provide college instructors with an understanding of the strategies struggling students need to utilize in order to improve their comprehension of academic materials. Learning assistance centers often explicitly help students with specific literacy skills (Perin, 2004), and thus they can use the findings to predict their clients' needs and train tutors to appropriately address them. The following question was used to guide the study: *How do successful and struggling upperclassmen differ in their use of academic reading strategies?*

Method

Participants

The participants in this study consisted of 272 (male=118; female=154) undergraduate students at one large Southern university. All were native speakers of English who were between ages 18 and 50 (*M*=22). Their GPAs ranged from 1.6 to 4.0 (*M*=3.13). 32% were social science majors, 24% were natural science majors, 8% were business majors, 7% were humanities majors, and 6% were arts majors. The remaining 23% were either majoring in a cross-disciplinary subject that does not clearly fit in any of the categories listed above or double majoring in two academic areas (e.g., natural sciences and humanities).

All participants were enrolled in an upper-division writing course required by the university. Students enroll in it their junior or senior year. According to the curriculum guide, the course primarily focuses on "the conventions of using textual evidence to support an argument or an analysis of an issue relevant to the student's major discipline." The course does not include reading strategy instruction, yet due to its research emphasis, students must be able to comprehend texts from composition studies and their major. No information

about participants' previous reading strategy instruction was available.

Instrumentation

The first part of the research instrument consisted of demographic questions regarding participants' gender, first language, major, age, and GPA. The second part was a 30-item quantitative survey called the *Metacognitive Assessment of Reading Strategies Inventory* (MARSI) (Mokhtari, Sheorey, & Reichard, 2008). *Metacognition* refers to the recognition of one's thinking processes and the monitoring of them. In the context of reading, metacognitive knowledge involves "the knowledge of the readers' cognition about reading and the self-control mechanisms they exercise when monitoring and regulating text comprehension" (Mokhtari & Reichard, 2002, p. 49). The MARSI is designed to tap into students' metacognitive knowledge about the strategies they use when engaging with academic texts. It is self-reporting and contains three types of strategies: support ($N=9$), problem-solving ($N=8$), and global ($N=13$). Support strategies are tools that assist students in understanding what they are reading. Taking notes, reading aloud, and summarizing to reflect on important information are three examples of this type of strategy. Problem-solving strategies are measures that students utilize to surmount comprehension difficulties. Reading slowly but carefully, getting back on track when concentration is lost, and rereading difficult texts are examples of this strategy type. Finally, global strategies are techniques students use to plan how they are going to approach texts and monitor their comprehension of them. Instances of global strategies include thinking about what one knows to aid comprehension, establishing whether a text's content fits one's reading purpose, and deciding what to read and what to ignore. The MARSI utilizes a five-point Likert scale (1= "I never use this strategy"; 5= "I always use this strategy") in which average scores of 3.5 or higher signify high strategy use, while scores of 2.5 to 3.4 and 2.4 and below signify medium and low strategy use, respectively.

Data Collection and Analysis

Data were collected during two semesters; due to scheduling conflicts, it occurred at different times throughout each semester. The participants filled out the instrument at the beginning or end of class. They first completed the demographic questions and then filled

out the MARSI. In order to reduce response bias, participants were told that there were no correct or incorrect responses and that their answers would not affect their class grade. In addition, the author did not survey his own students. Finally, participants did not identify themselves on the instrument. This process took approximately 15–20 minutes for each class.

Participants' success was determined by their cumulative GPA. Poole (2013b, 2014), Taraban, Rynearson and Kerr (2000a, 2000b) and Kardash and Amlund (1991) likewise used GPA as a measure of students' success and found that the frequency with which high and low groups reported using strategies significantly differed. As discussed above, such results suggest that struggling and successful students read in appreciably different ways. The current study utilized the top 25th percentile (N=70, 3.6≥) and the bottom 25th percentile (N=70, 2.7≤), respectively, to represent successful and struggling groups. The t-test was used to see if there were significant differences between them. According to Shavelson (1996), this statistic is used to discover whether two groups' average scores are significantly different. Confidence intervals were set at 95%.

Results

Overall strategy use for successful (M=3.40, SD=0.56) and struggling students (M=3.32, SD=0.61) was medium. Global strategy use was likewise medium for successful (M=3.39, SD=0.60) and struggling students (M=3.28, SD=0.66), as was support strategy use (M=2.93, SD=0.78; M=3.00, SD=0.74). Both successful (M=3.94, SD=0.54) and struggling (M=3.75, SD=0.63) students used problem-solving strategies with high frequency. There were no significant differences between these groups overall or on any of the three subscales (p>0.05).

Table 1 shows that participants significantly differed in their use of 10 strategies: reading aloud(t[138]= -2.01; p<0.05); summarizing(t[139]= -1.98; p<0.05); skimming (t[138]= -2.19; p<0.05); reading purpose(t[138]= 2.48; p<0.05); getting back on track (t[138]= 2.55; p<0.05); adjusting reading speed(t[138]= 2.16; p<0.05); deciding what to read(t[137]= 2.04; p<0.05); using tables, figures, and pictures (t[138]= 2.00; p<0.05); rereading (t[130]= 2.02; p<0.05); and using context clues (t[131]= 3.09; p<0.05). On only three strategies did

struggling students have significantly higher use than their success-ful peers: "When text becomes difficult, I read aloud to help me understand what I read" (M=3.51, SD=1.34; M=3.02, SD=1.51); "I summarize what I read to reflect on important information in the text" (M=3.23, SD=1.11; M=2.83, SD=1.27) and "I skim the text first by noting characteristics like length and organization" (M=3.16, SD=1.35; M=2.69, SD=1.20). Table 1 also shows that half of these strategies in which groups differ were global (N=5), while the re-maining five were distributed between problem-solving (N=3) and support (N=2) strategies. Both groups used half (N=5) of the strate-gies with high frequency and half (N=5) with medium frequency.

Discussion

The current study revealed that successful and struggling students used used one-third (N=10/30) of the strategies contained on the MARSI with significantly different frequencies. Specifical-ly, they showed that successful students used seven strategies more frequently than their struggling peers, while the opposite was true for the remaining three strategies. However, there were no significant differences for two-thirds of the strategies, many of which struggling students used with high frequency. This raises the question of why such a large academic performance gaps exists between the groups. While precise explanations are not available, one possibility is that struggling students were not able to adjust the quantity and quality of strategy use according to task and textual demands (Kletzien, 1991). Another possibility is that they were unable to coordinate their use of strategies, which Jimenez, Garcia, and Pearson (1995) and Kam-hi-Stein (1998) discovered to be a key characteristic of successful bi-lingual readers. Albeit unlikely, a third possibility is that literacy skills accounted for a small part of their academic performance.

Regardless of the reasons for them, these results suggest that strategic instruction is needed to help struggling female and male upperclassmen better comprehend academic texts. Mokthari, Sheo-rey, and Reichard (2008) point out that the MARSI, itself, can be an instructional tool. Students can fill out the survey and discuss the results with peers, instructors, and tutors. If students exhibit confu-sion about when and how to use strategies, instructors and tutors—as well as other students—can furnish such information through direct

explanations and modeling. If instructors and tutors do not feel that it is necessary for students to fill out the entire instrument, they can select specific MARSI strategies for explanation and modeling.

More specific pedagogical interventions are discussed below. The possible reasons behind struggling and successful students' strategic differences are first discussed.

Reading Aloud

Of the three strategies struggling students used significantly more than their successful peers, the first involved reading difficult texts aloud. As a classroom practice, it has been found to increase children's vocabulary and listening comprehension skills (Lane & Wright, 2007). Nevertheless, it is not clear why struggling college students used this strategy with high frequency when the text was hard to understand. Recent research has suggested that even successful students listen to an inner voice when reading difficult texts (Perrone-Bertolotti et al., 2012). Thus, it is possible that struggling students read ($M=3.51$, $SD=1.34$) aloud significantly more ($t[138]=$ -2.01; $p<0.05$) than their successful peers ($M=3.02$, $SD=1.51$) because, for some unknown reason, they could not hear their inner voice. Regardless of the cause of reading aloud, instructors and tutors could help struggling students by asking them to explain when and why they read aloud, and use such information to design interventions that address the comprehension difficulties students reveal.

Summarizing

A second strategy struggling students ($M=3.23$, $SD=1.11$) used significantly more ($t[139]=$ -1.98; $p<0.05$) than successful students ($M=2.83$, $SD=1.27$) was summarizing texts to reflect on important information. These results do not mean that they did so effectively. It is possible they did not view texts as unified entities, but instead a series of individual sentences, and thus found themselves using summarization more frequently. According to Hare and Borchardt (1984), such students may be more likely "to make decisions about summary inclusions and deletions on a piecemeal, sentence-by-sentence basis, whereas older and/or good students make their judgments based upon the meaning of the whole text" (p. 63). Helping struggling students may be challenging, for they are frequently unable to recognize key ideas, and their notion of them may even differ from that

of successful students and teachers (Winograd, 1984). One way to help all students understand the content and structure of summaries is by modeling the process of composing one. Frey, Fisher, and Hernandez (2003) outline one procedure. They state that texts that specify where students need to pause and talk about the meaning of a passage and the unknown words it contains should first be handed out. Next, students propose words and phrases that capture the essence of the passage, which the instructor writes on the board. The instructor uses a think-aloud procedure to demonstrate how to use these words and phrases to compose a one-sentence summary of the passage. The whole class then discusses the accuracy of the summary and makes modifications, if necessary. Afterwards, instructors can put students into small groups to replicate the process with a new text. This time, however, they cooperatively determine the passage's key words and phrases and decide how to use them in a one-sentence summary. This activity also could be modified for use at learning assistance centers. Specifically, tutors could use relatively short texts and students could watch videos of it being carried out in real classrooms.

Skimming

The third and final strategy that struggling students (M=3.16, SD=1.35) used significantly more (t[138]= -2.19; p<0.05) than successful students (M=2.69, SD=1.20) concerned skimming the text to note its length and organization. As its name says, this strategy focuses on surface-level structural features rather than the content of a text. Alexander (2005) stresses that struggling students utilize this and other superficial strategies because their low reading proficiency constrains their ability to use meaning-focused strategies (e.g., relating background knowledge to content). She suggests that as students become better readers, they employ less of the former and more of the latter. Such an explanation could account for struggling students' greater use of this strategy in the current study. However, this does not mean that assistance should not be offered to them. As discussed above, students could fill out the MARSI, rationalize their use of each strategy, and discuss the results with instructors, tutors, and peers. In the case of skimming, such an exercise could reveal erroneous notions of its efficacy (e.g., it will lead to deep text comprehension), reliance on it because of poor study habits (e.g., leaving home-

work until the last minute), or an inability to use other strategies.

Reading Purpose

Struggling students used three strategies significantly more than successful students. The opposite was true for the other seven strategies, the first of which was establishing a reading purpose. Why struggling students ($M=3.57$, $SD=0.77$) had a purpose in mind significantly less often ($t[138]= 2.48$; $p<0.05$) than successful students ($M=3.91$, $SD=0.86$) is not clear; however, it could be related to the former's background knowledge—or lack thereof. Smith's (1985) study of science graduate students revealed that those with little knowledge of the assigned texts' content—particle physics—felt discouraged, had little motivation to complete them, and probably comprehended little of what they read, even though they were otherwise strong students. It is possible that struggling students in the current study occasionally also had scant knowledge of the topics covered in readings, which lead them to feel frustrated, and thus set few goals beyond reading from the first to the last page. Importantly, students are likely to become more goal-oriented if instructors and tutors provide them with background knowledge about an assigned text before reading it (Nist & Holschuh, 2000). One way to do this is by explaining to students the rationale—or at least, the perceived one—for choosing a text. Such information may provide students with a global purpose to guide their exploration of a text. Research has demonstrated that some college instructors already believe that many students will not automatically establish their own reading goals, and thus need to be explicitly given the rationale for reading a particular text (Lewis & Hanc, 2012). Learning assistance center staff could encourage faculty to furnish this information so tutors avoid misleading students by making inferences about the purpose of texts they, themselves, have not assigned.

Faculty and tutors could also foster purpose-driven reading by using learning logs. Carney, Fry, Gabriele, & Ballard (2008) describe a method used in their psychology classes that requires students to do one of the following five things when they read: identify theses, compare and contrast salient concepts, explain how the text relates to their lives, critique its key components, and note parts that evoke specific emotions and explain why. This approach seeds pur-

pose into each assigned text and inspires students to read more than quizzes do.

Getting Back on Track

An additional strategy that is probably necessary, yet not sufficient, to comprehend challenging texts is getting back on track when concentration is lost. While both struggling (M=4.04, SD=0.92) and successful students (M=4.39, SD=0.64) used this strategy with high frequency, the former used it significantly less than the latter (t[138]= 2.55; p<0.05). Previous research has shown that most college students frequently lose concentration. In Rachal, Daigle, and Rachal's (2007) studied mentioned above, 87% of college students reported getting distracted. Struggling students may have gotten back on track less often after losing concentration because their lack of comprehension lead to frustration and boredom and a subsequent unwillingness to engage with the text. While there is no single pedagogical intervention capable of remedying all comprehension difficulties, instructors and tutors can at least encourage struggling students to avoid distractions, many of which may be electronic in nature. Recent research has shown that students with low GPAs tend to use instant messaging more than those with high GPAs (Fox, Rosen, & Crawford, 2009). Jacobsen and Forste (2011) and Junco and Cotton (2012) have also found negative relationships between college grades and the use of electronic media, such as cell phones and social media sites, leading them to conclude that multitasking restricts both the time devoted to coursework and the cognitive processing that goes into it. Clearly, then, instructors and tutors need to help students avoid losing concentration by reminding them that the demands of assigned readings in upper-division classes proscribe multitasking. In addition to simply encouraging students to turn off digital devices when reading, practices that encourage them to focus on the text and their own thoughts (i.e., think-alouds) should be modeled (Smallwood, Fishman, & Schooler, 2007).

Adjusting Reading Speed

Instructors and tutors also need to remind struggling students that their reading speed should be adjusted depending on the demands of the task. Overall, they did this with high frequency (M=3.69, SD=1.25), but significantly less (t[138]= 2.16; p<0.05) than

successful students (*M*=4.10, *SD*=1.01). Previous research has shown that struggling students tend to believe that reading speed is an attribute of successful students (Saumell, Hughes, & Lopate, 1999). This could be because they observe successful students finishing texts more quickly than they, themselves, do and believe that their comprehension will increase if they emulate their peers. Another explanation could be that they lack sensitivity to textual variation—as Garner (1980) found to be the case with junior high school students—and thus are not aware of features that might require varying degrees of time and attention. In either case, struggling students need to be aware that reading speed will vary according to task difficultly, and that they should not sacrifice comprehension in order to get through a text rapidly.

Deciding What to Read

Another strategy struggling students (*M*=2.99, *SD*=1.16) used significantly less (*t*[137]= 2.04; *p*<0.05) than successful students (*M*=3.40, *SD*=1.23) was deciding what to read and what to ignore. Kamhi-Stein (2003) has suggested that non-selective reading is related to reading goals, or lack thereof. In her study of bilingual college students who struggled with college-level reading, she found that those who struggled with college-level reading perceived reading to be largely a matter of reading all the words from the beginning to the end of the text. She suggests that the absence of reading purpose could be the cause for such an indiscriminate approach to text. As discussed above, instructors and tutors can take steps to help struggling students establish reading goals, such as giving them background information about the text (Nist & Holschuh, 2000), providing them with a reading rationale (Lewis & Hanc, 2012), and utilizing learning logs (Carney, Fry, Gabriele, & Ballard, 2008).

Using Tables, Figures, and Pictures

The fifth strategy that successful students (*M*=3.36, *SD*=1.23) used significantly more (*t*[138]= 2.00; *p*<0.05) than struggling students (*M*=2.90, *SD*=1.47) concerned the utilization of tables, figures, and pictures to make texts comprehensible. Differences in academic major could account for these results. The use of visuals aids is likely to be more common in majors that are quantitatively-based and experimental in nature than in the arts and humanities. In fact, slightly

more than 37% of successful students were biological and physical sciences, while that percentage was 10% for struggling students. Another possibility is that students must have reached a specific knowledge threshold for visual representations to be useful. In the case of graphs, Friel, Curcio, and Bright (2001) report that a certain competency in mathematics and capacity to engage in abstract reasoning are necessary in order to effectively use them. Many of the struggling students in the current study may not have reached this level, and thus avoided graphs. Still another possibility is that many struggling students did not know how visual aids related to text. Carney and Levin (2002) explain that even though visual aids can increase a text's comprehensibility, instructors need to help students realize that such a connection does, indeed, exist and show them how it promotes comprehension. They assert that requiring students to explain their connection with the text will make them aware of how and when they contribute to comprehension. Doing so will also shed light on the specific aspects of visual aids with which individual students have difficulty, which instructors and tutors subsequently can address pedagogically.

Rereading

The sixth strategy successful students (*M*=4.30, *SD*=0.90) used significantly more (*t*[130]= 2.02; *p*<0.05) than struggling students (*M*=3.97, *SD*=0.97) was rereading difficult texts. However, both groups used it with high frequency. High use of rereading among struggling students has also been found in previous research (Steinberg, Bohning, & Chowning, 1991). In addition, it has been shown to promote comprehension (Dyer, Riley, & Yekovich, 1979; Kuhn & Stahl, 2003). Struggling students may reread less because, as Zabrucky and Ratner (1992) found, their ineffective utilization of other strategies makes it less likely to help them understand more of a text than the first time they read it. They suggest that providing background knowledge about the text could help students better identify comprehension problems and focus on developing strategies to address them. Callender and McDaniel (2009) made a similar conclusion about the value of rereading for college students: If students do not have another purpose or task to carry out when rereading, increases in comprehension will be negligent. As stated above, learning

assistance center staff could ask faculty to furnish students with this information before referring them for tutoring.

Using Context Clues

The final strategy that successful students used significantly more ($t[131]= 3.09$; $p<0.05$) than their struggling peers involved the utilization of context clues to aid comprehension. As seen in Table 1, struggling students ($M=3.37$, $SD=1.08$) used this strategy with medium frequency, while successful students ($M=3.91$, $SD=0.94$) used it with high frequency. The reasons for such differences are not clear; however, previous research has suggested that students often use context to figure out the meaning of words (Schatz & Baldwin, 1986). It is possible that struggling students use this strategy less because they are unable to understand the context in which the word is placed (Stanovich, 1986). While contextualizing readings enables students to untangle vocabulary, it also permits them to critically evaluate texts. Nevertheless, the meaning of context is not identical in all disciplines. When evaluating chemistry texts, research has shown that good readers place importance on the scientific trends and technological capabilities of the era in which the text was written. When evaluating history texts, however, they focus on the writer's ideological viewpoint and the cultural milieu in which they wrote (Shanahan, Shanahan, & Misischia, 2011). Instructors and tutors must acknowledge these differences when helping students effectively use context clues. In addition, tutors with advanced knowledge of a particular discipline are more likely to be aware of these contextual factors and thus may be more apt to help struggling students notice them than tutors who merely possess strategic knowledge.

Limitations

The limitations of these pedagogical suggestions must also be acknowledged. Instructors and tutors will need to modify them according to local needs and available resources.

The study was also limited in the method it used to determine student success. GPA can be influenced by various factors, including level of motivation, socioeconomic status, and degree of family support (Robbins et al., 2004; Tross, Harper, Osher, & Kneidinger, 2000). Future studies should measure strategy use in light of narrower constructs. One such construct is reading proficiency, which can

be measured with instruments that have high degrees of validity and reliability (e.g., standardized reading tests). In addition, as Mokhtari, Sheorey, and Reichard (2008) acknowledge, the MARSI is a self-report tool which can only measure students' perceived—not actual—strategy use, and they therefore recommend complementing it with qualitative tools such as think-alouds and interviews. If possible, future studies should adopt this triangulated approach to investigating reading strategy use. Finally, researchers should try to administer the survey to all participants at the same time during the semester. Due to scheduling conflicts, this was not possible in the current study. However, the depth and intensity of reading tasks could vary throughout the semester, which could potentially influence participants' responses.

Conclusion

The goal of this study was to discover whether upperclassmen who struggled academically significantly differed from their successful peers in their use of academic reading strategies. The results showed that they differed on ten individual strategies, three of which struggling students used more frequently than their successful peers. Five of these strategic differences were global, while three were problem-solving, and two were support. The strategies struggling students used more frequently than their successful peers were support and global. In contrast, the strategies successful students used more than struggling students were global and problem-solving. Struggling and successful students used half the items with high frequency and half with medium frequency. Background knowledge and views about the nature of reading practices were among the explanations for such strategic differences. Regardless of their causes, these findings demonstrate that strategy instruction needs to continue into the junior and senior years of college. In order to obtain more valid and reliable data, future studies should use direct measures of reading proficiency and qualitative methods in order to directly observe strategy use.

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Table 1

Strategic Reading Differences between Struggling and Successful Students*

Strategy	Successful		Struggling		t	P-value
	M	SD	M	SD		
**SUP When text becomes difficult, I read aloud to help me understand what I read.	3.02	1.51	3.51	1.34	-2.01	.047
**SUP I summarize what I read to reflect on important information in the text.	2.83	1.27	3.23	1.11	-1.98	.049
**GLOB I skim the text first by noting characteristics like length and organization.	2.69	1.20	3.16	1.35	-2.19	.030
GLOB I have a purpose when I read.	3.91	.086	3.57	0.77	2.48	.015
PROB I try to get back on track when I lose concentration.	4.39	0.64	4.04	0.92	2.55	.012
PROB I adjust my reading speed according to what I'm reading.	4.10	1.01	3.69	1.25	2.16	.032
GLOB I decide what to read closely and what to ignore.	3.40	1.23	2.99	1.16	2.04	.043
GLOB I use tables, figures, and pictures in text to increase my understanding.	3.36	1.23	2.90	1.47	2.00	.047
PROB When text becomes difficult, I reread to increase my understanding.	4.30	0.90	3.97	0.97	2.02	.045
GLOB I use context clues to help me better understand what I am reading.	3.91	0.94	3.37	1.08	3.09	.002

*Differences significant at 0.05 level
**Mean was higher for struggling students

Book Review: *Peripheral Visions for Writing Centers*

McKinney, Jackie Grutsch (2013) *Peripheral Visions for Writing Centers*. Boulder, CO: Utah State University Press.

Reviewed by Stephanie Hopkins

In *Peripheral Visions for Writing Centers*, Jackie Grutsch McKinney explores the assumptions that people make about writing centers based on a common image that has been created and perpetrated over the years. She asks the question: What does "welcoming" mean? Is that the same thing for everyone? Does a plant or a comfortable couch equal the "home-like, welcoming environment" that is so often used to describe writing centers (p. 3, 21)? The author states that each center has its own story, which she refers to as "the grand narrative"(p.5) and this book dives deep into dissecting the similar stories that all directors tell of their writing centers.

The book's intended audience is those who supervise writing centers, however, anyone who works in higher education and is charged with marketing a department within the university may benefit from reading this book. Directors are encouraged to fully examine, question and think about what they are really saying and promoting when they describe what writing centers do. Obviously, there are daily tasks, as with any profession, but directors should want their constituents to understand the big picture and therefore they should honestly and accurately describe what their particular writing center is and how it helps the students. Directors need to keep in mind that "a home-like atmosphere" (p. 3) to one person may mean something else to another (p. 21).

McKinney's viewpoint is one of experience and a deep knowledge of the writing center environment. She has obviously spent

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years thinking about and digesting every aspect of writing center work. In her research for this book, she indicates that she received feedback from over 100 respondents (p. 92) and the results of that research are presented in the appendix of the book. She feels that the story that is told about writing centers is "problematic" and we should take a close look at it and create a new, better defined story (p. 91).

Peripheral Visions for Writing Centers is organized in six different chapters. The introduction begins by detailing what a typical day's duties in a writing center might encompass. It is also within the introduction that the author presents her main point. She states "that writing center work is complex, but the storying of writing center work is not"(p. 3). She refers to this "storying" as "the writing center grand narrative" (p.3). She makes the point that sometimes future administrators are not prepared for the actual work that is being done in the writing centers because the focus is on the image (p. 5).

In the following three chapters, the author explores what she points out might make some writing center directors a bit nervous, and what she refers to as "dissecting the grand narrative" (p.6). Chapters two and three focus on whether it is a good idea or not to market a writing center as a "comfortable place" (p.20). Chapter four explores the idea of how writing center work is different than what others on campus are doing and because of this belief, those who work in writing centers are different somehow too (p. 35). The author uses the word "iconoclastic" (p. 35) to describe what is thought of as the traditional writing center. In the past, these "iconoclastic" places were thought of as being like the rebel on campus, and by being considered different, centers were sometimes the first to have budget cuts, possibly be housed in less than desirable locations, or suffer other general campus maladies (p. 39). McKinney encourages writing centers to use this status as a boon rather than a bust.

Chapter five is by far my favorite. As time marches on and technology keeps changing, keeping up with that new technology appears to be a big challenge to many writing centers. Centers spend a lot of time promoting themselves as places to go (p. 58). Well, is that the same via a messaging service or Facebook? Can or will quality tutoring still take place in a virtual environment (p. 58)?   Long held

beliefs often interfere with the newer technology that students use now. When it is time to move on to new technology, sometimes old ways hold us back. One-to-one in person sessions are assumed to be the best way of tutoring writing, but we need to make sure it still is the best way. This chapter also focuses on the definition of what a tutor is and what he or she does.

The most outstanding feature of this book is the fact that it points out that directors need to be extremely careful of the reputation they are creating or fostering. They need to feel free to promote and brag about accomplishments and really let people know what they are doing. I do feel that another book could be built upon this one because each department within a university tells its own "story", and we should all examine the accuracy of the reputation that we have created. What else has been perpetuated through the years that we currently accept as fact that should be explored and defined more deeply?

The only disadvantage or overlooked topic that I can see from this book is that fact that it takes time to change a culture, even if it is one that we've created for ourselves. I agree that directors should look at their image, but when or if they try to change it, they have to remember that it won't happen over night. Leaders must remember to be diligent and patient as they work through the process.

The book is a very quick read at only 150 pages including the appendix and references. However, it is definitely worth reading and brings up very valid points. For those of us who are fairly new to a directorship position, it might cause us to take a step back and look deeper than the day to day activities and how we are promoting our centers.

The author did an outstanding job and really got her point across through writing this book. I highly recommend it. It is a must-read for those who are responsible for directing writing centers. I feel the bottom line is this: Image is everything and we should be very cognizant of how we describe our work. We should constantly be looking at what we are doing, how we are doing it, and questioning if it is right for our centers. Simply put, and like the author implies, we should all use our "peripheral vision" (p. 91).

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.

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- 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.
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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.

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